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Explore Business, Technology Opportunities and Challenges After the Covid-19 Pandemic

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Industry 5.0: A Panacea in the Phase of Covid-19 Pandemic Concerning Health, Education, and Banking Sector

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Abstract. The fifth industrial revolution focuses on sustainability with the aid of recent technologies and advanced digital information. Industrial revolution 5.0 develops successful procedures and creates quick enhancement in various industries. Resolutions to challenges modeled by COVID-19 Pandemic can be realized with the placement of Industry 5.0 based on smart technologies. During Covid-19 Pandemic where the world is suffering from a crisis, technological innovation is equipped to march forward with the mission, vision, new values, and principles. In COVID-19 Pandemic, these technologies are offering a remote service structure in various sectors and those who have implemented technology in their respective areas are more likely to recover faster than the others. This study focuses on the health care, education, banking, and aims to bring out the role of industry 5.0 in the selected sectors during the COVID-19 Pandemic. The study also identifies the challenges in realizing industry 5.0, identifies the several supportive structures and services of Industry 5.0 to aid out COVID-19 situation, and brings out a model which represents the stages of evolution for each selected sector and supportive features and facilities of Industry 5.0.

Keywords: Industry 5.0 · Revolution · Artificial intelligence · Robots · Covid-19 pandemic · Synergy Environment

1 Introduction

The intervention of the latest technologies and customization and personalization of products and services are the two major changes happening in industries worldwide. The combined effect of these two concepts in the industrial sector led to the unfolding of Industry 5.0. Several improvements in technology help us to achieve substantial growth in industrial productivity. This substantial growth in industrial productivity generates a sequence response in businesses and industries. New products in huge quantities are being offered. Demand and supply relationships in several services and products change. Innovative trades are born, new sectors are born, some become outdated and existing businesses are altered. Alterations in internal and inter-sectoral relations are detected. Technology innovation research obtains funding for a further research extension activity. All these modifications influence people in many ways. Therefore, we call this the fifth

industrial revolution. Industry 5.0 key focuses on problem-solving and value creation, diversity, decentralization, and sustainability. The object of Industry 5.0 technologies is to make a smart atmosphere with real-time competencies. Johansson (2017) the fifth industrial revolution is about the association between the human mind and technologies in the workforce. Gotfredsen (2016) lists the aids of a collaborative human and machine factory floor (Fig. 1).
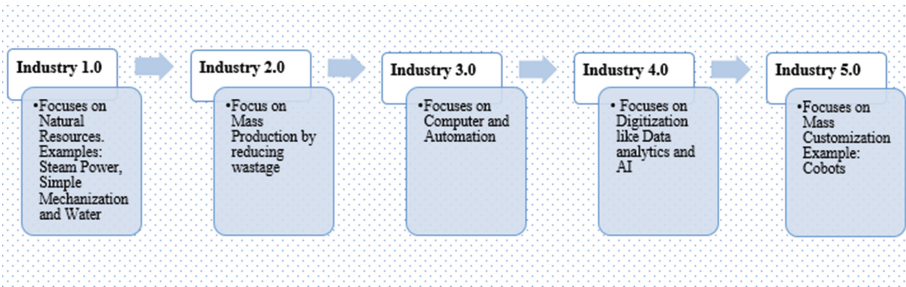
Fig. 1. Stage of industrial revolution

The 5th industrial revolution contains of advanced know-hows that link wirelessly and can be adopted to enhance computerization in Service and Manufacturing Sectors. Industry 5.0 is a novel improvement of technologies where healthier communication of humans with machinery takes place. It familiarized influential technologies for the sustainable, and safe manufacture of goods and services. The concept of Industry 5.0 is upgrading with the introduction of smart and innovative technologies (Sachsenmeier, 2016; Aslam et al., 2020; Chauhan et al., 2020). At this instant, the proper updates concerning the COVID-19 pandemic are correctly provided, with these technologies' applications. Technology innovation helps to provide the right time information to the right people during the COVID-19 pandemic.

2   Supportive Features of Industry 5.0 During Covid-19 Pandemic

The dangerous age of the COVID-19 situation is now getting cured through the assistance of several electronic-based technologies and digital (Elavarasan and Pugazhendhi, 2020; Grange et al., 2020; Rosales-Mendoza et al., 2020; Singh et al., 2020b). With the assistance of the internet network and everything, all healthcare, banking, and education devices are associated with the internet, providing suitable information concerning infection and its treatment, Financial information, and learning and training (Torous et al., 2020; Wang et al., 2020b; Keesara et al., 2020; Pan, 2020; Shen et al., 2020). It digitally screens all data and information with a mixture of intelligent and technological algorithms. Figure 2 examples the countless facilities and features given by the notion of Industry 5.0 to support out the survivors by providing them high technology-based solutions. The legalization and standardization characteristics further brand this philosophy more achievable and productive for the resolution planned.

3 Look at the Future From Industry 4.0 to Industry 5.0

Industry 4.0 emphasizes the interconnectedness of equipment and systems to achieve the best performance to progress competencies and efficiency. Industry 5.0 is hyped as attractive it is a step additional and sanitizing the communication between humans and machines.

People or Machine	Labor	Human with machines
Cyber Physical	Systems	Conigitive cyber physical
Target Group	Products and services	Individually personalised
Data Anlaytics	Supply Chain	Responsive and distributed
Linked devices	Results of networking	Greater customer experience
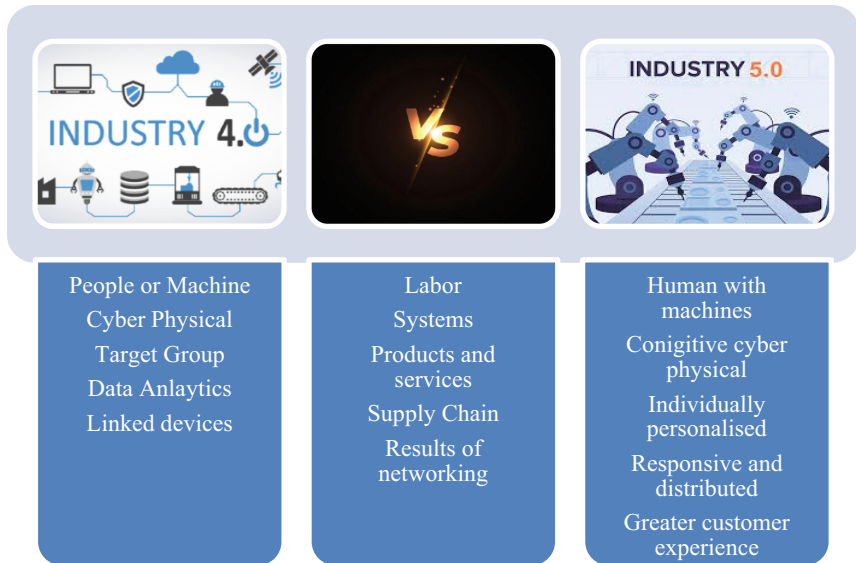
Fig. 2. Look at the future from Industry 4.0 to Industry 5.0

4 Review of Literature

The literature uncovered that this smart high-tech information licenses a high personalization level to accomplish individual specific demands of the society. These pioneering know-hows play an important part in creating the life of humans enhanced.

Sarfraz et al. (2021). The coronavirus epidemic of 2019 (COVID-19) may accelerate the progress of Industry 4.0, accompanying the fifth industrial revolution. Researchers examine several Industry 4.0 and Society 5.0 technologies, such as robots and artificial intelligence, to regulate the rate of COVID-19 transmission over the world in this article. We show how sophisticated information technologies like AI, Big Data, and the Internet of Things (IoT) may be used in healthcare. Finally, considering the impact of the COVID-19 epidemic and the technological procedures being researched and implemented, the researchers also analyzed and discussed the evolution of Industry 4.0 to Society 5.0.

Pillai et al. (2021). The unexpected emergence of the COVID-19 pandemic has had a momentous effect on the universal hospitality industry. During the COVID-19 epidemic, hotel sanitation and hygiene have become a core piece in the rehabilitation plan.

This research work looks at the special effects of previous calamities on the worldwide hospitality segment, as well as how the industry distributed with the COVID-19 pandemic. Since sanitation and cleanliness have been recognized as critical factors in previous pandemics and epidemics, this research looks into the function of technology in safeguarding hygiene and purity. As an outcome, this research focuses on the scalability of Industry 5.0 design ideas in the context of hospitality, leading to Hospitality 5.0 to progress working competence.

Haleem and Javaid (2020). The COVID-19 epidemic has a huge impact on worldwide healthcare in the present conditions, and this impact can also be seen in associated disciplines. In the sphere of healthcare, competent telehealth management and remote monitoring systems are required. During the COVID-19 pandemic catastrophe, discuss the major capabilities of medical 4.0 for hospitality and healthcare. The importance of Medical 4.0 in hospitality and healthcare during the COVID-19 pandemic is inspected, and this study concludes by recognizing 10 key applications of Medical 4.0 in hospitality and healthcare during the COVID-19 pandemic.

Javaid et al. (2020). This article identifies and investigates key Industry 5.0 technologies that may be useful in combating the COVID-19 epidemic. Diagrammatically, the helpful fundamentals of Industry 5.0 for the COVID-19 epidemic are discussed. In conclusion, in the background of Industry 5.0 technologies for the COVID-19 epidemic, we discovered and investigated important hurdles. According to the literature, this technical advancement provides for a high level of personalization to meet the patient's and doctors' specific needs. These technologies and innovations have a tremendous influence on refining the lives of doctors. Doctors can also use this technology to focus on critically ill patients and provide them with the information they need for better treatment. Furthermore, during this COVID-19 pandemic, Industry 5.0 technologies can assist clinicians and medical students with essential medical training.

5 Objectives

- To understand the role of industry 5.0 in the Health care, Education, and Banking sector during the COVID 19 pandemic.
- To identify the challenges associated with integrating industry 5.0
- To find out various supportive features and facilities of Industry 5.0 to aid out COVID-19 situation.

6 Hypothesis

H0: There is no relationship between the Standardization, Quick and highly well-organized process, implement transference, legalization, and synergy Environment and features of industry 5.0 for Covid Situation.

H1: There is a relationship between the Standardization, Quick and highly well-organized process, implement transference, legalization, and synergy Environment and features of industry 5.0 for Covid Situation.

7 Methodology

To satisfy Study objectives, the researchers collected data and information from primary and secondary sources and carefully used them for analysis. The paper followed a descriptive research approach. A scheduled interview method is employed for collecting the primary data in the form of a structured questionnaire. Sample collected from 75 respondents using convenience sampling method. Polit study was carried out with a small population group. To identify the willingness and interest of participants to fill the questionnaire. The sample was collected from four different sectors namely, Health care, Education, Banking. The secondary sources of information are publically available and easily accessible. The present Study information was collected from books, journals, articles, magazines, and websites. Measurement error is identified with the assistance of reliability (.898) and validity test, to check reliability we used the Cronbach alpha test. To check validity, face validity is used. The software used for analyzing the present study is SPSS, Amos, and Excel.

8 Health Care

The healthcare industry is about to obtain a substantial innovation push. There is a motive for the upcoming health industry is termed Healthcare 5.0. It is more focused on customized approaches rather than standardized approaches. It acknowledges that every person is different and therefore the treatment given should be different. The major change introduced in health care 5.0 is that the industry aims to establish a life-long partnership with customers focusing on their wellbeing and quality of life. It aids in delivering personalized treatment processes and therapy to the COVID-19 patients along with detailed information about patients is available. Further, healthcare sectors can use this smart technology to concentrate on critically infected patients and offer suitable fitting information concerning their effective treatment. Furthermore, Industry 5.0 advancements can aid patients, doctors, and medical students for necessary healthcare training during this COVID-19 pandemic.

Many blue-chip technology companies have already started their research and development activities focusing on digital wellness. Healthcare innovation like Apple smartwatches. In short, we will brand the health care industry 5.0 a society in which everyone can create value anytime, anywhere, with safety and in harmony with nature. In a society 5.0, patients will be open-minded from various limitations that previous manifestations up until healthcare 4.0 could not be overwhelmed, and will get the liberty to pursue varied lifestyles and values. The application of the latest technological innovations like AI, IoT, and 5G communications is the focal point of healthcare 5.0. The technologies help the physicians to understand, target, and diagnose health issues on an individual level, thus increasing the potential for personalized treatment than ever before (Fig. 3).
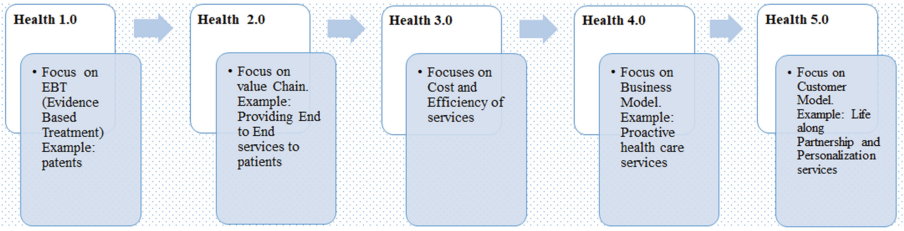
Fig. 3. Stages of healthcare sector revolution

9   Education 5.0

Education 5.0 aspires to personalization, which would improve the learning procedure and make students face and resist the unpredictability in the future with their improved skill sets that will permit them to continuously produce new services and values to help and stabilize a society as a whole. During the COVID-19 pandemic as students and teachers deliberately quarantined, there was a sweeping change towards online education thereby the requirement to bring the teaching environment and information into their workbenches.

Education 5.0 is all about converting the current education structure to outcome-based learning systems or actions. The excellence of alumni created each year continues to decline unrelatedly to numerous efforts made to deliver satisfactory training, assessment, and related care. As a result, the gap remains to continue between the real needs of education sectors and the knowledgeable human capital created and provided (Fig. 4).
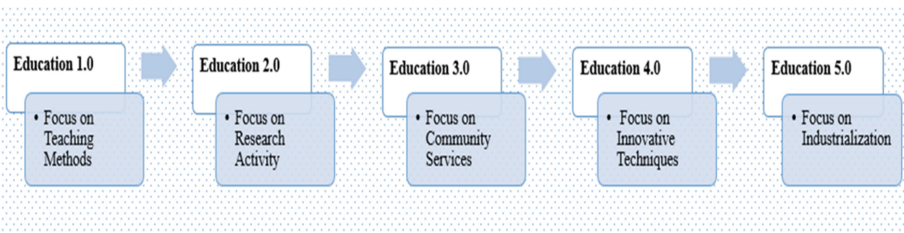
Fig. 4. Stages of education sector revolution

10   Banking 5.0

Bill Gates quoted "banking is necessary, banks are not" in 1994 and this thought is getting implemented in recent times. The fifth-generation Technologies like Cobots and sustainability define banking 5.0. Banking 5.0, in a long-term and sustainable perspective, will support economics, efficiency, ethics, and effectiveness in financial institutions (Niceloti, 2021). Many Financial Institutions have already started innovating and investing in the latest technologies, and this process is accelerated with the happening of the covid-19 pandemic.

In other ways, technology-enabled digital banking has helped to control the spread of the pandemic by allowing people and businesses to be in their remote places and do their work from buying groceries online to large business transactions of millions during the times of national lockdown. Financial institutions had to take immediate measures to maintain continuity of business and service delivery. E-wallets (GPay and Paytm), credit and debit cards, NEFT, and mobile banking made remote transactions easy during the pandemic. The banking transaction data and the behavioral data are a resource for Banking 5.0 to improve and innovate in the experience of customers, thereby achieving sustainability.
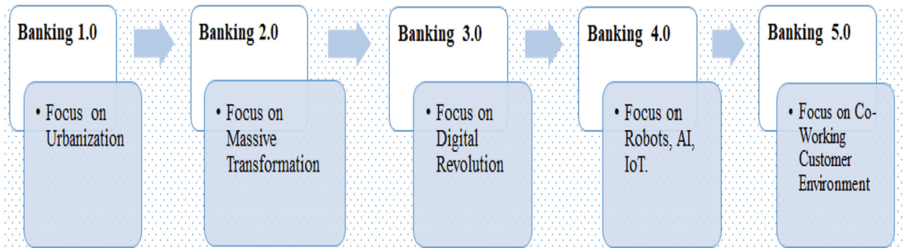
Fig. 5. Stages of banking sector revolution

11   Challenges Associated with Integrating Industry 5.0

This present study identified issues that are challenging industry 5.0 working environments such as Evolution Issues (Organization behavior, Structure, Workflow, and Ethics), Acceptances Issues (Acceptance of Robot in Collaborative Workplace – Human and Robots, Training and Education, Reshape of Work Environment for Robots), and Legal and Regulatory Issues (Individual Willingness towards Working with Robots, Psychological Problems resulting from Human-Robot Co-working Environment, Cause of Unemployment). People know industry 5.0 (Robots, AI) as a concept from movies, news, and books. Still, human-robot integrated working will be new to most of the employees in organizations. Figure 5 represents the challenges identified in adopting Industry 5.0 (Fig. 6).

Robots work with persons to improve manufacture competence, not to substitute the human workforces.

(1) A machine is witnessing an animal and grasping the workflow.
(2) Robot examining the human goal. E.g. Visual observation using RGB camera and FNISS Functional Near-Infrared Spectroscopy Sensors.
(3) Robot begins to move to choose up things from the workplace to assist the human worker.
(4) Robot choices up the things of decision for the human worker.
(5) Robots collect the object and give it to human beings.
(6) Robot distributes the object to the employee when it is needed and is agreed by the human worker.
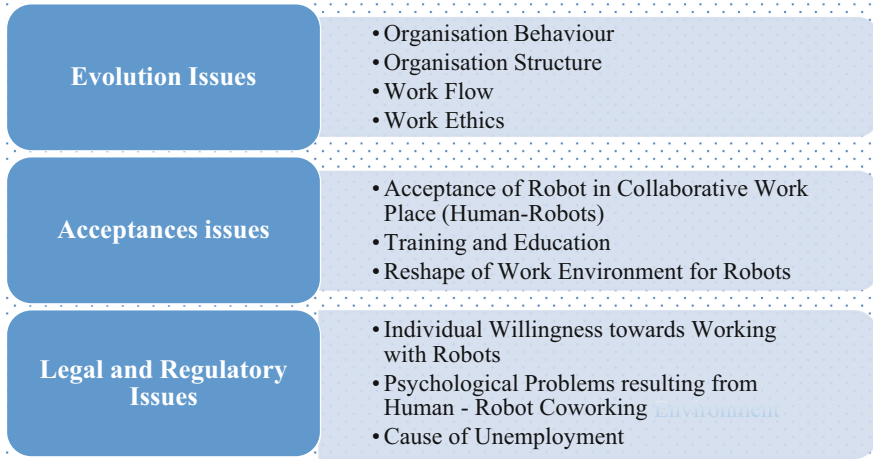
Fig. 6. Challenges of Industry 5.0

12   Supportive Features and Facilities of Industry 5.0 to Aid Out COVID-19 Situation

The below-mentioned variables are identified as supportive features and facilities of Industry 5.0 to aid out COVID-19 situation.

- Standardization
- Legalization
- Quick and highly well-organized process
- Implement Transference
- Synergy Environment

Cronbach's Alpha output values for the 25 items were .802. Data express those items have comparatively high internal consistency (Table 1).

Table 1. Reliability test result

List of variables	Number of items	Cronbach alpha value
Standardization	5	.831
Legalization	5	.781
Quick and highly well-organized process	5	.862
Implement transference	5	.901
Synergy environment	5	.753

The reliability value of all the variables is in the reference range. So we are proceeding with further analysis.

13 Kaiser – Meyer – Olkin (KMO) and Bartlett's Test – Factor Analysis

Factor analysis has been tested in this present study to name the factor constructed on their similarity value. To identify the Supportive features and facilities of Industry 5.0, the researchers have run principal component analysis to cluster the variables. It is a method used to reduce the data, based on the percentage of the variance of an item. The value of KMO is .821 and it reveals out that variance amongst all variables is fairly well conducted (Table 2).

14 Confirmatory Factor Analysis

Table 2. Confirmatory factor analysis

	Default model				
	CMIN/DF	GFI	NFI	CFI	RMSEA
Final loading	1.533	.910	.877	.952	.035

CFA's final loading output value is to conclude that collected data is fit for a model. So we can proceed with further analysis (CMIN-1.533, GFI-.910, NFI .877, CFI-.952, and RMSEA-.035) (Fig. 7).
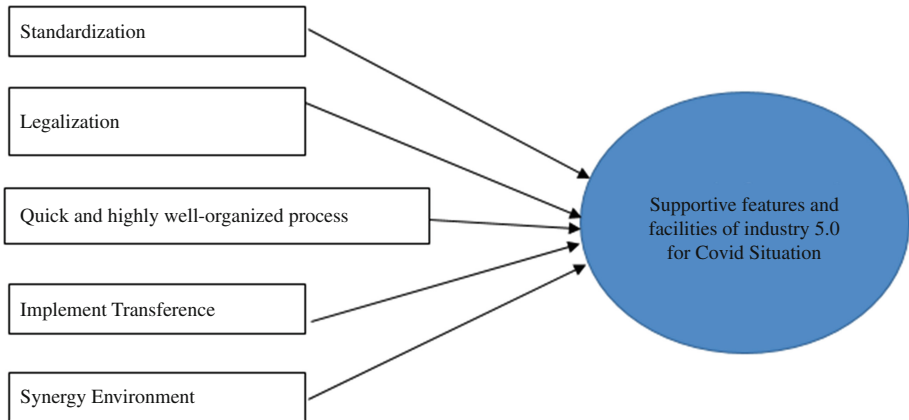
Fig. 7. SEM Model of supportive features and facilities of Industry 5.0 to aid out COVID-19 situation

The output of SEM Analysis shows that Standardization, a quick and highly well-organized process, implement transference with the P-value of 0.000 for each item has a

notable significant relationship with Supportive features and facilities of industry 5.0 for Covid Situation. But legalization and synergy Environment do not have any significant relationship with Supportive features and facilities of industry 5.0 for Covid Situation.

The Model scored a CMIN/DF value of 1.593. The values of CFI, GFI, and NFI are .984, .985, and .981. Thus, it is proved that each variable has its part and importance in developing the Model. Since each variable has its part in emphasizing Industry 5.0 during the Covid-19 Situation, the services sector needs to focus on each variable to get the maximum profit.

15 Conclusion

Industry 5.0 lasts as long as it takes for industries globally to implement it. This industrial revolution creates a better process and generates quick improvement in the health care, education, and banking sectors. Technology advancement provides solutions and a supportive environment for the COVID-19 Pandemic. The review of the literature identified that this technological advancement or innovation permits a high personalization satisfaction to achieve individual specific needs of the different customers. These technologies play an important role in creating the lives of people better during this COVID-19 Pandemic. The output of SEM Analysis shows that Standardization, Quick and highly well-organized process, implement transference has a notable significant relationship with Supportive features and facilities of industry 5.0 for Covid Situation. But legalization and synergy Environment do not have any significant relationship with Supportive features and facilities of industry 5.0 for Covid Situation. The Model scored a CMIN/DF value of 1.593. The values of CFI, GFI, and NFI are .984, .985, and .981. Thus, it is proved that each variable has its part and importance in developing the Model. Since each variable has its part in emphasizing Industry 5.0 during the Covid-19 Situation, the services sector needs to focus on each variable to get the maximum profit. Digitalization similar the internet of facility delivers new-fangled prospects in the Healthcare, Banking Education, which minimize synergy time and related risk. To study conclude technology plays a substantial role in the advancement of Service sector devices, equipment, and instrument, which progresses the whole performance of the entire Service sector.

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An Adaptive Oversampling Method
for Imbalanced Datasets Based on Mean-Shift
and SMOTE

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Abstract. Class imbalance is a challenge in different actual datasets, where the majority class contains a large number of data points, and the minority class contains a small number of data points. Class imbalance affects the learning process negatively, resulting in classification algorithms' ignorance of the minority class. To address this issue, various researchers developed different algorithms to tackle the problem; however, the majority of these algorithms are complex and generate noise. This paper provides a simple and effective oversampling technique based on the mean-shift clustering algorithm and using the synthetic minority oversampling technique (SMOTE) of selected clusters.

We conducted several experiments to compare the performance of our technique with different algorithms mentioned in the literature on three common datasets. Experimental results indicate that our technique performs better in synthesizing new samples and improves support vector machine (SVM) classification performance on imbalanced datasets.

Keywords: Imbalanced datasets · Mean-shift clustering · Synthetic Minority Oversampling Technique (SMOTE) · Support Vector Machine (SVM)

1 Introduction

The class imbalance problem is one of the most important problems in the field of data mining [1, 2]. In imbalanced datasets, the distribution of examples across known classes is biased. The distribution can range from a little skew to a severe imbalance. Class imbalance produces a big challenge for learning classifiers. Most of the machine learning algorithms used for classification are sensitive to data skewness and assume an equal number of examples for each class. This makes poor predictive performance for most of the existing learning classifiers, indeed for the minority class.

In this study, we concentrate on the data over-sampling strategy, because it is independent of the classifier used and may be utilized as a sort of pre-processing before starting working on the imbalanced dataset. We present a simple data oversampling approach that builds on existing mean-shift clustering [3–5] and SMOTE [6] oversampling approach. The contribution of this study is mainly reflected in three aspects:

First, we use a clustering algorithm without the need to determine a previous value for the number of clusters. Second, we present a framework that uses clustering and over-sampling for the minority class within selected clusters. Third, we achieve the purpose of improving the classification of imbalanced datasets. Results show that the presented method is successful with three imbalanced datasets compared to different algorithms.

The sections of the paper are organized as follows: Sect. 2 discusses related studies and earlier strategies for solving the problem of imbalanced datasets. In Sect. 3, we introduce a brief background about the main techniques used in this paper. We described our methodology in detail in Sect. 4. Section 5 analyses and discusses the datasets used as well as the experimental results. Section 6 comes to an end with a conclusion.

2   Related Work

In recent years, many researchers have conducted research to solve the problem of imbalanced datasets; we divided these methods into five categories [7]: classification algorithms level, data level, cost sensitive approaches, ensembles of classifiers, and clustering-based resampling techniques.

2.1   The Classification Algorithms Level

In these forms of approaches, the classifier classifies the minority class more accurately, by changing the weights for each class. For instance, to categorize the data using k-nearest neighbours (k-NN), a weighted Euclidean distance function was used [7]. Likewise, [8] proposes a Support Vector Machine (SVM) for the minority class using a biased kernel function to tackle the problem by enhancing minority class prediction.

2.2   The Cost-Sensitive Learning Techniques

Different cost matrices are utilized for misclassification of minority class samples than for majority class samples when learning from imbalanced datasets [9, 10]. Nevertheless, calculating the cost properly can be challenging, and it may be dependent on the features of the data sets [11].

2.3   The Data Level Methods

These methods do not change existing classifiers and are used as a pre-processing technique before a classifier is trained. The dataset can be balanced by oversampling the minority class [6], and/or under-sampling the majority class. In these types of approaches, determining the correct re-sampling ratio is usually a challenging task. Furthermore, oversampling minority classes while preserving the same distribution may be difficult, especially in real-world applications where minority and majority classes overlap frequently. Similarly, when the majority class is under-sampled, it might be challenging to maintain the new majority class distribution [7].

Under-sampling and over-sampling techniques are combined in the hybrid sampling approach. The study findings in [12] show that the classifier's performance after hybrid sampling is virtually as good as that of single sampling approaches.

2.4   Ensembles of Classifiers

In the previous ten years, they have become increasingly popular. Bagging and boosting are the two major methods. During the bagging process, different classifiers are applied to different subsets of the data. Boosting, on the other hand, trains classifiers using the entire set in each iteration while focusing more on the classification of samples that were misclassified in the previous iteration. This is accomplished by reclassifying the weights [13].

2.5   Clustering-Based Resampling

Douzas et al. [14] used the K-means clustering algorithm to get the minority cluster center-points, and then randomly choose quantitative sample points around the cluster center to use SMOTE oversampling algorithms for sample synthesis. C. Bunkh et al. [15], used the DBSCAN clustering algorithm to develop a density-based synthetic minority oversampling technique (DBMOTE) and achieves good results in combination with SMOTE.

3   Background

3.1   The Mean-Shift Clustering Algorithm

It is a powerful clustering algorithm used in unsupervised learning. It is a nonparametric clustering algorithm, which does not need a previous determination of the number of the clusters because the number of clusters will be determined by the algorithm with respect to the data. It depends on a sliding window that moves towards the dense areas of data points [3–5]. The mean-shift algorithm assigns the data points to the clusters iteratively by shifting the cluster centroid to the highest density of data points.

We can understand the process of the mean-shift clustering algorithm by following these high-level steps. First, we start with the data points assigned to a cluster of their own by creating a sliding window/cluster for each data-point; next, this algorithm will compute the centroids as the mean of the clusters' data points, in the next step, locations of the centroids will be moved to the higher density region iteratively. Finally, it will be stopped once the centroids reach the position from where they cannot move further [35]. For instance, given any group of data points x_i in n-dimensional space, as shown in Fig. 1 (left), the primary form of the mean-shift vector for any data point x in space can be expressed as in "(1)".

$$v_s = \frac{1}{K} \sum_{x_i \in S_k} (x_i - x) \qquad (1)$$

The vector, v_s, is the mean-shift vector, S_k represents the data points where the distance from the point of the dataset to x is less than the radius r of the sphere. The process of drift (shift) is to calculate the drift vector v_s, and then update the position of the center of the windows (which is here a sphere shape). Figure 1 (middle) shows the initial centroid and the mean-shift vector v_s [3–5]. The position of the centroid is

updated according to "(2)", which will move the centroid gradually in the direction of maximum data set density as in Fig. 1 (right).

$$x = x + v_s \tag{2}$$

The previous steps are repeated until the change in x is very small (i.e. the vector v_s is sufficiently small). We then know that we have found an optimal centroid with the highest density [3–5]. Mean-shift works very well on spherical-shaped data, and there is no issue of local minima as in K-means [14] and it is robust against outliers. The output of the mean-shift algorithm is not dependent on initialization.
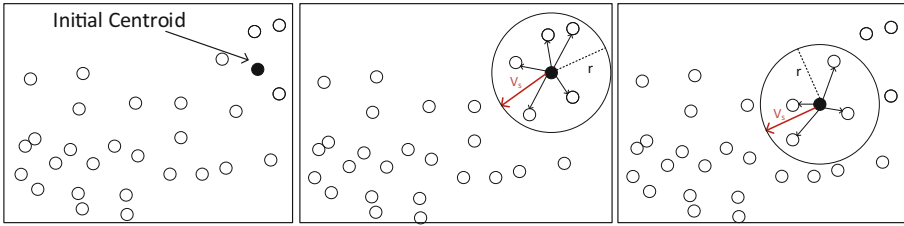
Fig. 1. Left: the initial centroid. Middle: the sliding window is a circle. Right: the centroid moved towards a more dense area of the data points.

3.2 SMOTE Oversampling Technique

SMOTE [6] is the most widely used oversampling technique in the data mining literature. It produces new minority-class instances by interpolating techniques between existing minority-class points. SMOTE works as follows: first, for a chosen minority class point x, it finds the K nearest neighbours, $x_1, x_2, ..., x_k$ in the minority class. After that, one instance x_i is arbitrarily taken from the selected K nearest neighbours. Then, an arbitrary random number r between (0, 1) is produced to multiply it by the difference between x and x_i. Finally, a new synthetic minority-class instance x_0 can be produced by "(3)" [6].

$$x_0 = x + r \times (x_i - x) \tag{3}$$

SMOTE produces a new synthetic minority-class instance in a random position of the line connected to two old minority-class instances. Figure 2 (left) gives an example to explain how to produce new samples in SMOTE.

The algorithm, however, has certain limitations when it comes to dealing with imbalance and noise. One downside is that SMOTE selects a minority sample at random to over-sample with uniform probability, allowing input areas with numerous minority samples to be oversampled further, while less populated minority areas to remain sparse [1, 2]. Another major problem of SMOTE is that it may further propagate the noisy information in the data, as illustrated in Fig. 2 (right), this occurs when oversampling a noisy minority sample, which is positioned inside the majority class samples' area, with its nearest minority neighbour. SMOTE is subject to noise generation because it does

not differentiate overlapping class regions from safe areas. Therefore, we can say that the noisy instances are extremely harmful to SMOTE [1, 2]. One of the famous variations is SMOTE-Tomek [16], it is an under-sampling method that works by decreasing the number of negative class samples. Adaptive Synthetic (ADASYN) [17] is another option. Its central idea is to utilize a weighted distribution for distinct minority class instances based on their level of difficulty in learning, with more synthetic data created for difficult-to-learn minority class examples than for simple to learn minority class examples.
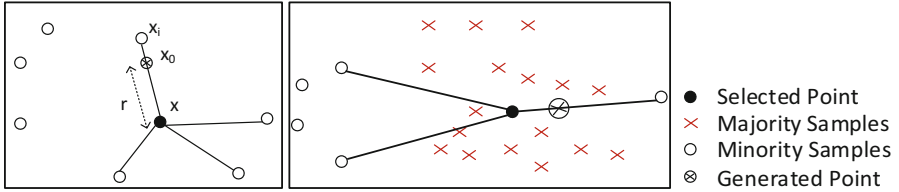
Fig. 2. Left: SMOTE linearly interpolates a randomly selected minority instance, no of nearest neighbours (k = 4). Right: the behaviour of SMOTE in the presence of noise (k = 3).

4 Methodology

To rebalance skewed datasets, the approach we propose in this study leverages the basic and widely used mean-shift clustering algorithm in combination with SMOTE oversampling. It differs from similar approaches not just because of its simplicity, but also because of the efficient way in which it distributes synthetic samples depending on cluster density.

In this method, we overcome the limitations of the SMOTE technique by dividing the dataset into different clusters using mean-shift clustering and using oversampling to balance the clusters, and then we combine them into one balanced dataset. We used the "Google Colab" platform to implement the algorithm. It's a fantastic browser-based online platform that lets us train our models on powerful processors. (https://colab.research.google.com). We used a python-based library, which is called the scikit-learn [18] library to implement the algorithm. The following pseudocode describes the steps used to implement the presented technique, which we call Mean-Shift SMOTE (MSSMOTE).

Algorithm (1) : MS − SMOTE

Input:
   Traning Dataset (TD)
Output:
   Balanced Dataset
1. $clusters \leftarrow MeanShift(TD)$
2. $balanced\_DS \leftarrow \emptyset$
3. **for each** $c \in clusters$ **do**
4. $IRi \leftarrow \dfrac{majority\ (-ve)\ samples'count}{minority(+ve)\ samples'count}$
5.   **if** $IRi > 1$ **then**
6. $BCi \leftarrow SMOTE\ Oversample\ minority\ in\ ci$
7.   **else if** $IRi \leq 1$ **then**
8. $BCi \leftarrow ci\ //do\ nothing$
9.   **end if**
10. $balanced\_DS \leftarrow balanced\_DS \cup BCi$
11. **end for**
12. **return** $Balanced\_DS$

Finally, the flowchart of the presented technique is shown in Fig. 3, a detailed description of how we used each step in the framework is described in the following subsections.

4.1 Mean-Shift Clustering

The input space is grouped into k groups in the clustering stage, which employs the mean-shift clustering method described in the background section with default settings from the scikit-learn module in Python [18]. The clustering process divides the dataset into $k - clusters$ $C = \{C1, C2, \ldots, Ck\}$ where Ci is a cluster, correspondingly, its cluster centroid is represented by ci, and the number of data samples of Ci is Ni.

4.2 Oversampling Technique Based on SMOTE

In the oversampling step, the imbalance ratio of each cluster is defined as $IRi = (Nn + 1)/(Np + 1)$, where Nn is the number of negative samples in the cluster, and Np is the number of positive samples in the cluster [19].

Comparing the IRi with 1, there are two cases: If $IRi > 1$, in this case, the cluster contains a high number of negative samples corresponding to the majority class than the positive samples which corresponds to the positive class. So in order to balance the cluster, we oversample the data using SMOTE algorithm.

If $IRi \leq 1$, the negative class of the cluster corresponds to the minority class, because it is comparatively small in quantity. Moreover, if IRi equals one, the cluster is already balanced, in these cases, we merge the cluster data points into the output dataset.

The number of synthetic samples and the number of nearest neighbors are the two factors that determine the SMOTE algorithm. The first value was set to 100% and the second parameter to two in this paper. Finally, the outputs of the above technique are combined to form a new balanced training dataset.
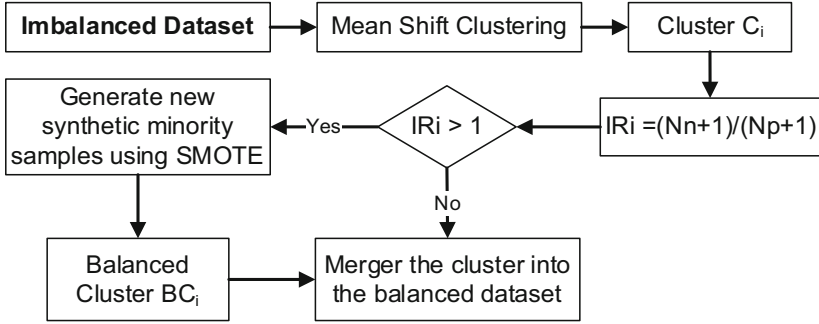
Fig. 3. The flowchart of the presented technique.

5 Experiments and Results

5.1 Datasets

To evaluate our methodology, we selected two imbalanced datasets from the UCI Machine Learning Repository [20], which are "Blood", and "Haberman". In addition to the third one "Pima" from Kaggle [21]. The information about these datasets is in Table 1.

5.2 Comparisons Setup

In order to validate the efficiency of the presented technique in this paper, it is compared with four of the classical existing models to solve imbalanced datasets: SMOTE, SVMSMOTE, ADASYN, and SMOTEBorder.

Table 1. Dataset description.

Dataset	Haberman	Pima	Blood
# features	3	8	5
# samples	306	768	748
# minority	81	268	178
# majority	225	500	570
Imbalance ratio	2.78	1.87	3.2

Support Vector Machine (SVM) [22] is selected as the base classifier and the kernel function is the radial basis function kernel. Therefore, we will evaluate the original imbalanced dataset using the SVM classifier, and then we will apply each of the selected four algorithms and our technique to the imbalanced dataset. After that, we will evaluate the resultant balanced datasets using the same SVM classifier.

5.3   Evaluation Metrics

A confusion matrix is used to evaluate the performance of machine learning algorithms, as shown in Table 2 for a problem with two classes [1, 2]. The anticipated class is in the columns, whereas the actual class is in the rows. Accuracy is used as the standard metric used for evaluation, it is defined in "(4)".

$$Accuracy = \frac{TP + TN}{TP + FP + TN + FN} \tag{4}$$

Table 2. The confusion matrix.

	Prediction as a negative class (i.e. majority class)	Prediction as a positive class (i.e. minority class)
Actual negative class (i.e. majority class)	TN	FP
Actual positive class (i.e. minority class)	FN	TP

Because it is independent of the decision criterion and prior probabilities, the area under the ROC Curve (AUC) is a valuable indicator for classifier performance. AUC comparisons may be used to determine which classifiers are dominating. The total AUC is an average comparison of models where the ROC curves overlap.

5.4   Results and Analysis

This section discusses the results obtained from experiments. The imbalanced datasets are processed by our technique, SMOTE, SVMSMOTE, ADASYN, and SMOTEBorder, and then classified by SVM. Each dataset is validated using Area under the ROC Curve (AUC), and accuracy. Each of these experiments is done with five-fold cross-validation. Each experiment is repeated several times with different random initializations. All of our test results suggest that the offered strategy consistently outperforms alternative methods. The performance difference margin between the comparing models can be adjusted. In the same context, using the provided approach to additional datasets with different distributions does not guarantee the same classification accuracy.

Table 3 shows the binary classification results of different sampling algorithms on the dataset. Our technique in this paper outperforms the other four algorithms.

In the "Haberman" dataset, our technique achieves AUC more than 2.0% better than the best of the four algorithms, which is SMOTE, more than 6.3% better than ADASYN, and of course 26.3% better than the learning algorithm model that is built without considering the problem of class imbalance. In addition to that, our technique achieves better accuracy than the others did, which means that clustering-based oversampling is quite successful in overcoming the weaknesses of SMOTE. This happens because our technique compared with the other oversampling algorithms separately can generate

Table 3. Performance of different oversampling techniques compared to MS-SMOTE.

Dataset	Algorithm	# Majority	# Minority	AUC	Accuracy
Haberman	Imbalanced	225	81	0.59753	0.72221
	SMOTE	225	225	0.84059	0.76222
	SMOTEBorder	225	225	0.82040	0.74667
	SVMSMOTE	225	225	0.83960	0.77556
	ADASYN	231	225	0.79800	0.73249
	(MS – SMOTE)	224	222	**0.86097**	**0.78477**
Pima	Imbalanced	500	268	0.64597	0.65105
	SMOTE	500	500	0.86470	0.68100
	SMOTEBorder	500	500	0.85961	0.66300
	SVMSMOTE	500	500	0.85210	0.66600
	ADASYN	500	500	0.84510	0.64271
	(MS – SMOTE)	506	500	**0.88096**	**0.69878**
Blood	Imbalanced	570	178	0.58905	**0.75936**
	SMOTE	570	570	0.75061	0.68772
	SMOTEBorder	570	570	0.72515	0.67895
	SVMSMOTE	570	570	0.78479	0.70439
	ADASYN	570	570	0.68396	0.64737
	(MS – SMOTE)	573	570	**0.79447**	0.73754

more reasonable minority samples inside each cluster, which leads to better combined oversampling for the dataset. Our technique can extract more representative minority samples; it avoids discarding too much sample information of the majority class by avoiding generating too many noise samples, which will cause the dataset to lose a lot of important information due to increasing overlapping between classes.

The same results emerged with the "Pima" dataset, our technique achieves AUC about 1.63% better than the best of the 4 algorithms, which is SMOTE, more than 2.1% better than SMOTEBorder, and 23.5% better than using the imbalanced dataset directly. The accuracy results also show that our technique achieves better accuracy than the others do, which also proves the superiority of our simple methodology.

Finally, using the "Blood" dataset, our approach obtains the greatest AUC and accuracy among the other algorithms, although none of them outperforms the imbalanced dataset in terms of accuracy. That is why some researchers, such as in [1, 2], do not rely on accurate measurement values, because measuring the performance of imbalanced data only on the basis of accuracy might be misleading. Because accuracy only considers overall class weights rather than unusual or small classes.

6 Conclusions and Future Work

One of the most pressing issues in data mining is the problem of class imbalance. The majority of research on class imbalance employs data-level approaches, such as random under-sampling and oversampling. We used the mean-shift clustering strategy to offer an oversampling technique using clustering-based clustering in this work. Our proposed approach provides the greatest classification performance in imbalanced datasets when compared to existing sampling algorithms, according to experimental results.

Most likely, the findings of this study will inspire future investigation into the outcomes, which indicate both good and negative values. We will focus more on the multi-classification job and develop a multi-classification-friendly method. We also recommend investigating the impact of an ensemble framework based on mean-shift and other resampling strategies.

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Application of Innovative Technology in Textile Retail for Enhanced Customer Service and Business Development

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Abstract. The changing consumer expectations requires an innovative and advanced technological model in the textile retail. In line with the changing trend towards customers, the customised services are highly appreciated. The use of technology is essential for the effective and efficient way of operating the retail businesses in India. In this juncture, this present study is executed to reveal the reality of business development and customer care excellence through innovative technologies. This research work is aims to establish the role of innovative technology in customer service excellence. This study follows the descriptive and analytical research method. The data has been collected directly from selected organized retail stores from South India, especially from the metropolitan cities. A sum of 45 textile retailers has been interviewed for the purpose of collecting data. Subsequently, a sum of 45 customers has been randomly selected to collect the information related to the role of technology in customer experience. The collected data has been analysed with statistical data. The data expresses descriptive statistics of various operative instruments of sample retail stores in the study area. Subsequently, the analysis on the customer side, portraits that product identification, suggestions, purchase ideas, shopping analysis, reward points details, customer queries, availability of kiosks, availability of wifi, and payment gateways facilities. On the whole, the business development and customer service enhancement of retail textile stores have been taken place through the technological adaptation.

Keywords: Technology · Innovation · Retail · Customer · Service and business

1 Introduction

Retail industry is emerged as one of the biggest sectors in the Indian economy (Kumar and Rao, 2018). Indian retail sector is estimated to grow at $2.1 trillion for the forthcoming year 2025, as compared to the present value of $550 billion (Gandhi and Chinnadorai,

2017). The retail sector is gaining a good track of growth among the other service sector industries across the world. The growth of retail initiated through rapid globalisation and industrialisation at international level. The technological advancement in the retail sector enhances the business efficiency and customer services (Tabeck, 2020). This sector in India is moving through a massive transformation with significant technological change in both online and off line store (Swathi and Rao, 2019). Textile retail industry currently practicing the impacts of digital formation through increasing customisation, connection of devices along with progressive automated production and services, and transporting processes. The changing consumer expectations requires an innovative and advanced technological model in the textile retail. In line with the changing trend towards customers, the customised services are highly appreciated. Technology is major role in service sector especially with respect to the retail business sector and that applies the modern technology to optimize the effective business operations (Nadimpalli 2017; Zhang et al., 2021). The advanced technologies bring modification in the consumer outlook by creation shopping knowledge more appropriate. The modern technology involves such as artificial intelligence kiosk, digital signage, digital interactions, digital advertisements, and automated systems (Shekar, 2020). The customised communication across all the digital modes would be a central essence of a successful business approach. The paper is organised in a structured manner starting with an introduction, followed by research objectives, methodology and followed by recent literature related to the study. The next segment is data analysis and discussion where in the collected date is being analysed and interpreted and Followed by the conclusion of the study.

2 Use of Information Technology in Retail Sector

The retail sector emerging as a biggest contributor of generating employment and income of the developing nation particularly in India during the past few decades. The use of technology is much helpful in the retail companies to enable both operational processes and customer services.

3 Objectives

To identify the significance of technology in the retail business.

To examine the role of technological adoption and efficiency of retail business process.

To analyse customer service enhancement through innovative technologies in textile retail sector for business development.

4 Research Methodology

This research work is aims to establish the role of innovative technology in customer service excellence. This study follows the descriptive and analytical research method. The data has been collected directly from selected organized retail stores from South India, especially from the metropolitan cities. A sum of 45 textile retailers has been

interviewed for the purpose of collecting data. Subsequently, a sum of 45 customers has been randomly selected to collect the information related to the role of technology in customer experience. The collected data has been analysed with statistical data.

5   Literature Analysis

The level of competition influences to the textile and apparel industry to adopt the innovative technology in many countries (Choi et al., 2005). During the last two decades, the growth of textile retail was phenomenal through e-commerce by applying innovative technology (Panigrahi and Joshi, 2016). Due to heavy competition and the arrival new firms in the retail industry, the Indian retail sector becomes one of the dynamic industries (Kumar, 2021). Obviously, the standard marketing activities are required to meet the competition. The modern technology plays a key factor in determining the volume of business in textile retail stores (Soumady and Rajagobalan, 2014).

This sector has become properly organised in the present days. Sector adopts many advanced technologies to enhance the customer excellence (Balaji, 2014). Customer relationship management module is a process of business instrument that allows to manage the potential clients (Ramesh and Rao, 2019).

The process of CRM applies the information and technology to collect data, analyse and enhance the customer satisfaction for the future expectations (Kotler et al., 2003). The CRM initiatives needs a long-term vision and each employee should understand the significance of customer satisfaction and importance of technology in customer satisfaction (Kotorov, 2003; Feiz et al., 2011). The use of technology in retail sector, the CRM has altered the method of companies could handle customer requirements, advertisement and used to promote the sales. (Messner, 2005).

The CRM initiatives mainly about three important variables such as people, processing, and technology. Among these, the technology plays an important place in the process of customer experience (Trivedi, 2015). Because of the greater degree of the consumer response, the retail industry has begun to expand to a mass customization. Such kind of mass customization of product and services requires a high structure of technology and innovation to fulfil the gap (Bae, 2005; Shaikh et al., 2022). Various unique digital technologies have been adopted by the retailers to enhance the customer experiences such as product suggestion, personalized shopping experience, easy of virtual shopping and interactive customer engagement (Colombi et al., 2019).

6   Data Analysis and Discussion

Operational Applications of Technology

Essence of operational efficiency has been done through the effective use of technology in various business touch points such as inventory control, stock replenishment, billing and delivery processes, logistic, data storage and analysis, demand forecasting, digital marketing, accounts software and payment, supply chain management, store management, identification of customer need, staff management-attendance, movement and sales target analysis, alert systems for safety and inventory security, and Closed Circuit Television (CCTV) (Table 1).

Table 1. Descriptive statistics

	N	Minimum	Maximum	Mean	Std. deviation
Use of technology	45	1	4	1.60	.915
Stock replenishment	45	1	5	2.02	1.288
Billing and delivery	45	1	5	1.80	1.217
Logistic	45	1	5	1.73	1.116
Data management	45	1	5	1.73	1.116
Forecasting	45	1	5	1.49	1.079
Marketing	45	1	4	1.49	.869
Payments	45	1	4	1.44	.725
Store management	45	1	5	2.33	1.108
Customer identification	45	1	5	3.42	1.196
Staff management	45	1	5	2.38	1.284
Sales analysis	45	1	4	1.53	.842
Inventory security	45	1	4	1.31	.701
Valid N (list wise)	45				

The use of technology is essential for the effective and efficient way of operating the retail businesses in India. In this juncture, this present study is executed to reveal the reality of business development and customer care excellence through innovative technologies. The above table expresses descriptive statistics of various operative instruments of sample retail stores in the study area.

Table 2 emphasizes the test of significance on the variables analysed. The calculated F – value for the stock replenishment is 17.026 with 0.000 significance level and for billing and delivery value is 1.948 at 0.137 significance level. Based on the results of the analysed data, except billing and delivery process and customer identification, all other variables such as logistic, data management, forecasting, marketing, payments, store management, sales analysis, and inventory security are statistically significant at 0.00 level.

Customer Service

Since, the customer service excellence is the major determinator of business success and brand equity. The customer could able to attain the better services and satisfaction level on easy identification of products, product suggestions, purchase management, shopping analysis, reward points, customer service, kiosks, Wifi hotspot facilities, and online payment gateways (Table 4).

Table 2. Tests of between-subjects effects

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	Stock replenishment	40.483[a]	3	13.494	17.026	.000
	Billing and delivery	8.133[b]	3	2.711	1.948	.137
	Logistic	23.819[c]	3	7.940	10.507	.000
	Data management	25.200[d]	3	8.400	11.635	.000
	Forecasting	19.644[e]	3	6.548	8.496	.000
	Marketing	25.287[f]	3	8.429	43.432	.000
	Payments	11.987[g]	3	3.996	14.728	.000
	Store management	19.921[h]	3	6.640	7.989	.000
	Customer identification	1.199[i]	3	.400	.265	.850
	Staff management	19.621[j]	3	6.540	5.064	.004
	Sales analysis	16.205[k]	3	5.402	14.769	.000
	Inventory security	10.144[l]	3	3.381	12.056	.000
Intercept	Stock replenishment	193.333	1	193.333	243.932	.000
	Billing and delivery	90.496	1	90.496	65.018	.000
	Logistic	132.142	1	132.142	174.875	.000
	Data management	130.854	1	130.854	181.250	.000
	Forecasting	93.513	1	93.513	121.330	.000
	Marketing	107.000	1	107.000	551.328	.000
	Payments	82.558	1	82.558	304.292	.000
	Store management	200.027	1	200.027	240.652	.000
	Customer identification	280.144	1	280.144	185.921	.000
	Staff management	204.579	1	204.579	158.388	.000

(*continued*)

Table 2. (*continued*)

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.
	Sales analysis	97.574	1	97.574	266.788	.000
	Inventory security	68.146	1	68.146	242.954	.000
Use of technology	Stock replenishment	40.483	3	13.494	17.026	.000
	Billing and delivery	8.133	3	2.711	1.948	.137
	Logistic	23.819	3	7.940	10.507	.000
	Data management	25.200	3	8.400	11.635	.000
	Forecasting	19.644	3	6.548	8.496	.000
	Marketing	25.287	3	8.429	43.432	.000
	Payments	11.987	3	3.996	14.728	.000
	Store management	19.921	3	6.640	7.989	.000
	Customer identification	1.199	3	.400	.265	.850
	Staff management	19.621	3	6.540	5.064	.004
	Sales analysis	16.205	3	5.402	14.769	.000
	Inventory security	10.144	3	3.381	12.056	.000
Error	Stock replenishment	32.495	41	.793		
	Billing and delivery	57.067	41	1.392		
	Logistic	30.981	41	.756		
	Data management	29.600	41	.722		
	Forecasting	31.600	41	.771		
	Marketing	7.957	41	.194		
	Payments	11.124	41	.271		
	Store management	34.079	41	.831		

Table 2. (*continued*)

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.
	Customer identification	61.779	41	1.507		
	Staff management	52.957	41	1.292		
	Sales analysis	14.995	41	.366		
	Inventory security	11.500	41	.280		
Total	Stock replenishment	257.000	45			
	Billing and delivery	211.000	45			
	Logistic	190.000	45			
	Data management	190.000	45			
	Forecasting	151.000	45			
	Marketing	133.000	45			
	Payments	117.000	45			
	Store management	299.000	45			
	Customer identification	590.000	45			
	Staff management	327.000	45			
	Sales analysis	137.000	45			
	Inventory security	99.000	45			
Corrected total	Stock replenishment	72.978	44			
	Billing and delivery	65.200	44			
	Logistic	54.800	44			
	Data management	54.800	44			
	Forecasting	51.244	44			
	Marketing	33.244	44			

Table 2. (*continued*)

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.
	Payments	23.111	44			
	Store management	54.000	44			
	Customer identification	62.978	44			
	Staff management	72.578	44			
	Sales analysis	31.200	44			
	Inventory security	21.644	44			

[a] R Squared = .555 (Adjusted R Squared = .522).
[b] R Squared = .125 (Adjusted R Squared = .061).
[c] R Squared = .435 (Adjusted R Squared = .393).
[d] R Squared = .460 (Adjusted R Squared = .420).
[e] R Squared = .383 (Adjusted R Squared = .338).
[f] R Squared = .761 (Adjusted R Squared = .743).
[g] R Squared = .519 (Adjusted R Squared = .483).
[h] R Squared = .369 (Adjusted R Squared = .323).
[i] R Squared = .019 (Adjusted R Squared = -.053).
[j] R Squared = .270 (Adjusted R Squared = .217).
[k] R Squared = .519 (Adjusted R Squared = .484).
[l] R Squared = .469 (Adjusted R Squared = .430).

Table 3. Multivariate tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's trace	.987	188.327[b]	12.000	30.000	.000
	Wilks' lambda	.013	188.327[b]	12.000	30.000	.000
	Hotelling's trace	75.331	188.327[b]	12.000	30.000	.000
	Roy's largest root	75.331	188.327[b]	12.000	30.000	.000
Use of technology	Pillai's trace	1.657	3.290	36.000	96.000	.000
	Wilks' lambda	.027	5.920	36.000	89.366	.000
	Hotelling's trace	14.391	11.460	36.000	86.000	.000
	Roy's largest root	13.076	34.871[c]	12.000	32.000	.000

[a] Design: Intercept + Use of Technology.
[b] Exact statistic.
[c] The statistic is an upper bound on F that yields a lower bound on the significance level.

Multivariate analysis has been made to examine the significance level of various statistical models in the Table 3. With the application of technology in business reveals that statically significant at 0.000 level.

Table 4. Multivariate tests[a]

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's trace	.985	239.410[b]	9.000	33.000	.000
	Wilks' lambda	.015	239.410[b]	9.000	33.000	.000
	Hotelling's trace	65.294	239.410[b]	9.000	33.000	.000
	Roy's largest root	65.294	239.410[b]	9.000	33.000	.000
Use of technology	Pillai's trace	1.498	3.880	27.000	105.000	.000
	Wilks' lambda	.040	7.194	27.000	97.019	.000
	Hotelling's trace	11.897	13.954	27.000	95.000	.000
	Roy's largest root	10.957	42.610[c]	9.000	35.000	.000

[a]Design: Intercept + Use of Technology.
[b]Exact statistic.
[c]The statistic is an upper bound on F that yields a lower bound on the significance level.

Subsequently, the analysis on the customer side, portraits that product identification, suggestions, purchase ideas, shopping analysis, reward points details, customer queries, availability of kiosks, availability of wifi, and payment gateways facilities (Table 5).

Table 5. Tests of between-subjects effects

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	Product identification	27.316[a]	3	9.105	17.781	.000
	Product suggestions	40.483[b]	3	13.494	17.026	.000
	Purchase ideas	8.937[c]	3	2.979	5.226	.004
	Shopping analysis	23.819[d]	3	7.940	10.507	.000
	Reward point	24.493[e]	3	8.164	10.234	.000
	Customer queries	19.644[f]	3	6.548	8.496	.000
	Kiosks	25.287[g]	3	8.429	43.432	.000
	Wifi	11.987[h]	3	3.996	14.728	.000
	Payment gateways	7.619[i]	3	2.540	10.031	.000

(*continued*)

Table 5. (*continued*)

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.
Intercept	Product identification	128.806	1	128.806	251.536	.000
	Product suggestions	193.333	1	193.333	243.932	.000
	Purchase ideas	82.202	1	82.202	144.190	.000
	Shopping analysis	132.142	1	132.142	174.875	.000
	Reward point	139.670	1	139.670	175.083	.000
	Customer queries	93.513	1	93.513	121.330	.000
	Kiosks	107.000	1	107.000	551.328	.000
	Wifi	82.558	1	82.558	304.292	.000
	Payment gateways	128.679	1	128.679	508.222	.000
Use of technology	Product identification	27.316	3	9.105	17.781	.000
	Product suggestions	40.483	3	13.494	17.026	.000
	Purchase ideas	8.937	3	2.979	5.226	.004
	Shopping analysis	23.819	3	7.940	10.507	.000
	Reward point	24.493	3	8.164	10.234	.000
	Customer queries	19.644	3	6.548	8.496	.000
	Kiosks	25.287	3	8.429	43.432	.000
	Wifi	11.987	3	3.996	14.728	.000
	Payment gateways	7.619	3	2.540	10.031	.000
Error	Product identification	20.995	41	.512		

(*continued*)

Table 5. (*continued*)

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.
	Product suggestions	32.495	41	.793		
	Purchase ideas	23.374	41	.570		
	Shopping analysis	30.981	41	.756		
	Reward point	32.707	41	.798		
	Customer queries	31.600	41	.771		
	Kiosks	7.957	41	.194		
	Wifi	11.124	41	.271		
	Payment gateways	10.381	41	.253		
Total	Product identification	170.000	45			
	Product suggestions	257.000	45			
	Purchase ideas	154.000	45			
	Shopping analysis	190.000	45			
	Reward point	203.000	45			
	Customer queries	151.000	45			
	Kiosks	133.000	45			
	Wifi	117.000	45			

Table 5. (*continued*)

Source	Dependent variable	Type III sum of squares	df	Mean square	F	Sig.
	Payment gateways	198.000	45			
Corrected total	Product identification	48.311	44			
	Product suggestions	72.978	44			
	Purchase ideas	32.311	44			
	Shopping analysis	54.800	44			
	Reward point	57.200	44			
	Customer queries	51.244	44			
	Kiosks	33.244	44			
	Wifi	23.111	44			
	Payment Gateways	18.000	44			

[a]R Squared = .565 (Adjusted R Squared = .534).
[b]R Squared = .555 (Adjusted R Squared = .522).
[c]R Squared = .277 (Adjusted R Squared = .224).
[d]R Squared = .435 (Adjusted R Squared = .393).
[e]R Squared = .428 (Adjusted R Squared = .386).
[f]R Squared = .383 (Adjusted R Squared = .338).
[g]R Squared = .761 (Adjusted R Squared = .743).
[h]R Squared = .519 (Adjusted R Squared = .483).
[i]R Squared = .423 (Adjusted R Squared = .381).

7 Conclusion

The growth of retail initiated through rapid globalisation and industrialisation at international level. The technological advancement in the retail sector enhances the business efficiency and customer services (Tabeck, 2020). This sector in India is moving through a massive transformation with significant technological change in both online and off line store (Swathi and Rao, 2019). Textile retail industry currently practicing the impacts of digital formation through increasing customisation, connection of devices along with progressive automated production and services, and transporting processes. The changing consumer expectations requires an innovative and advanced technological model in the textile retail. In line with the changing trend towards customers, the customised services are highly appreciated. The use of technology is essential for the effective and efficient way of operating the retail businesses in India. In this juncture, this present study is executed to reveal the reality of business development and customer care excellence through innovative technologies. The data expresses descriptive statistics of various operative instruments of sample retail stores in the study area. Subsequently, the analysis on the customer side, portraits that product identification, suggestions, purchase ideas, shopping analysis, reward points details, customer queries, availability of kiosks, availability of wifi, and payment gateways facilities. On the whole, the business development and customer service enhancement of retail textile stores have been taken place through the technological adaptation.

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Factors Affecting the Adoption of Remote Auditing During the Times of COVID-19: An Integrated Perspective of Diffusion of Innovations Model and the Technology Acceptance Model

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Abstract. During the COVID-19 pandemic period, external auditors have used technological solutions to complete their job tasks due to the lockdown ramifications. Therefore, many external auditors have opted to work remotely. Nevertheless, the abrupt adoption of remote auditing received mixed feedback from those auditors due to different determining factors. Therefore, this article intends to examine these factors in the Jordanian external auditor context. To do so, a model combining the critical factors from the diffusion of innovation model and technology acceptance model has been utilized. The model was tested using data collected from 109 external auditors from public accounting firms working in Jordan. The results expand our understanding of remote auditing adoption decisions, providing empirical support that perceived usefulness, perceived ease of use, and trialability are the important determinants to adopt remote auditing systems. Based on these results, further discussion, implications, and recommendations have been provided.

Keywords: Technology acceptance model (TAM) · Diffusion of innovations (DOI) · Structural equation modeling (SEM) · Remote auditing systems

1 Introduction

Early in March 2020, the COVID-19 outbreak has been declared as a global pandemic by the World Health Organization. While the world still grappling with it, the highly contagious coronavirus has had devastating consequences on human and economics [1, 2]. Crucially, its' rapid spread has forced people to change their lifestyle by changing their

daily habits, and more importantly, the new measures were taken around the world, e.g., lockdowns, travel bans, and social distancing, have forced people to work remotely from their homes [3]. In this sense, the adoption of new technologies has become unprecedented [4], most especially the communication software, e.g., Microsoft Teams and Zoom, since people everywhere were abruptly asked to deal with their assigned tasks remotely, and hence reduce their exposure to risks (Castka, Searcy, & Fischer, 5; 1). Unfortunately, and for the present case, the new public health orders which have been enforced during the coronavirus crisis have affected the core of the auditing profession [6, 7]. The on-site visits via which the traditional approach to the audit function is implemented have been greatly curtailed [5]. While it is still vague under what circumstances, and when the on-site visits will be resumed in full, the covid-19 pandemic has thus accelerated the adoption of technology in auditing [6, 8], which may further likely establish for the 'new normal' practices in the aftermath of the crisis.

Coping with the off-site auditing approach necessities the integration of a high-quality model of remote auditing using an outstanding and robust framework and methodology to ensure auditors' ability of material misstatement detection [5, 9]. A high-quality remote auditing model is desirable for investors and stakeholders who require good quality audit and financial information given the high uncertainty levels concerning the economy overall, future earnings, and other outputs [7, 8]. Contrary, failure to ensure a high standard audit procedure may entail significant costs such as increasing the cost of equity capital on the market due to losing shareholder confidence in the earnings reported [10]. The loss of investor confidence increases the potential that earnings being volatile and present more declining records [11, 12], which increase the likelihood that firms go into bankruptcy or began a form of earnings manipulations during such economic turbulence period [13].

In addition, an active and smooth adoption of technology in handling remote auditing functions is likely to present a vital element of audit quality [5]. Due to its' sudden adoption, however, remote auditing still encounters many unprecedented practical challenges that are associated with a variety of psychological, training, and technical obstacles [3, 10]. In addition, technology adoption in audits may put increased pressure on auditors in regards to auditing timeline, difficulties in obtaining audit evidence, and possibilities to give uncertain judgments in areas such as going concern [8]. Although these challenges are in place, auditors need to undertake their auditing functions and respond to these challenges; thus, to reach an optimal model of remote auditing, early preparation can be considered important to minimize the effect of these challenges and an action plan is needed. In addition, given the vitality of auditing in ensuring the quality of financial reports, which in turn can further corroborate the decision-making of market participators and the integrity of financial markets [6, 10, 13, 14], it is within the scope of this study to investigate the determinants of remote auditing adoption during the times of COVID-19 which is the key enabler to facilitate a sufficient preparation that can aid a more effective remote auditing.

The primary research question examined in this study is: what are the determinants of remote auditing adoption in Jordan? For the purposes of this study, the analysis was based on an integrated perspective including two theories namely, diffusion of innovations model and the technology acceptance model. Answering the aforementioned

research question is particularly important for several reasons. First, understanding the organizational responses to the pandemic (which can be considered exogenous shocks such as natural disasters) can provide a good idea about organizational resilience [15], audit quality, and the future of business and operational practices [5]. Second, the study outcomes are likely to clarify the shortcomings associated with technology adoption in implementing remote auditing, which ultimately have the potential to reduce the number of unworthy companies receiving certification and erode the strength of the certification. Third, the scarcity of relevant research makes it important to examine what determines better remote auditing adoption in a unique empirical setting such as the ongoing COVID-19 pandemic. The remainder of this paper is organized as follows. The next section reviews the literature on remote auditing systems adoption and presents the research theoretical background. Section three illustrates the research method. Section four shows the results of this research. Section five discusses these results. The final section concludes the paper.

2 Literature Review

2.1 Remote Auditing

Remote auditing -also termed digital auditing and/or E-auditing- is the type of audit that entitles off-site access of a given company for compliance through the use of teleconferencing, phone calls, and emails [3]. Based on a broader perspective, remote auditing is defined by the International Accreditation Forum (16, p. 6) as "the facilitation of assessment of a conformity assessment body from a location other than that being physically present". Furthermore, it is defined by Castka, Searcy, and Mohr (17, p. 5) as "employing technologies for the purposes of the audit data collection, recording & sharing, and analysis". The adoption of remote audit can involve technologies in two levels namely, basic and advanced levels [5]. Audio-visual equipment, videoconferencing, or drones are the main types of technologies that can be used at the basic level. On the other hand, more advanced levels of technologies can include Big Data and artificial intelligence in order to enhance the typical procedure of the traditional approach of audit. Consequently, there is a broad agreement that this approach of auditing can be further enhanced by the adoption of Information and Communication Technology (ICT) for "gathering, storing, retrieving, processing, analyzing and transmitting information" (International Accreditation Forum 18, p. 5).

With the possibility for audits to be held remotely, there is a growing stream of literature that investigates the technology-enhanced auditing (TEA) [5], and how the outbreak of the COVID-19 has affected the auditing profession [6, 8], and its quality [7, 13]. Overall, TEA is found to have a significant role in enhancing the traditional approach of auditing by mainly, enhancing the veracity and timeliness of its procedure [17]. In addition, based on a qualitative study, Castka, Searcy, and Fischer [5] have inductively analyzed how the VSS changed their certification services during the times of COVID-19. In particular, their analysis focuses on the role of technologies in the responses of the VSS to the ongoing pandemic. Their findings highlight the significant adoption of remote auditing and information communications technology (ICT) during the times of COVID-19.

On the other hand, in documenting what has been eventuated in New Zealand auditing, Hay et al. [6] reported a non-substantial impact of the COVID-19 on auditors' opinions. However, subsequent major reforms are still likely to follow the crisis. Accounting and auditing bodies and professional associations are held accountable for these reforms as they recently promulgating additional guidelines concerning the auditing profession [8]. In terms of audit quality, Albitar et al., [13] conduct a desk study to conceptually explore the possible impact of the ongoing pandemic on the audit quality aspects. These encompass audit fees, going concern assessment, auditor human capital, audit procedures, and audit personnel salaries. Because of the pandemic, and theoretically, they expect the audit quality to be negatively affected by a downward trend of audit fees, challenges in areas concerning the going concern assessment, insufficient reliability of audit evidence, significant possibilities of personnel loss, mainly due to illness or quarantine, and decreases in the salaries of auditors. Similarly, Saleem [7] concludes that the uncertainty associated with the current COVID-19 is likely to limit auditors 'ability to provide an independent view of the companies' financial position, which ultimately increases the chances of giving a wrong opinion of audits.

2.2 Technology Adoption Models

Technology adoption has witnessed noticeable consideration from information technology researchers [19–21]. The empirical studies on technology adoption refer to a wide range of factors that might influence the technology adoption process [22–24]. Understanding these factors might help practitioners and users in enhancing the success of the adoption process [25, 26]. Information technology researchers offer several conceptual and theoretical models that adequately describe, accurately anticipate, and effectively control the factors that might affect the technology adoption process. Among these several theoretical models, Rogers [27] offers the diffusion of innovations model, and Davis [22] introduced the technology acceptance model (TAM). These two models will be integrated and used in this paper to understand the factors that affect the remote auditing adoption process during the period of the Covid-19 pandemic.

Davis [22] introduces the TAM model to explain and expect the technology use and adoption behavior. The TAM model aims to "provide an explanation of the determinants of computer acceptance that is general, capable of explaining user behavior across a broad range of end-user computing technologies and user populations, while at the same time being both parsimonious and theoretically justified" (Davis et al., 23, p. 985). TAM model mainly predicts two determinant factors of the technology adoption behavior; these factors are the perceived ease of use and the perceived usefulness. The perceived ease of use is defined by Davis (22, p. 320) as "the degree to which a person believes that using a particular system would be free of effort". While perceived usefulness is defined by Davis (22, p. 320) as "the degree to which a person believes that using a particular system would enhance his or her job performance".

Rogers [27] introduces the DOI model that explains and expects why new technologies diffuse through various settings. The DOI model perceives the diffusion of the innovation and technologies as a method in which these innovations and technologies are communicated using specific channels among the users who perceive it as distinct [24, 28, 29]. DOI model concentrates on the technology users' readiness to try new

technologies and the compatibility of the new technologies with the firms' facilities. According to García-Avilés [30], these factors are deemed as principal factors in determining the technology adoption process. Compatibility is the degree to which a technology encounters the user's values, practices, and needs [24, 28–30]. While trialability is defined by Mohamad Hsbollah (24, p. 56) as "the degree to which an innovation may be experimented with on a limited basis by its potential adopters."

As shown in Fig. 1, his study investigates the TAM and DOI models in a professional context by investigating the factors affecting auditors' adoption of remote auditing during the Covid-19 pandemic period. The TAM and DOI models have been chosen in this study over other IT adoption models due to some reasons including, first, TAM and DOI model is parsimonious, and IT-dedicated model [31–33]. Second, the TAM and DOI models are associated with validated psychometric measurements [30, 32, 34] Lastly, the TAM and DOI models are associated with satisfactory empirical evidence for their explanatory potentials [33–36].
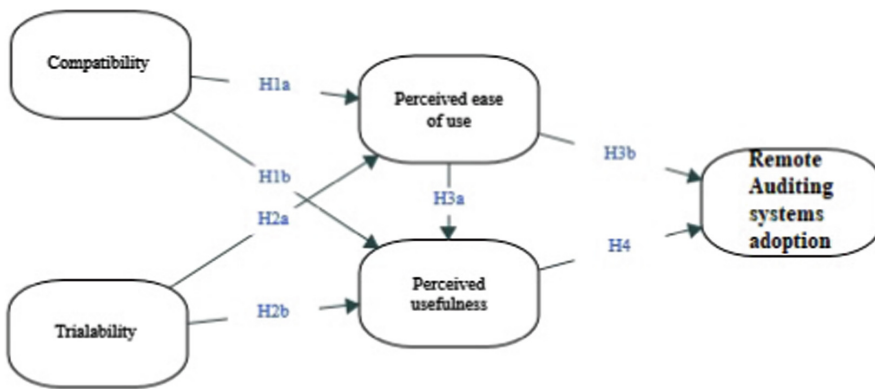
Fig. 1. Research model

2.3 Hypotheses Development

According to Davis [22], perceived ease of use and perceived usefulness are recognized as the main factors to affect users' decision to adopt new technology. Moreover, Davis [22] indicates that perceived ease of use and perceived usefulness are influenced by external factors. In this study, compatibility and trialability of technology are anticipated to be the external factors that influence the perceived ease of use and the perceived usefulness. Most of the research that used the DOI model to investigate the factors that affect a technology adoption show that the users' rating of the perceived ease of use and usefulness are enhanced accordingly with the increase of compatibility level [24, 34, 37, 38]. Al-Rahmi, Yahaya, Aldraiweesh, et al. [34] found that the constructs of DOI models including compatibility and trialability have a positive impact on the perceived ease of use and the perceived usefulness. This result is supported by Yuen, Cai, Qi, and Wang [39], who indicate that the perceived ease of use and the perceived usefulness are

influenced by the compatibility and trialability of a technology. Therefore, the following hypotheses have been developed:

Hypothesis 1a: Compatibility positively impacts the perceived ease of use.
Hypothesis 1b: Compatibility positively impacts the perceived usefulness.
Hypothesis 2a: Trialability positively impacts the perceived ease of use.
Hypothesis 2b: Trialability positively impacts the perceived usefulness.

Most of the studies on technology acceptance indicate the positive relationships between the perceived ease of use and the perceived usefulness [33, 36, 40, 41, 43]. Daragmeh et al. [40] found that perceived ease of use has a positive impact on consumers' perceived usefulness of e-wallets during the COVID-19 pandemic. Similarly, Ashrafi, Zareravasan, Rabiee Savoji, and Amani [44] found that perceived ease of use has a positive effect on the perceived usefulness of an online learning system. Furthermore, empirical studies found that both perceived ease of use and the perceived usefulness positively impact the technology adoption decision [22, 23, 31, 33, 34, 36, 40, 41, 44, 45]. For instance, Munoz-Leiva, Climent-Climent, and Liébana-Cabanillas [46] indicate that the constructs of the TAM model positively impact the customers' decision to adopt mobile banking applications. Moreover, Pedrosa, Costa, and Aparicio [47] indicate that the perceived ease of use and the perceived usefulness determine the adoption decision of computer-assisted auditing tools (CAATs). Therefore, the following hypotheses have been developed:

Hypothesis 3a: Perceived ease positively impacts the perceived usefulness.
Hypothesis 3b: Perceived ease of use positively impacts remote auditing adoption.
Hypothesis 4: Perceived usefulness positively impacts remote auditing adoption.

3   Methodology

This study's conceptual model encapsulates five variables, with each gauged using several items. The items were adopted from past literature, from which the content validity has already been established. Nevertheless, considering the items were formulated in different contexts, the perception of users and experts was obtained in this study to enhance the items clarity and understanding. Every item was measured using a 7-point Likert scale that ranged from strongly disagree (1) to strongly agree (7). Items measuring perceived ease of use and perceived usefulness were adopted from Cheng, Lam, and Yeung [48], while those measuring compatibility and trialability were adopted from the studies of Taylor and Todd [49] and Lee et. al. [42], and finally, remote auditing items were adopted from Alhasan et al.'s [50] and Ndubisi and Sinti's [51] studies.

3.1   Data Collection

This exploratory study requested the involvement of participants, who were auditors in the Jordanian accounting firms in the public sector. Accordingly, the study obtained random sampling of 109 auditors from the listed audit firms in the Jordanian Association

of Certified Public Accountants (JACPA). The auditors were categorized into 67 audit staff, 22 audit seniors, 12 audit managers, and 8 firm partners working in firms ranging from small, medium to Big 4 firms.

Table 1 tabulates the demographic profile of the respondents, within which it is evident that the majority of the respondents (85.3%) were male and the remaining were females (14.7%). Additionally, the majority of the respondents comprised of staff auditors (61.5%), which refer to field auditors that conduct technology-enabled auditing processes. The majority of them work for small-sized audit firms (80.7%), and had 3 years or more of experience (76.1%), indicating that they had the required knowledge to respond to the questionnaire items.

Table 1. Demographic profile

Respondent Profiles		Frequency	Percentage
Gender	Male	93	85.3%
	Female	16	14.7%
Size of firm	Small	88	80.7%
	Medium	15	13.8%
	Big	6	5.5%
Job Position	Staff	67	61.5%
	Senior	22	20.2%
	Manager	12	11%
	Partner	8	7.3%
Experience	Less than 3 years	15	13.8%
	From 3 to 6 years	83	76.1%
	From 6 to 9 years	9	8.3%
	More than 9 years	2	1.8%

3.2   Common Method Bias (CMB)

By now, it is clear that the study is based on self-reported data and for this reason, common method bias (CMB) had to be tested, and in order to minimize the CMB possibility, the respondents were informed that their participation will be kept confidential and anonymous. The study carried out a post-hoc Harman's Single Factor Test, from which the result showed that the first factor accounted for 29.2% of the variance, which did not exceed the 50% cut-off value. According to Kock [52], CMB in the SEM domain is used in case PLS-SEM is employed, and that the use of collinearity for assessing common method, in this case, is feasible. CMB was thus determined through variance inflation factors (VIF) engendered by a complete collinearity test as recommended by Kock [52]. The VIF values all exceeded 3.3, which reflects that the model is devoid from the issue. All VIFs of the constructs indicated no CMB contamination and thus, was not an issue.

3.3 Data Analysis

SmartPLS 3 was developed by Ringle et al. [53] to carry out PLS-SEM rather than Co-variance-based SEM (CB-SEM), and in the present study, the former was employed due to many advantages. First, PLS-SEM is suitable for exploratory studies and target prediction, being flexible in tackling non-normality of data and small sizes of the sample. Thus, this study made use of SmartPLS 3 to test the formulated hypotheses, using a two-step analytical process, consisting of the assessment of the measurement and the structural models [25, 54].

4 Analysis and Findings

4.1 Measurement Model

Under the assessment of the measurement model, internal consistency reliability was established using Cronbach's Alpha (CA) coefficient and composite reliability (CR) values. In this regard, constructs having high values of internal consistency often have highly correlated indicators. The value of CA and CR of the entire constructs (refer to Table 2) all exceeded the suggested 0.70 value, which established their internal consistency. In a related study, Hair et al. [55] stated that convergent validity is achieved when the outer loadings are higher than 0.708, and the AVE values are higher than 0.50. Table 2 shows that the items outer loadings are all higher than 0.70 and the values of AVE varied from 0.738 to 0.887, meeting the recommended values [55, 56] and evidencing the convergent validity of all the constructs.

Moving on to validity, the discriminant validity of the measurement constructs was examined using Fornell Larcker Criterion and Heterotrait-Monotrait ratio of correlations (HTMT) criterion. Discriminant validity can be determined by obtaining the AVE values square roots (diagonal values), and they need to exceed the highest correlation with other constructs (off-diagonal values). The result in Table 3 illustrates that the AVE square root values are higher than the constructs inter-correlation and thus, all the constructs were deemed to have appropriate discriminant validity.

Added to the above, HTMT was conducted to determine the constructs discriminant validity, being that researchers consider it to be more robust, influential, and superior to the Fornell-Larcker method [57]. Based on past relevant literature [58.59], the HTMT value should be lower than 0.85. Table 3 tabulates the HTMT ratio value and it did not exceed 0.85.

Table 2. Construct reliability and validity

Construct	Items	Loadings	C. Alpha	CR	AVE
Compatibility	COM-1	0.951	0.873	0.940	0.887
	COM-2	0.932			
Trialability	TRI-1	0.935	0.872	0.935	0.876
	TRI-2	0.949			
Perceived ease of use	PEU-1	0.840	0.882	0.918	0.738
	PEU-2	0.866			
	PEU-3	0.858			
	PEU-4	0.871			
Perceived usefulness	PUF-1	0.911	0.893	0.926	0.758
	PUF-2	0.873			
	PUF-3	0.852			
	PUF-4	0.845			
Remote auditing adoption	EAA-1	0.926	0.908	0.942	0.845

Table 3. Discriminant validity based on Fornell-Larcker and HTMT criteria

	Fornell-Larcker criterion				
Construct	1	2	3	4	5
Compatibility	0.942				
Remote auditing	0.558	0.919			
Perceived usefulness	0.490	0.616	0.871		
Perceived ease of use	0.614	0.627	0.646	0.859	
Trialability	0.467	0.613	0.579	0.577	0.942
	HTMT criterion				
Construct	1	2	3	4	5
Compatibility					
Remote auditing adoption	0.629				
Perceived usefulness	0.553	0.685			
Perceived ease of use	0.696	0.698	0.725		
Trialability	0.531	0.683	0.654	0.652	

4.2 Structural Model

The study followed the guideline established by Hair et al. [56] in assessing the structural model. The first step involved the examination of the variance inflation factor (VIF) values of the predictor constructs and the model items. Such values were below 3.0 and as such, it was concluded that multicollinearity was not an issue. This is followed by the second step which involved the examination of (R2) values of the predictor constructs for assessing the in-sample fit of the model. The (R2) values obtained for the constructs were as follows; perceived ease of use (0.484), perceived usefulness (0.487), and remote auditing adoption (0.470). Added to the R2 values the Q2 values were also obtained for assessing the predictive accuracy of the model. The (Q2) values of the constructs are 0.331 for perceived ease of use, 0.336 for perceived usefulness, and 0.369 for remote auditing adoption, which all reflect the model's acceptable predictive relevance. The third step involved the assessment of the significance or otherwise of the main effects. The R2 values, calculated using the SmartPLS 3 software, are depicted in Fig. 2.

Furthermore, the structural model's path coefficients were calculated with the help of bootstrap analysis, with a re-sampling of 5000, for the statistical significance assessment. The path coefficients result along with the level of significance are presented in Table 4, and from the t-value and p-value results, the six proposed hypotheses (H1a, H2a, H2b, H3a, H3b, and H4) were all significant as expected. In this regard, Henseler et al. [57] suggest using the percentile bootstrapping to obtain the confidence level of 95%, where the structural path coefficient significance is different from 0 as mentioned in Hair et al.'s [56] study. Figure 2 presents the path coefficients and their values.
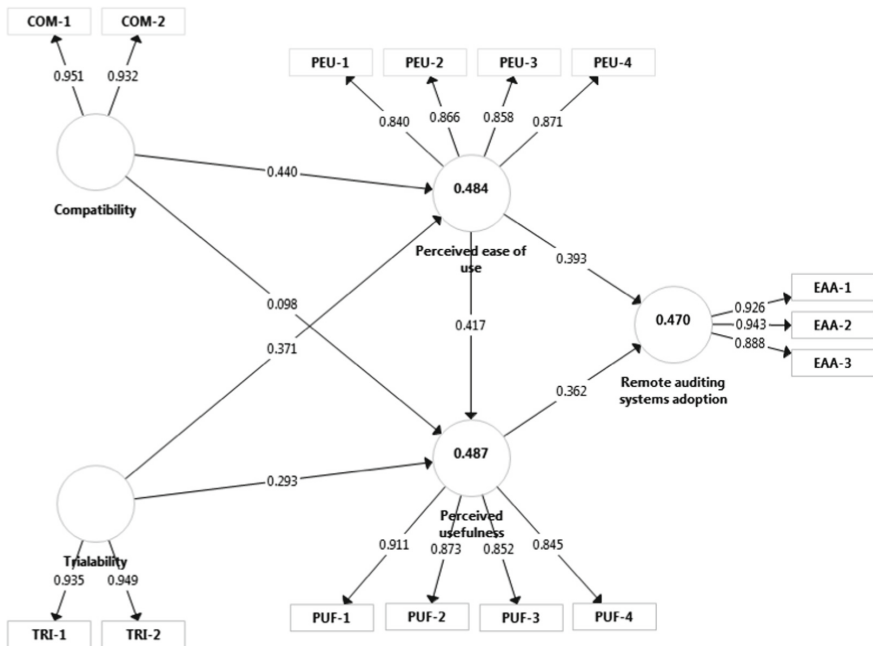
Fig. 2. Research model and path coefficients

Table 4. Hypothesis testing

Structural path	Std. Beta	t-Value	Decision	95% Bias Corrected CI	
			Lower:	Upper	
H1a: COM- > PEU	0.440	5.055*	Supported	(0.260; 0.603)Sig	
H1b: COM- > PUF	0.098	0.995	Not supported	(-0.094;0.293)Insig	
H2a: TRI- > PEU	0.371	3.421*	Supported	(0.163; 0.599)Sig	
H2b: TRI- > PUF	0.293	2.852*	Supported	(0.090; 0.477)Sig	
H3a: PEU- > PUF	0.417	4.882*	Supported	(0.249; 0.575)Sig	
H3b: PEU- > RAA	0.393	3.184*	Supported	(0.158; 0.631)Sig	
H4: PUF- > RAA	0.362	2.790*	Supported	(0.110; 0.616)Sig	

* $P < 0.01$. Notes: COM = Compatibility, TRI = Trialability, PEU = Perceived ease of use, PUF = Perceived usefulness, RAA = Remote auditing.

5 Discussion

Remote auditing applications are an essential solution for external auditors in different settings during the COVID-19 period. This research investigated determinants affecting the Jordanian external auditors' adoption of remote auditing. To do so, an integrated theoretical framework that encompasses the DOI and TAM models [30, 34, 36, 38–40, 44, 46]. This has been achieved by collecting the opinions of the Jordanian external auditors through a previously tested and valid questionnaire. Consequently, based on this study's results, it is apparent that the adoption of remote auditing is influenced by different factors. However, these factors show different levels of influence on remote auditing.

The findings show some unexpected results in relation to the impact of compatibility on the perceived usefulness of remote auditing systems. In this research, the hypotheses were developed based on the aggregate empirical evidence from the theory and prior research [30, 31, 34, 36, 38–40, 44–46]. A possible justification for this result is that the external auditors are required to adopt remote auditing under any condition as the pandemic conditions have altered several working environments. Accordingly, an external auditor who is compelled to use remote auditing systems would find the compatibility meaningless when it comes to deciding whether to adopt remote auditing systems or not. Contrary, compatibility has been found to significantly influence the ease of using remote audit systems.

Based on the findings, trialability is an influential factor that impacts both perceived ease of use and perceived usefulness of remote auditing within the Jordanian external audit context. These results confirm previous empirical evidence on technology adoption and use [24, 34, 38, 39]. The results highlight the significance of trialability in the decision toward remote auditing adoption. Therefore, individuals within this research context are recommended to have a sufficient period to try new. Adult firms as well are encouraged to allow their employee to be sufficiently trained and informed about the remote audit systems.

Similarly, the perceived ease of use of remote auditing has been found as an important determinant that impacts the perception of external auditors regarding the perceived usefulness of adopting remote auditing systems. A possible justification is that the external auditors believe that the use of remote auditing systems will help them as much as it is easy to be used to perform their duties. This result is consistent with other studies in the field [30, 33, 34, 39, 40, 44, 47].

This research indicates that the adoption decision as a dependent variable is well predicted by two major determinants, the perceived usefulness and perceived ease of use. Thus, it can be argued that the perceived usefulness and perceived ease of use are the most significant factors that can make the adoption of a remote auditing system a successful process. These results are aligned with previous researchers on technology adoption [31, 33, 34, 36, 40, 41, 44–46]. Therefore, it is suggested that external auditors would show more approval of the remote auditing systems that equip them with the maximum benefit in their work.

6   Conclusion

This study provides an insight into the determinants of remote auditing adoption during the COVID-19 pandemic that rapidly emerged in early 2020. The pandemic has had a tragic and significant impact on life milestones worldwide including the daily habits of people and their economic well-being. At the time of writing this paper, auditors were still facing challenges due to public health measures; however, they were still striving to maintain their certification services during this crisis. This study presents solid practical insights into the adoption and usage of o remote auditing in developing countries such as Jordan. Determinants of remote auditing are not only confined to organizational issues, as suggested in previous research [47], but also include other determinants, such as individual-related factors and technology-related issues. Therefore, the findings of this research offer valuable recommendations for policymakers, practitioners, and researchers and will enable them to be more informed about the important features of the successful adoption of remote auditing.

The present study has several policy and practical implications. As a result of the global implementations of the new public health measures, auditing firms are strongly advised to invest more in technology, e.g., artificial intelligence, and network security, as this can help companies to be more adaptive to remote working and enhance the effectiveness of the audit quality, which is ultimately it is expected to establish for an ideal and effective model remote auditing. This study also provides a rich insight into what determines the remote auditing adoption in the wake of the COVID-19 pandemic which can put more emphasis on the development of the 'new normal' practices in the aftermath of the pandemic. More importantly, in Jordan, policymakers hoping to introduce new policies and regulations to improve the adoption of remote auditing would find this study to be of major importance. Additionally, this study can be used as a basis for building a research instrument e.g., interviews or questionnaires, to provide a better understanding of the potential impact of COVID-19 on the audit profession.

Since technology integration has become crucial in audits, this study recommends auditors exercise professional care when adopting new technology as a substitute for

the conventional auditing approach to avoid any legal responsibility. Full access to all required information and documents is also needed in order to guarantee that high-quality auditing is done. Apart from this, management must enhance all activities relevant to internal control which can contribute to further accuracy of financial reporting and can minimize the possibilities of making wrong opinions by auditors. Accordingly, this study provides valuable insights and implications that can be utilized by decision-makers to successfully adopt and implement the technology by auditors during the Pandemic COVID-19.

Any research has its own limitations, and this research is no exception. First, auditors' self-reporting bias can present a challenge, especially when they asked about their technology utilization. Thus, conducting qualitative research by future researchers is particularly important to provide better understanding of remote auditing adoption, regardless of the presence of participants' self-report biasness. Additionally, it is prudent not to generalize this study's findings to countries with advanced economic development. Therefore, researchers currently conducting studies could replicate this study using the contexts of more developed countries as a case selection.

Availability of Data and Material.   Upon request.

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Big Data Analysis and Data Visualization to Help Make a Decision - Islamic Banks Case Study

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Abstract. Interest in data of various forms and sizes has risen in recent years, and it has become a defining aspect of modern period. The use of digital transformation strategies and their role in recovering from the consequences of the Corona pandemic, particularly in financial institutions, is the focus of this case study on Islamic banks. This study examines the big data analysis cycle for five Islamic banks' data in the 2019/2020 era. In addition to following the five steps of the big data analysis cycle and concentrating on the phase of developing a model in order to produce graphical results that can be studied. It will make use of Google Data Studio, which is one of the greatest tools for analyzing large amounts of data. On the other hand, after creating the relevant hypotheses, it will explore possible scenarios and the visuals that result. Finally, there are visualizations and reports that assist decision-makers and investors in evaluating bank performance before to and during the Corona pandemic, making it easier to follow financial performance and conduct of banks. The research also considers the consequences of bank graphical reporting and considers whether hypotheses to help capture all statistical results in visual form are required.

Keywords: Big data life cycle · Google data studio · Visualization · Decision making · Bank

1 Introduction

Big Data can be defined as vast amounts of widely diversified data that are generated, processed, and collected at a high rate [1]. It is rapidly gaining momentum in technical development in various corporate and academic areas. Companies can use big data to produce all goods, inventive future visions, and even analyze data for millions [2, 3] by processing many of these data utilizing existing technology and implementing advanced analytics.

As all big data has been defined as a major aspect of disruptive change in the networked business environment because it relies on big data technologies [4], the opportunities coming from numerous large analytics can be deemed pivotal for businesses. And it can anticipate companies to profit significantly from a variety of fields, including

e-commerce science, health, e-government, and security, where they generate benefits that organizations value, and which are among the strategic goals for generating and exploiting big data [5].

Big data analytics are used to understand and extract useful insights from market trends and client preferences, such as hidden patterns and unknown relationships [6]. Big data analytics has a number of advantages, including the ability to make better judgments and prevent actions. Among other things, fraud [7].

Deploying big data analytics is the process of bringing together all the groups whose data is large in order to analyze and organize it in order to find and discover all the different patterns and useful information, where big analytics is a collection of technologies that require new forms of integration in order to reveal several large values that have been hidden from all the groups [8]. The major one, which differs from traditional habits and ideals and is the most challenging on a broad scale since it focuses on solving new and old problems more effectively and professionally [9].

Accounting, finance, and investment have all seen a positive impact from big data [10]. Big data has the advantage of assisting firm auditors in doing more accurate data audits and providing a better customer experience [11]. In terms of tax problems, big data is critical for reviewing tax laws, eliminating fraud, tracking and regulating budget and tax expenditures, and studying corporations listed on stock exchanges using technical or financial analysis. As a result, big data helps organizations and businesses save money and time. Big data has an impact on many industries, including consulting, which uses it to find and monitor questions and provide better reports. Big data in finance aids in the development and construction of analytical models as well as the creation of more accurate financial reports. Conclusion: Big data is one of the most important technologies for accounting and finance departments [12].

Years of change in the way banks in all sectors and regions do business have resulted from the COVID-19 disaster. The COVID-19 epidemic has already wreaked havoc on the global economy, causing credit conditions to deteriorate and certain bank asset valuations to plummet. Late loan repayment rates have grown, which may have a negative impact on bank profitability and performance [13, 14].

By analyzing the data available through Google Data Studio, after determining the supposed model of a report, and by framing the problem, it has become necessary to take advantage of information technology, to reduce the effects of the crisis, and to assist in the provision of appropriate reports to decision-makers. The problem in this study will be to compare bank performance in 2019 and 2020 for five Islamic banks, as well as to develop hypotheses to link the most important attributes in the data, in order to build a model capable of providing reports and data visualization that aid investors and decision makers.

2   Literature Review

Big Data is a relatively new concept, with many experts describing it as a tremendous flood of data. In a single day, we all generate a massive amount of digital data [15]. This data is generated by his everyday actions on the Internet, as well as the numerous devices and tools with which he interacts, and is captured and saved, in most cases, in the

cloud in the various programs and applications available [16]. Supervisors frequently require big data after investigating it in order to oversee jobs and provide various forms of support. In addition, present organizations are trying to collect, preserve, and analyze all data related to their activities and administrations. The biggest challenge, however, is figuring out how to break down this massive amount of data, which is why data science has been popular in recent years [17].

Big Data is described as vast amounts of widely diversified data that are generated, processed, and collected at a high rate [18], and it is rapidly gaining momentum in technical development in various corporate and academic areas. Companies can use big data to produce all goods, innovative future visions, and even analyze data for millions [3] by processing many of these data utilizing existing technology and implementing advanced analytics.

Big data is required by all large companies and organizations, such as YouTube, Instagram, and Google, in order to research and assess organized and unstructured data. Because Instagram contains so much data, it should be subjected to big data analysis. In terms of speed, diversity, and size, big data differs from arranged data generated from multiple sources. Data volume, execution restrictions, and the availability of a gas pedal all have a significant impact on the decision of large vs small center servers for energy productivity across a wide range of actual big data applications and multiple product suites [19].

Hadoop's popularity stems from its capacity to store and process massive amounts of data of various types while maintaining processing power, speed, fault tolerance, and flexibility in storing as much data as you want, with the method of usage defined later. This comprises structural data like photos, text, and video clips, as well as associated commodity devices, which are low-cost and scalable for storing vast volumes of data [20].

There are numerous advantages to using big data, all of which are very broad, as there are two primary categories of advantages. 1-Cost-cutting 2-Competitive advantage, where large tools of companies are able to store very large amounts of data at a lower cost than a traditional database [21], and big data also gives all companies a competitive advantage by allowing them to discover new business opportunities on the ground, where services, products, and even new business models can emerge from big data analysis. There are five areas where big data has proven to be quite beneficial: 1-A rise in sales 2-Customer satisfaction has improved. 3-Better understanding of consumer behavior 4-A rise in registrations 5-A higher rate of return on investment (ROI) [22].

The data analysis lifecycle is designed for big data initiatives and data science. To address a realistic venture, the cycle is iterative. A bit-by-bit method is required to sort out the exercises and duties associated to data collecting, handling, analysis, and repurposing to meet the clear demands of doing analysis on huge data [23].

Google Data Studio is a toolset for everyone who has to get everything done using business intelligence, or who simply wants to avoid domination and create simple automated reports [24]. The user interface is simple to navigate, and the working process is as straightforward as one may imagine. Furthermore, the usage of is fully permissible [25].

Tableau is an end-to-end data analytics technology that enables us to produce, analyze, subscribe to, and share big data insights [26]. Tableau is a forerunner in self-service visual analysis, allowing users to submit updated questions about censored huge data and quickly share their findings across organizations [27].

Hadoop is an open-source technology for storing and processing large data volumes on clusters of VMware hardware. This technology is free and capable of handling a large amount of structured and unstructured data, making it a critical component of any big data business [28].

The research "Impact of Big Data Analytics on Banking Sector: Learning for Indian Banks" is based on big data analysis for many areas of the banking sector, in order to deliver the best services to their clients and strengthen security systems. The data for transactions was evaluated, and the results of collecting customers' feelings in order to evaluate the bank's performance were shown, and this data was gathered from numerous sources such as social networking sites. The transactions, on the other hand, were examined in order to develop a model for client spending habits and to obtain information about customers and future goods [29]. In order to optimize operations and give the finest services to consumers in the right way and at the right time, the banks and financial institutions industry must incorporate big data into their processes. To perfectly create client relationships and obtain data from a variety of sources, such as internet banking, telephone banking, ATMs, and WAP banking [30].

3   Research Design

Previous works on the topic of the research were used to define the foundations and processes needed to construct an initial model for the proposed solution mechanism. In addition to reviewing and analyzing numerous cases and problems confronting financial and accounting institutions, particularly big data analysis in the banking sector and banking institutions, to arrive at a general vision of how to find a solution and a mechanism to extract the appropriate graphics for the problems confronting commercial organizations through big data analysis.

Interviews and general interactions were used to collect primary data and create the model. Semi-structured interviews with the institution's owners and bank professionals were undertaken for this study. Semi-structured interviews allow the researcher to ask more questions as needed and to keep the general perceptions of the first solution model to a minimum. and verifying the effectiveness by relating the technical parts to the intended outputs Face-to-face semi-structured interviews were undertaken. More details on the solution model, the mechanism for measuring results, and applying the solutions were supplied. In addition, solutions must be examined and verified at all levels to guarantee that they can be implemented and achieve the desired results.

4   Proposed Model

The data from the Bahrain Bourse website was processed, and the necessary processes to clean and coordinate it were carried out by extracting it from the financial statements in addition to the vast amounts of data already available on the website [31]. For usage in the

life cycle of big data analysis, accounting and finance, implies that all stages are in a circle and follow-up to obtain findings and reports. Visualization that aids decision-makers in making the best choices.

This paper presents a visualization of a mechanism for predicting investment management in the banking field, as well as analyses of creating opportunities in the capital markets for investors, who may need to obtain reports in order to persuade investors to take the appropriate decision at the present time, due to their fear of Corona's effects and their belief that they will continue.

The steps of analyzing the big data available to Islamic banks, starting with collecting data from their sources, cleaning it and setting conditions for analysis, then building models based on problem framing and appropriate hypotheses for solutions, and finally testing the proposed models and using Google Data Studio to generate Analyzable graphics. Finally, examine the findings and convey them to the decision maker so that appropriate decisions can be made.

5   Results and Discussion

The Graphics are important in the financial business because they save time and make data easier to interpret. In business data reports, financial data frequently contains a lot of numbers. As a result, we utilize charts to help with exposure and to collect a large amount of numbers, sometimes all in one chart. For those in the financial industry, this is a huge plus.

The phases of big data analysis will be explored in detail in this section in order to arrive at results that can be evaluated, with a focus on using Google Data Studio to create visuals based on framing the problem and hypotheses proposed in the discovery stage. A discussion of scenarios and conclusions for some graphic examples, on the other hand.

Discovery phase

To arrive at appropriate hypotheses, to reach outcomes, form a working group and distribute tasks, as well as frame the challenge. For five Islamic banks, data was acquired from the Bahrain Bourse website. It's worth noting that the banks under consideration are all publicly contributing institutions, which means that all of their financial disclosures are open to the public [31]. On the other hand, working on these models will necessitate knowledge in specific areas, such as the use of charts and big data analysis, as well as the ability to analyze financial documents from firms and banks.

The problem that the research will construct big data analysis on is how to obtain graphical reports that assist decision makers in making proper decisions. As a result, a complete and exhaustive report demonstrating the feasibility of investing in Islamic banks listed on the Bahrain Bourse is expected.

The report will assist the company's decision makers, including executives and members of the board of directors, in evaluating the situation and selecting the most appropriate investment bank. Creating a First Hypothesis: IH1: The performance of banks. IH2: Comparing the performance of banks over a two-year period. IH3: The financial consequences of the Corona pandemic in 2020.

Data preparation phase:

As a first step in the analysis, the team worked on building a bank database. The information on the banks was gathered during this phase by getting financial data in addition to the big data available for each bank on the Bahrain Bourse website. In addition to the World Health Organization's information on the Corona pandemic in Bahrain [32]. And, depending on the assumptions created in the previous phase, gather the necessary and available data from the site and create a sandbox that will serve as a clone of the original data, allowing testing and analysis without modifying the basic data. The necessary features that assist in the design of a test model, on the other hand, have been discovered. Clean and filter data, including eliminating and excluding some superfluous data for our study, as well as establishing some rules and conditions during the cleaning process. The data was extracted from the data storage, converted to csv, and then submitted to a Google Data Studio formula for analysis.

Model Planning:

Table 1 illustrates a portion of the data that will be used to create a model that will be used to test the hypotheses. These data necessitate a thorough examination. The analysis team will begin by extracting numbers from the banks' financial statements and presenting them in the form of tables that reflect each bank's performance. Assets are resources that have a definite worth that an individual or company owns and that have economic and financial advantage in the future, according to various definitions. Liabilities are the legal financial debts owed by institutions and businesses, and they are seen as a covenant by the institution. A cash flow statement is a financial statement that shows how much money has flowed in and out during a specific time period.

Table 1. Banks assets liabilities and net cash flow

Name of the Bank	Year	Total Assets	Total Liabilities	Net cash Flow from Operating
Al Salam Bank	2020	2,261,353,000	754,806,000	-31,052,000
Al Salam Bank	2019	2,042,803,000	687,986,000	4,594,000
Ithmaar	2020	3,143,874,000	1,772,959,000	158,636,000
Ithmaar	2019	3,021,964,000	1,828,516,000	17,451,000
Bahrain Islamic Bank	2020	1,211,581,000	621,279,000	28,704,000
Bahrain Islamic Bank	2019	1,223,560,000	573,158,000	8,158,000
Al Baraka Banking	2020	10,593,749,000	4,049,031,000	526,616,000
Al Baraka Banking	2019	9,846,949,125	3,292,299,000	589,314,000
Khaleeji Commercial Bank	2020	1,015,594,000	438,210,000	-56,050,000
Khaleeji Commercial Bank	2019	939,752,000	329,655,000	99,040,000

Model Building:

During this phase, a model will be built using Google Data Studio, one of the top big data analysis apps, to obtain graphics connected to hypotheses, as well as experimenting with various scenarios to arrive at features that provide findings that help decision makers make the best decision.
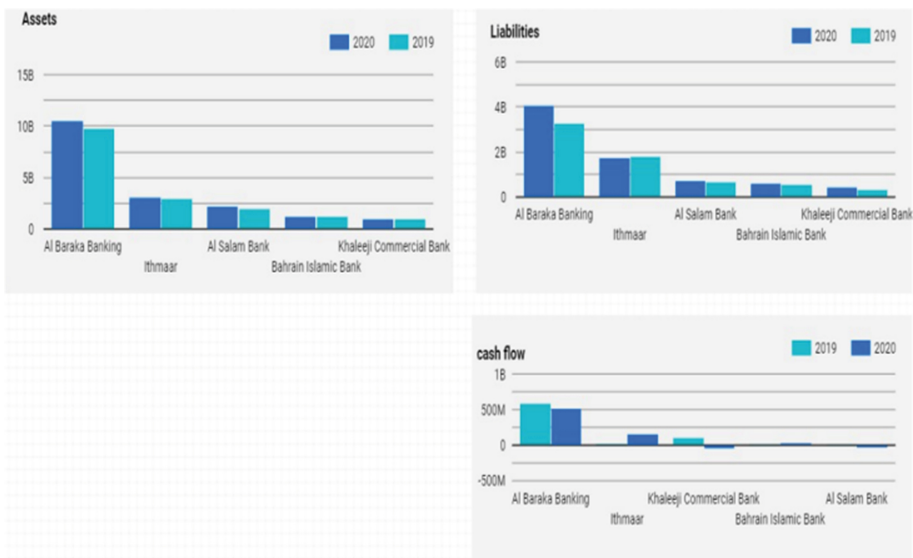
Fig. 1. Banks assets liabilities and net cash flow.

Figure 1 illustrates bank performance over the last two years. We can see that Al Baraka Bank has the most assets in comparison to the other banks, while Al Khaleeji Commercial Bank has the least assets in comparison to the other banks. In terms of cash flows, there were significant fluctuations between 2019 and 2020, with Al Baraka Bank maintaining consistent cash flows over the two years, while Al Salam Bank and Al Khaleeji Commercial Bank had the worst performance in terms of cash flows for the year 2020, recording negative flows.

Figure 2 shows some of Google Data Studio's graphical output. It may be deduced that there is a profit gap between 2019 and 2020, which is due to the influence of the Corona epidemic, as well as the impact of several economic decisions made by the Economic Committee of the Kingdom of Bahrain, such as the Central Bank of Bahrain's decision to postpone loan repayment. It should be noticed that Ithmaar Bank and Bahrain Islamic Bank had the worst performance in 2020, while Khaleeji Commercial Bank outperformed the rest of the banks by producing a profit in 2019, maybe as a result of treasury investments. When it comes to loan-to-asset ratios, Ithmaar Bank and Bahrain Islamic Bank have a big number of debts relative to their assets, whilst Al Baraka Group and Al Salam Bank have reasonable debt ratios.

Communication Result

By analyzing big data based on the assumptions that were generated, the team was able to achieve significant results in this phase, which aimed to compare statistics between five Islamic banks in 2019 and 2020. And the impact of the Corona pandemic on their performance 19. On the other hand, the report and its graphics have become critical in assisting decision-makers in their decision-making as well as effectively and responsibly monitoring bank performance.
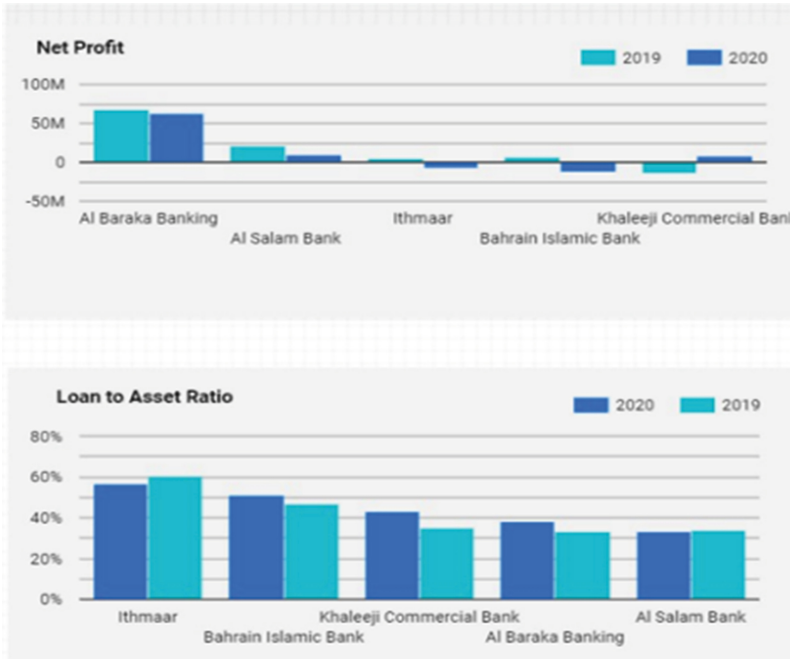
Fig. 2. Banks profitability

Operationalize

The analytical team outlines the methods and outcomes it has obtained in this final step to assist the executives and board of directors in making the best decision possible. According to the report, all Bahraini Islamic banks' profitability has been impacted by the Corona epidemic 2020, with the exception of Al Khaleeji Commercial Bank, whose profits climbed by nearly 170 % from 2019. Furthermore, according to the research, Al Baraka Bank is Bahrain's largest Islamic bank, with assets of 10 billion Bahraini dinars and reliable cash flows. Furthermore, according to the data contained in the drawings, Bahrain Islamic Bank and Ithmaar Bank were the most affected by the Corona pandemic, and this is attributable, according to our research, to the fact that the two banks are dependent on retail services for individuals.

6   Conclusions

The phases of the big data analysis cycle will be applied to a group of Islamic bank data in order to monitor their performance in 2019 and 2020, as well as the impact of the Corona 19 pandemic on the banking sector, in this paper, which covered the topic of big data and how to analyze it in order to obtain graphical results to aid decision-making processes. Follow the big data analysis life cycle, which consists of five steps, to arrive to the framework of the phases of big data analysis. The study looked at all phases and aimed to produce graphical results that would aid decision-makers in their decisions. This data

was gathered from Bahrain bourse website using one of the most prominent analysis tools, Google Data Studio. To achieve valuable results, on the other hand, the problem must be accurately stated, and then hypotheses must be developed through which a model will be produced, which will then be piloted to achieve outcomes. Present the most relevant earlier studies on the topic of the banking sector's crisis, particularly during the Corona 19 pandemic. The paper contributes to the development of technical tools for making the most use of available data in order to evaluate it and generate graphical results. Finally, these Google Data Studio visuals and reports aided decision makers and investors in evaluating bank performance in the run-up to the Corona pandemic 19 and during the pandemic, making it simpler to analyze financial performance and behavior of the five banks.

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Jordanian Islamic Banks Growth Credit Services in Corona Pandemic and Fitch Standard

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Abstract. This paper aims to find Jordanian Islamic banks credit services increasing in corona crises based to Fitch standard by got strength assets quality. It used descriptive methodology based to Jordanian Islamic Banks annual reports during corona pandemic. It found that Jordanian Islamic Banks apply increasing of credit services as assets with suitable grantee to get back without loss. It has different credit services types than traditional banks to cause managing risk by diversification, on other hand some Jordanian banks reduced credit doubtful with increased of guarantee value in corona crises while other banks reducer credit doubtful and credit loss with increased of guarantee value in corona as Jordan Islamic bank. Therefore, it got high quality of assets, and met Fitch index.

Keywords: Jordanian Islamic banks · Fitch · Credit services · Corona pandemic

1 Introduction

Jordanian Islamic Banks had to increase credit services in corona crises to follow monetary policy in order to cover customers' needs. Jordanian Islamic Banks had challenges. It impacted by same models of managing risk as in traditional banks but it not deal with interest on loans because it is forbidden by Shariah rules. It cannot adjusted loans as way to restructure loan, it has to different credit services as produce liquidity by Qard - Hasan or goods or services in corona pandemic as unusual case.

Corona in 2020 caused economic crises as result to Great Lockdown which reduced demand and supply. This case obligated to help small and medium- sized companies in Jordan, Therefore, Jordanian government and center bank tried to face this case by many procedures inspire of increasing budget deficit. It injected additional liquidity into the economy by cooperated with banks and taking decisions to protect the banking sector to keep credit rating level in suitable case by get ability to face customers default cases. Success of facing crises can be understood after getting distinguished ratings from many international rating institutions as Fitch Rating [1].

Fitch rating, in 1/4/2020 announced expecting increase of doubtful loans in Jordanian banks because of difficult in works and delay getting installments of loans beside restructure it based to center bank order without add interest. However, "it will delay the

recognition of Stage 3 loans under IFRS 9 and will understate the effective level of problem loans in the sector" [2], therefore, it needs to strength assets quality in future because of loan problems. Therefore, Jordanian Islamic banks need corona crises management and survival strategy.

1.1   The Problem

As result to corona crises negatively impact on banks credit services increasing, the study concentrates on finding ability of Jordanian Islamic Banks to meet Fitch ranking by get strength assets quality when it meets increasing of credit services. The problem questions are as follow:

- Are there suitable resources in Jordanian Islamic banks to increase credit services in corona crises?
- How Jordanian Islamic banks get strength assets quality to meet Fitch condition?

1.2   The Methodology

Is the descriptive methodology based to Jordanian Islamic Banks annual reports during corona pandemic and makes tables to understand Jordanian Islamic banks credit services that covered customers' needs in corona pandemic, besides tables to prove owning suitable strength assets quality. It uses historical study to understand changes of financial structure, credit services types and size, and reasons of owning strength assets quality. Population of study is the Jordanian Islamic bank: Jordan Islamic Bank, Arab International Islamic Bank, and Safwa Islamic Bank.

1.3   The Importance

Important comes because of finding the factors that impact Jordanian Islamic banks growth credit services success to finance customers' needs and proves success to meet Fitch condition as survival strategy. It helps searchers and leasers to understand success of Jordanian Islamic banks efforts in corona crises, and prove its success to help community with credit services based to Shariha rules.

1.4   Last Studies

By discuss external economic variable, it impacts financial performance in Jordanian conventional banks and Islamic banks [3]. As result to courage continuity, SMEs needs in Jordan governmental support in order to mitigate the harm caused by corona [4]. COVID-19 impacted financial environment in Jordan and creates standard methods for immediate cooperation [5]. There is need to measure the credit risk in Jordanian Islamic banks by proposed model. It helps to apply credit risk operating measuring, and forecasting as local and international Murabaha receivables, and Ijara receivables [6]. By study financial structure, Investment joint bank account can finance investing in Jordanian Islamic banks as a legal personality but its negatively impacts on owners of this account

because of reducing distributed profit [7]. Small enterprises in Jordan get advantage from Islamic finance formulas to achieving growth [8]. Some searchers analyzed the conventional credit risk management and mitigation techniques to apply it on Islamic banking. This explained factors that influence the emergence and intensity of credit risk in Islamic banking [9]. On other hand, there is suggested to manage risk model for creative developing projects in Islamic banks to avoid loss, and success it's sharing in developing based to limited standards related to Islamic rules [10].

2   Jordanian Islamic Banks Credit Services and Managing Financial Structure in Corona

As importance of financing to produce credit services, Behavior of deposits in banks was impacted by customers' returns cases. Some companies increased returns as result to increase demand on its products, but, other companies reduced returns or lost returns as result to lose their products demand. Individuals were impacted by these companies' cases. Government general budget was managed by deficit. These cases impact financial structure as impact ability to apply suitable credit services strategy.

2.1   Analysis Factors of Financial Structure Management in Jordanian Islamic Banks Within Corona Crises

Financial structure management of Jordanian Islamic Banks is the independence factor. It is the way to finance producing credit services to meet customers' real needs. To produce bank credit services, there are external resources of finance by liabilities and Joint investment account; also, there are internal resources of finance by equities (Table 1).

Table 1. Managing financial structure in jordanian islamic banks within corona pandemic (million JD)

Jordanian Islamic Banks	Safwa Islamic Bank		Arab International Islamic Bank		Jordan Islamic Bank	
Financial structure	The Year 2020	The Year 2019	The Year 2020	The Year 2019	The Year 2020	The Year 2019
Liabilities	1476	1343	802	771	337	279
change in liabilities	+133		+31		58+	
Total change in liabilities	+ 222					

(continued)

Financial structure management is impacted by liabilities, Joint investment account, and equities. There was increasing of liability and equities to meet Jordanian Islamic

Table 1. (*continued*)

Jordanian Islamic Banks	Safwa Islamic Bank		Arab International Islamic Bank		Jordan Islamic Bank	
Financial structure	The Year 2020	The Year 2019	The Year 2020	The Year 2019	The Year 2020	The Year 2019
Joint investment account	2828	2652	1491	1301	1326	1135
Change in Joint investment account	+176		+190		+191	
Total change in Joint investment account	+557					
Equities	474	421	244	214	154	144
Change in equities	+53		+30		+10	
Total change in equities	+93					
Total change in financial structure	+872					

Resource: by authors based to Jordanian Islamic Banks annual reports [11–13].

Banks financing credit services in corona crises. There was no problem of liquidity in it.

2.2   Credit Services in Jordanian Islamic Banks Within Corona Crises

Jordanian Islamic Banks apply using of liability and equities to increase its credit services. It had behavior from 2019–2020, credit services are measured by deferred sales receivables and other receivables – Net in assets, see Table 2:

Table 2.   Credit services in Jordanian Islamic Banks within corona pandemic (JD Million)

Jordanian Islamic Banks	Safwa Islamic Bank		Arab International Islamic Bank		Jordan Islamic Bank	
Period within 2019–2020	The Year 2019	The Year 2020	The Year 2019	The Year 2020	The Year 2019	The Year 2020
Credit services amount	641	754	759	834	2252	2590
Behavior of credit services in every bank	+113		+83		+338	
Behavior of credit services in all Jordanian Islamic banks within corona pandemic					+534	

Resources: by author depend on Jordanian Islamic bank annual report [11–13].

Jordanian Islamic banks apply growth strategy to increase credit services amount about (534) million to meet customers' needs within the period 2019–2020. It covers customers' needs by Islamic rules, therefore, it applies credit Islamic contracts. It coversreal customers' needs as getting goods or services or cash, while traditional credit services covers customers' needs by just cash, see Table 3:

Table 3. Behavior of credit services amount based to contracts types in Jordanian Islamic banks within corona pandemic (JD Million)

Jordanian Islamic Banks		Safwa Islamic Bank		Arab International Islamic Bank		Jordan Islamic Bank	
Types of customers and type of services contracts		The Year 2019	The Year 2020	The Year 2019	The Year 2020	The Year 2019	The Year 2020
Individuals	Murabaha to purchase order	215	267	259	306	663	719
	Deferred sales	-	-	-	-	9	11
	IjarahMawsoofaBilThimma	-	-	-	-	5	7
	Ju'alah guarantees	-	-	6	8	-	-
	Receivables – IjaraMuntahiaBittamleek	1	1 + 1	1	2	6	6
	Customers' receivables	2	3	-	-	10	10
	Real estate financing	25	23	149	150	455	488
Corporate:	International Murabaha	57	13	140	134	26	22
	Murabaha to the purchase orderer	355	359	225	224	420	512
	IjarahMuntahiaBittamleek receivables	2	1	2	1	0,324	0.321
	Istisna'a	-	-	-	-	16	28
Small and Medium Enterprises (SME's):	Murabaha to the purchase ordered	23	39	63	103	165	159
Government and public sector		62	150	-	-	879	1065

Resources: by author depend on Jordanian Islamic bank annual report [11–13].

Jordanian Islamic banks have different credit services depending on Islamic financial contracts, and the amounts of these services are different between Jordanian Islamic banks. The different credit services will cover different advantages, therefore, behavior of credit services amount follow customers' needs. The needs are divided based to different credits services advantages, see Table 4:

Table 4. Behavior of credit services based to customer contract type advantage in Jordanian Islamic banks within corona pandemic

Customer contract types	Customer contract type advantage (the benefit for customers)
Murabaha to purchase order	To own products and get advantage of its using or consumption, also, avoid ignorance of cost by understand bank costs and profit
Deferred sales	To own products and get advantage of its using or consumption based to market price or negotiate because of customer experiences in market
Ijarah Mawsoofa BilThimma	To own advantage of using products without own these products in order to keep cash or to avoid tax or to meet possibility of reducing product cost in future
Ju'alah guarantees	To get customer advantage of bank grantee as insurance or reputation
Receivables – Ijara Muntahia Bittamleek	To get customer advantage of using it and delay owning products. It help to keep cash currently, and limit owning price in future to avoid increasing price possibility
Customers' receivables	It meets customers' needs by get loan without interest
Real estate financing	It meets customers' needs of owning lands and buildings to meet advantages of using or trading
International Murabaha	It meets customers' needs of owning products from other countries because it is not available in local market or it is expensive in market
Istisna'a	It meets customers' needs of owning products based to manufacture with limit conditions because it is not available in local market or it is expensive in market

Resources: by authors.

2.3 Growth Credit Strategy Risk Management in Jordanian Islamic Banks Within Corona Pandemic

Managing risk will strength assets quality. Credit may get in default case but when there are suitable grantee it will easy for Jordanian banks to get their credit back without losing.

Jordanian Islamic banks have to manage credit services risk. It has same risk as in traditional banks such as default risk and inflation risk, also it has different risk because of owning goods risk and buildings risk to meet customers' real needs. Goods and buildings have risks because of changed price in markets, damage, changed in tax, changed in storage cost, and changed in maintenance cost. It causes different between current value and future value [11–13].

Jordanian Islamic banks manage credit risks of doubtful and loss based to suitable guarantee. It analysis that by based to financed credit services by Joint-finance or self-finance (Table 5).

Table 5. The distributed of the fair value of the guarantee against deferred sales receivable, other receivable and financing (million)

Fair value of the guarantee against credit risk	Safwa Islamic Bank						Islamic international Arab Bank						Jordan Islamic bank					
	2018		2019		2020		2018		2019		2020		2018		2019		2020	
	Self	Joint	Self	Joint	Self	Joint	Self	Joint	Self	Joint	Self	Joint	Self	Joint	Self	Joint	Self	Joint
Cash margin	1.6	-	24	23	7.5	13.8	-	10	-	13	-	8	-	3	-	4	-	5
Accepted bank grantee	-	-	-	-	-	-	-	-	-	-	-	-	-	62	-	21	-	26
Real estates	-	--	-	77	3.4	102	0.9	130	0.9	121	0.9	119	1	643	8.7	676	2	676
Traded shares	-	-	-	-	-	-	-	-	-	-	-	-	5	1	5	3	5	2
Vehicles and machines	0.6	-	0.6	111	0,5	125	-	74	-	64	-	64	0.8	336	3	338	1	327

Resources: by author depend on Jordanian Islamic bank annual report [11–16].

All most guarantee are vehicles and machines after that become the real estates. Jordan Islamic Bank had the most of guarantee against deferred sales receivable, other receivable and financing as result to produce the highest credit services amount (Table 6).

Table 6. Credit exposure of deferred sales receivable and other receivable and financing are distributed according to the risk degree (million)

Risk of credit	Safwa Islamic Bank						Islamic international Arab Bank						Jordan Islamic bank					
	2018		2019		2020		2018		2019		2020		2018		2019		2020	
	Self	Joint	Self	Joint	Self	Joint	Self	Joint	Self	Joint	Self	Joint	Self	Joint	Self	Joint	Self	Joint
Doubtful	-	11	-	1	-	0.4	-	6	0.1	2	-	0.78	0.1	6	-	9	-	2
Loss	-	9	-	12	-	12	3,6	19	4	21	4	22	0.3	97	0.3	62	0.1	55

Resources: by author depend on Jordanian Islamic bank annual report [11–16].

There is default and loss of sales receivable and other receivable as credit services during 2018–2020. Jordan Islamic bank reduce it within corona 2020 but Islamic international Arab bank just reduced self-financed risk of joint-finance doubtful in 2020 and Safwa just reduce joint-financed risk of doubtful in 2020.

3   Conclusion

Corona crises cause problem of reducing supply and demand, therefore, the government depend on banks sectors to solve the problem. Jordanian Islamic Banks apply increasing of credit services as assets with suitable grantee to get it back without loss. It has different credit services types than traditional banks to cause managing risk by diversification, on other hand some Jordanian banks reduced credit doubtful with increased of guarantee value in corona crises while other banks reducer credit doubtful and credit loss with increased of guarantee value in corona as Jordan Islamic bank. Therefore, it got high quality of assets, and met Fitch index.

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The Impact of Intelligent Leadership on the Effectiveness of the Outstanding Performance of Employees «Case Study Algeria Telecommunication Institution Bechar»

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Abstract. This study highlights the importance of smart leadership in increasing the outstanding performance inside the Algerian institutions. Through a field study of smart leadership method in Algeria Telecommunication institution in Bechar city, a descriptive and analytic procedure has been used to answer the problematic by giving out a questionnaire to 20 employees. After analyzing data a series of results have been realized among these results is that Algeria Telecommunication institution takes seriously the idea of human capital as well as the outstanding leaders in order to increase both effectiveness and competency of employees in the institution.

Keywords: Smart leadership · Outstanding performance · Efficiency · Competency · Algeria telecommunication

Preface: The smart leadership considered as an important element for the success of any institution regardless of its size, name or its activities. Because it has an influence on the system inside the institution, today the successful foundations distinguished from other competitors by having the idea of smart leader, therefore efficient employees that have different leader ship skills are needed. Moreover these kinds of employees pave the way to institutions to get higher degrees of quality and production. It stands out within the following question: to what extent does the smart leadership contribute to the effectiveness of performance in the institution of Algeria Telecommunication (Bechar)?

Chapter One: The smart leadership and the outstanding performance as a theory.

The smart leadership considered as one of the most important occupations that the manager is responsible for, because it has an essential role in the administrative activity.

First: The Theoretical Frame of Smart Leadership
This chapter will be devoted to the meaning of the smart leadership and its importance for the individual and the institution.

1. **What smart leadership is and how it is defined:** numerous attempts to define smart leadership, many were developed by researchers to support their findings.

Here are some of these definitions: The smart leadership is: "A common debate between the chief and his followers in order to get the common vision for the future of the institution, furthermore setting objectives in efficient way. This operation takes place within one organized group sharing the same organizational culture and values. Moreover it influenced by some surroundings like industry and society [1].

Also it is known as: " A leading form that based on shaping the effective organizational structure, and guiding the strategy of the establishment in order to get its objectives through leadership, by participation and the common social intelligence, taking into account the culture of the foundation in addition to individual capacities". [2]

Also it was defined as: "A set of skills that are followed by leaders in smart foundations and the first of these skills is to avoid risks, as well as being proactive in getting needed demands, furthermore the defensive thinking, the common responsibility and mistakes should be confessed and fixed". [3]

So we can define intelligence leadership as the ability to develop skill sand competencies of both the leader and the individuals around him.

2. **The Importance of the Smart Leadership:**

   – Simple and overall entrance to leadership activity.
   – Depends on post-industrial model.
   – Depends on an overall sense of individuality besides the professional, material, mental, social, and spiritual status.
   – Puts individuals inside the establishment.
   – This model has been developed by leaders specifically for the smart organizations.
   – It depends on the theory of organization.
   – The smart leadership as a common and co-operative process.
   – Attention must be devoted to leadership training for both leaders and followers.
   – Leadership has moral and ethical dimension.
   – It helps to solve problems that we face nowadays at the level of individuality, organizational level, and at the level of society.

   The importance of leadership appears in creating, keeping and inspiring the vision, moreover applying this vision and sharing it with the team. This kind of leadership contributed in solving many problems that the industrial era left in the world.

Two: The Meaning of the Outstanding Performance
Establishments seek to increase its competency, challenging its competitors by enhancing the performance of the employees.

1. **Definition of outstanding performance:** the outstanding performance based on ameliorating the capacities of employees and their effectiveness in performance.

   Excellence is the main objective of the institution. It requires high effective competitive levels and a high quality of services and products. [4]

   Excellence is known as that deep rooted stable practice in the administration of the institution. Which seeks to settle a set of results based on several elements

are: first, results orientation second, agent orientation, then leadership and stability of objectives, after that conducting through operations and facts, later developing individuals and regular learning, finally creativity and improvement. [5]

The outstanding performance known as pioneering and impressive performance in presenting services and products. This performance assures great results that make the agent satisfied, furthermore individuals and participants. It is the only performance needed in this competitive and globalization, era of internet, media and telecommunication techniques, and the dominance of the human intellectuality. [6]

According to John Okland "it is the ability of stopping and harmonizing elements of the institution. Then keeping them in action, connected together to get the highest effective results. So that getting to a level which fulfils needs, benefits, and expectations of the connected leaders. [7]

"Also it is the ability to realize works in an appropriate manner, within structural tasks, without routine traditional ways." [8]

"This performance also defined as a group of high behavioral capacities and mental cognitive skills. That the employees must have in order to get the ability to settle these capacities and attitudes in their specialty. So they can achieve tasks beyond the organizational criteria, so as to be outstanding quantitatively and qualitatively. Furthermore presenting modern products and ideas with an outstanding performance.[9]

2. Why do we adapt outstanding performance? Because of:

2.1 **the fast stable change:** the modern environmental conditions are always changing, so the activities and decisions of the institution are influenced by these conditions [10].

2.2 **unlimited competition:** the strong competition in both local and international markets, leads to the appearance of new competitors continually. So as there is always continually production with creative high quality products. Also the strategic alliance between foundations.

2.3 **Growing the sense of quality:** the excellence brings stability to the institution as well as it adds more chances to its durability.

Hunger and Wheeln accentuate this fact, they confirm that: "the institutions that apply strategic leading, it works with more competencies better than those with no leading thought [11].

2.4 **the growth of information technology:** the smart leadership keeps applying strategic objectives for the institution through the use of technology and resources, and it includes: obtaining programs, modern technological equipments, and developing technological programs that they already had.

Chapter Two: Field study: In order to answer the previous problematic a survey has been done in Algeria Telecommunication agency in Bechar.

First: Field Study Methodology

The field study based on the analytic procedure, in which a questionnaire has been given to a group of employees in this agency. Later data have been collected.

1. **Community and sample study:** community study includes all employees in the institution of Algeria Telecommunication, in Bechar city. However the sample is a random simple part includes 20 employees working in this institution.
2. **Limits of the study:** this study has been realized from April 2021- to May 2021 in the same institution, in Bechar.
3. **The study tool:** this research was based on a questionnaire in order to collect data, whereas it contains a specific part concerning employee's private information. And another part concerning the research questions.
4. **The study model:** it contains independent variable, the intelligent leadership has three dimensions are: first, flexibility in treating, second solving conflicts, third motivating employees (Table 1).

    Dependent variable: the outstanding performance has two dimensions are: competency and effectiveness.
5. **Questionnaire validity:** using Cronbach's Alpha coefficient.

Table 1. Questionnaire validity coefficient

Cronbach's alph	Number of elements
0.847	42

Source: by researchers adapted from **SPSS19** program

Coefficient cronbach's alpha validity it is 0.847 more than 60% the questionnaire is stable and valid.

Two: Results Analysis Data have been analyzed the sample individuals answers are (Table 2):

1. Personal information analysis:

Table 2. According to gender

Percent %	Frequencies	Gender
40	08	Males
60	12	Females
100	20	Total

Source: by researchers adapted from **SPSS19** program

Percent 40% the (Table 3) number of males is 08 with The number of girls is 11 with 55% over 5% so females form the predominant side in this study sample.

Table 3. According to age

Age	Frequencies	Percent %
30	6	Under the age of 35
50	10	From 35 to 45 y.o
20	4	More than 35 y.o
100	20	Total

Source: by researchers adapted from **SPSS19** program

We notice that the predominant category is (from 35 to 45 y.o) over 50%, then the category of under the age of 35 over 30%, next more than the age of 45 over 20%, so the majority of employees in Algeria telecommunication agency (Bechar) are young (Table 4).

Table 4. According to academic level

Academic degree	Frequencies	Percent %
10	2	Primary and less
35	7	Secondary
45	9	University
10	2	Post graduation
100	20	Total

Source: by researchers adapted from **SPSS19** program.

We notice that the predominant category is the category of undergraduate in the rate of 45%, then the category of secondary in the rate of 35%, so the institution makes sure of hiring people with high competency level and good capacities (Table 5).

Table 5. According to position

Percent %	Frequencies	Position
10	2	Vice-manager
5	1	Head of department (division)
25	**5**	Chief of section
15	3	Principal administration assistant
30	6	Administration assistant
15	3	In charged of studies
100	20	Total

Source: by researchers adapted from **SPSS19** program

We notice that the sample contains 20 employees in the institution from different positions. Administration assistant is the largest proportion in the rate of 30%.

The analysis of sample individuals answers

The results of this sample were as follows (Table 6):

2.1 The independent variable (intelligent leadership)

Table 6. Elasticity treating

Result	Standard deviation	Arithmetic average	Strongly objector	Objector	Neutral	Agree	Strongly agree	Number
Strongly agree	1.09904	4.4500	01	01	00	04	14	1
Strongly agree	0.98809	4.3500	00	02	01	05	12	2
Strongly agree	1.00292	4.3158	00	02	01	05	11	3
Agree	0.97032	3.9474	00	02	03	08	06	4
Agree	0.69585	4.2000	00	00	03	**10**	**07**	5
Strongly agree	0.71328	4.7895	00	01	00	01	17	6
Strongly agree	0.94451	4.5500	00	02	00	03	15	7

(*continued*)

Table 6. (*continued*)

Result	Standard deviation	Arithmetic average	Strongly objector	Objector	Neutral	Agree	Strongly agree	Number
Strongly agree	0.92338	4.3000	00	01	03	05	11	8
Strongly agree	0.97872	4.3000	00	02	01	06	11	9
Agree	0.97333	4.0000	00	02	03	08	07	10
Agree	1.05006	3.9500	00	03	02	08	07	11

Source: by researchers adapted from **SPSS19** program

We notice that the majority of employees answered with "strongly agree" so they are satisfied with the treatment that the institution leadership followed, so that they will perform better (Table 7).

Table 7. Solving problems and conflicts

Result	Standard deviation	Arithmetic average	Strongly objector	Objector	Neutral	Agree	Strongly agree	Number
Strongly agree	0.76089	4.5000	**00**	**01**	**00**	**07**	**12**	**17**
Strongly agree	1.08094	4.3000	01	01	00	07	11	18
Strongly agree	0.88704	4.4500	00	01	02	04	13	19
Strongly agree	0.76777	4.2000	00	00	04	08	08	20
Strongly agree	0.60481	4.5500	00	00	01	07	12	21
Agree	0.87509	4.1500	00	01	03	08	08	22
Strongly agree	0.92338	4.3000	00	01	03	05	11	23
Strongly agree	0.85070	4.2500	00	01	02	08	09	24
Strongly agree	0.94451	4.0500	00	01	05	06	08	25

Table 7. (*continued*)

Result	Standard deviation	Arithmetic average	Strongly objector	Objector	Neutral	Agree	Strongly agree	Number
Strongly agree	1.05631	4.2000	00	02	03	04	11	26
Strongly agree	1.08942	3.8500	00	02	07	03	08	27

Source: by researchers adapted from **SPSS19** program

We notice that the employees answered with "strongly agree", so they are satisfied with the ways of solving problems by leaders, so that their right are always preserved. And that makes them perform better (Table 8).

Table 8. Motivate employees

Result	Standard deviation	Arithmetic average	Strongly objector	Objector	Neutral	Agree	Strongly agree	Number
Strongly agree	1.11869	4.1579	**00**	**03**	**01**	**05**	**12**	**10**
Strongly agree	0.76089	4.5000	**00**	**00**	**03**	**04**	**13**	**13**
Strongly agree	0.58714	4.6500	**00**	**00**	**01**	**05**	**14**	**14**
Strongly agree	0.68633	4.5500	**00**	**00**	**02**	**05**	**15**	**13**
Strongly agree	0.65695	4.7000	**00**	**00**	**02**	**02**	**16**	**16**

Source: by researchers adapted from **SPSS19** program

We notice that the employees answered with "strongly agree" this confirms that the leaders motivate the employees in Algeria telecommunication Agency (Bechar). So that getting a better performance (Table 9).

The Dependent Variable

Table 9. The outstanding performance of employees

Result	Standard deviation	Arithmetic average	Strongly objector	Objector	Neutral	Agree	Strongly agree	Number
Strongly agree	1.10501	4.2000	00	03	01	05	28	11
Strongly agree	0.58714	4.6500	00	00	01	05	29	14
Strongly agree	0.86450	4.3000	00	01	02	07	30	10
agree	0.85224	4.1000	00	01	03	09	31	07
agree	0.99868	3.9500	00	02	04	07	32	07
Strongly agree	1.02084	3.9000	00	02	05	06	33	07
agree	0.87509	4.1500	00	01	03	08	34	08
Strongly agree	0.96791	4.1000	00	01	05	05	35	09
agree	1.05006	3.9500	00	03	02	08	36	07
Strongly agree	0.98809	4.1500	00	02	02	07	37	09

Source: by researchers adapted from SPSS19 program

We notice that the employees answered with "strongly agree", so they see that leaders in this institution work to increase the effectiveness of the outstanding performance.

THRE: Examine Hypotheses and the Degree of Connection Between the Variables: 1. **Principal hypothesis:** The intelligent leadership influences the increasing effectiveness of the outstanding performance of employees in the institution of Algeria telecommunication (Table 10).

This table shows that correlation coefficient Pearson R = 0.571 in rate of 75.1%, so there is medium positive correlation between smart leadership and the outstanding performance. But $0.326 =$ r-two which is equivalent to ratio 32.6% this is the influencing rate of the smart leadership on the outstanding performance of individuals. The rest is back to other factors, sig $= 0.000$ value is less than the significance level 0.005, so it means accepting the alternative hypothesis H1: there is a statically significant effect on the outstanding performance of employees in that institution (Bechar) (Table 11).

The Regression Equation is $Y = 0.406X + 1.954$

Table 10. The linear regression coefficient between smart leadership and the effective performance of individuals

Dependent variable: individuals outstanding performance						Independent variable
Proving hypothesis	Sig	Determintion coefficient R^2	Correlation coefficient R	Stability coefficient B	Regression coefficient a	Intelligent leadership
H1	0.000	0.326	0.571	954,1	0.406	Result

Source: by researchers adapted from **SPSS19** program

Table 11. The linear regression coefficient between smart leadership and the effective performance of individuals

Dependent variable: individuals competency						Independent variable
Proving hypothesis	Sig	Determination coefficient R^2	Correlation coefficient R	Stability coefficient B	Regression coefficient	Intelligent leadership
H1	0.032	0.341	0.584	2.160	0.572	Result

Source: by researchers adapted from **SPSS19** program

This table shows that the correlation coefficient Pearson R $= 0.584$ in the rate of 58.4%, it means there is a medium positive correlation between smart leadership and the effectiveness of employees. The rest is back to other factors. Sig $= 0.032$ value is less than significance level 0.005 it means accepting the alternative hypothesis H1: there is a statically significant effect on the effectiveness of employees in the same institution (Bechar) (Table 12).

$$\text{The regression equation is :}\quad Y_1 = 0.572X_1 + 2.160$$

This table shows that the correlation coefficient Pearson R $= 0.584$ in the rate of 58.4%, it means there is a medium positive correlation between smart leadership and the effectiveness of employees. Which is equivalent to ratio 34.1% this is the influencing rate of the smart leadership on the effectiveness of employees. The rest is back to other factors. Sig $= 0.005$ value is less than significance level 0.005 it means accepting the alternative hypothesis H1: there is a statically significant effect on the effectiveness of employees in the same institution (Bechar).

$$\text{The regression equation is :}\quad Y_1 = 0.451X_1 + 2.160$$

Table 12. The linear regression coefficient between smart leadership and the effectiveness of individuals

Dependent variable: effectiveness of employees						Independent variable
Proving hypothesis	Sig	Determination coefficient R^2	Correlation coefficient R	Stability coefficient B	Regression coefficient	Intelligent leadership
H1	0.005	0.210	0.458	2.160	0.451	Result

Source: by researchers adapted from **SPSS19** program

Conclusion: Applying the intelligent leadership becomes an absolute necessary point. Because it is among the strategic profession in new businesses foundations. In order to achieve growth, success and development. Therefore the main role of the intelligent leadership is to set appropriate conditions, in addition paying attention to employees by motivating and training them to do their best. So they can build up their experience and move to the next level.

First: Study Results: after the field study that has been done on a sample of employees in Algeria Telecommunication Agency (Bechar), a set of important results have been achieved. Results are:

– Employees see that the leaders of that institution in Bechar, have elasticity in dealing with them, as well as the ability of solving problems inside the institution. Moreover they work to motivate them and this is what makes them satisfy. So employees develop their performance directly.
– The intelligent leadership practices influence both competency and efficiency of employees in average in this agency. Yet there are other factors lead to increasing the outstanding performance of employees in Algeria Telecommunication Institution.
– The smart leader's interests are in developing and improving the capacities of employees. According to what the institution needs. So working on increasing employee's competency which helps them to develop their performance.
– Algeria Telecommunication institution enhances the performance of employees through promotions. In which they can stand as candidates inside the institution. Furthermore they can get the preference in that.

Second: The study suggestions: In this paper some suggestions can be represented for this institution, suggestions are: forming, training leaders, in order to advancing their leading skills and their effective performance in the institution.

Leader skill must be developed in this institution. Leaders should know how to deal with employees, each according to his/her capacity and competency. Also working on harmonizing employees efforts in order to improve their experience.

The necessity of discussion and negotiation between leaders and employees, so that to exchange views and ideas. In addition to establish organizational objectives.

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Estimating Women Entrepreneurial Empowerment of Start-Up Business Through Micro Credit Model in Rural Areas

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Abstract. Micro enterprises have been classified into various categories which includes cultivation of food grains, fruits, flowers, seed production, mushroom cultivation and also the livestock economic activities such as dairy farming, poultry, and production of cow dung. The rural women also engaged in home-based economic activities such as stitching, weaving, petty trades, embroidery, food preparation and processing. The role of start-up business through the accessibility of microcredit by rural women has encourages entrepreneurial and economic empowerment. In this backdrop, the present paper is aims to establish the role and significance of microfinance to empower women in rural areas. It also attempted to study entrepreneurial empowerment of rural women through the start-up business with access of formal bank loans. This study also measures the significant contribution of bank linkage programme in incorporating the start-up among the women self-help group members. Main purpose of this paper is to emphasise the role and significance of microfinance to empower women in rural areas. It also aims to promote the self-employment opportunities among the rural women through the start-up business with access of formal bank loans. This study is follows the empirical research method to evaluate the economic empowerment and livelihood of rural women. Data collected through direct survey method from the rural women self-help group who engaged in start-up businesses from India. A structured questionnaire was framed and distributed to forty sample respondents to collect the information. Stratified random sampling method was adopted to collect the sample responses from the total population. It shown that there was good positive change in income after the microfinance access and start-up. It also encourages the entrepreneurial skills of the rural women. The all other significant variables such as expenditure, savings, borrowings and training have also had a tremendous positive change after availed microcredit from bank linkage programme. On the whole, the economic empowerment of rural women has been enhanced due the start-up business through the microcredit model.

Keywords: Women · Entrepreneurship · Empowerment · Start-ups and Microcredit

1 Introduction

India is having the estimated start-ups of 26000 units, recorded as the third largest in start-up structure across the globe. The nations start-up structures have been tremendously growing in the recent years with private capital including seed, angel equity fund, and venture capital (David et al. 2020). The entrepreneur is an investor or the person who accumulates the various factors for the purpose of production. Entrepreneurship is meant as the act of arranging a start-up or refining the existing business (Gupta and Kumari 2014). Empowerment of women is emerged as a significant area in the recent economic situation (Fazalbhoy 2014; Zhang et al. 2021). Women is termed as an important and unique economic contributor in the society. In the modern world, the women are coming out from the walls of obstacles to participate in economic activities especially in self-employment through entrepreneurship. (Dwivedi and Mishara 2013; Fuster-Guillén et al. 2020). Micro enterprises have been classified into various categories which includes cultivation of food grains, fruits, flowers, seed production, mushroom cultivation and also the livestock economic activities such as dairy farming, poultry, and production of cow dung. The rural women also engaged in home-based economic activities such as stitching, weaving, petty trades, embroidery, food preparation and processing. The role of start-up business through the accessibility of microcredit by rural women has encourages entrepreneurial and economic empowerment.

In this backdrop, the present paper is aims to establish the role and significance of microfinance to empower women in rural areas. It also attempted to study entrepreneurial empowerment of rural women through the start-up business with access of formal bank loans. This study also measures the significant contribution of bank linkage programme in incorporating the start-up among the women self-help group members.

Objectives
To highlight the significance of micro-finance for entrepreneurial development of women in rural areas.

To estimate the economic status of the women in rural areas.

To exemplifying income and expenditure before and after the access of microcredit through bank linkage programme.

To examine status of saving and borrowing of rural women before and after access to bank's microcredit.

To suggest appropriate policy requirements to uplift the women livelihood to next level.

2 Purpose of Study

Main purpose of this paper is to emphasise the role and significance of microfinance to empower women in rural areas. It also aims to promote the self-employment opportunities among the rural women through the start-up business with access of formal bank loans. The bank linkage programme is also playing a key role in incorporating the start-up among the women self-help group members.

This study is conducted in rural areas because of India has more population in villages. The rural population consist of 68.64% and the urban population consist of

31.16 percent as per census 2011 data. So, this study is aims to bring out the women entrepreneurial development in rural areas.

Features of Microfinance
Integral segment for the rural finance.

It provides loan for the rural people especially to women in a tiny quantum.
It generates more self-employment activities in village level.
One among the most impactful poverty alleviation tool.
Works with small groups through self-support mechanism.
Rare repayment faults from the rural borrowers.

Literature Review
The country could not bring prosperity without having entrepreneurs through start-up businesses. The prospects of India are based on the newer technology, innovation and creativity from young minds. The start-up in our country is an ingenuity of Indian government to establish a strong and sound environment for start-up business in the nation (Chatterjee 2019).

Micro Credit
The influence of agricultural and rural credit schemes is well evident in promoting the both farmers and non-farmers in rural areas (Afrin et al. 2008) Microcredit scheme is become a key tool to removal of poverty and enhancing empowerment of rural people especially women in India. SHG model with institutional lending to the rural women without any security has become an important element in rural financial system. In addition to that the SHG model through the microcredit financial support, helps to promote the human development in India (Sankaran 2005; Ramírez et al. 2019).

The significant aim of microcredit scheme is to promote the financial accessibility to poor women in rural areas. The loans were provided to generate start-ups in the rural areas. It leads to reduce the loans availing from local money lenders with high rate of interest (Puhazhendhi and Badatya 2002).

Factors behind the Growth of Start-ups
Promoting an appropriate business structure with proper pyramid: During the phase of start-ups, the initiators will do all arrangements on their own and lack any formal functional system as people are lower in numbers and wholly under the system of founders. While, they grow in their business, new issues will raise. During those times, defining the roles of the respective operational activities will become crucial in the business. The various activities of the business to be allocated based on the departments such as sales, marketing, innovation, finance, accounts, human resource, controls and production.

Entrepreneurial Empowerment of Women in Rural Areas
Entrepreneurship is a creativity and innovativeness to the business environment for growth and development enterprise. This could take place in various fields of business, agriculture, industries, corporates, education and society. The promotion economic growth is also lies with the entrepreneurial development through enhancing investment (Lal and Celement 2005).

The women are started increasingly turning to entrepreneurial economic activitiesto contribute in generating income and creating avenues for employment opportunities (Das 2001).

The perception of entrepreneurship has a wide range of understanding. It has been viewed and debated among various scholars, researchers, policy makers and educators since 1700s (Afrin et al. 2008). Promotion of women empowerment is become crucial for the growth and development of developing countries. In this process, microfinance scheme is the powerful and potential instrument of social and economic change of women (Parvin 2017).

The role of women as entrepreneur is crucial for the growth and development of the economy. The young and energetic entrepreneurs are highly required for promoting the nation's gross domestic product and employment. Even now, the Indian entrepreneurship is driven through the small and petty trades and businesses (Shambunath 2021).

Women entrepreneurs facing multi-dimensional challenges in the business their activity such as personal constrains, social constraints and financial constraints (Chunera 2020).

The economic empowerment of women through entrepreneurial development is the basic for strengthen the rights of the women and enhance them to equip their living standard and influence in the society (Shabana et al. 2017; Ramírez et al. 2020).

Women comprise almost fifty percent of total human resource and women have been recognized as key source for the economic development. The economic contribution of women for the family and the nation is essential for the economic transformation of women. In this context, the microfinance is working as key element in enhancing the tiny scale of operations in the rural areas in India to alleviate poverty. It is helpful in removal of poverty and gender inequality among the rural population. This microcredit facility is driven through the self-help groups. The major scope of the micro enterprises in the rural area to encourage employment opportunities among the rural women (Geetha 2014; Shaikh et al. 2022).

3   Methodology

This paper aims to emphasise the role and significance of microfinance to empower women in rural areas. It also aims to promote the self-employment opportunities among the rural women through the start-up business with access of formal bank loans. The bank linkage programme is also playing a key role in incorporating the start-up among the women self-help group members. This study is follows the empirical research method to evaluate the economic empowerment and livelihood of rural women. Data collected through direct survey method from the rural women self-help group who engaged in start-up businesses from India. A structured questionnaire was framed and distributed to forty sample respondents to collect the information. Stratified random sampling method was adopted to collect the sample responses from the total population. Collected information has been tabulated and analysed with statistical instruments such as descriptive statistics and paired t-test.

4 Results and Discussion

This segment of the paper encompasses the descriptive statistics of primary data. The average income of the respondent was 162.50 rupees per day was recorded. While, after joined in to the SHG linked microfinance scheme, the daily income has enhanced to 288.75 rupees. More than 75 of income has grown due to start-up business through microcredit. With respect to expenditure, there was an increase from 141.25 rupees to 232.50 rupees before and after the start-up. The mean savings have also doubled after the microcredit availability. Most importantly, loans have raised from Rs. 2612.50 to Rs. 11825 due to the availability of microcredit loans with lesser interest rate (Table 1).

Table 1. Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Income before MF	40	100	400	162.50	107.864
Income after MF	40	200	500	288.75	107.708
Expenditure before MF	40	100	300	141.25	74.151
Expenditure after MF	40	200	350	232.50	48.767
Savings before MF	40	0	100	21.25	37.361
Savings after MF	40	0	250	56.25	82.577
Borrowings before MF	40	500	8000	2612.50	1478.424
Borrowings after MF	40	5000	30000	11825.00	5052.988
Valid N (list-wise)	40				

MF: Microfinance

The Table 2 emphasises that the correlation between the economic variables before and after the inclusion of microcredit (Table 3).

Table 2. Paired samples correlations

		N	Correlation	Sig.
Pair 1	Income before MF & Income after MF	40	.757	.000
Pair 2	Expenditure before MF & Expenditure after MF	40	.488	.001
Pair 3	Savings before MF & Savings after MF	40	.662	.000
Pair 4	Borrowings before MF & Borrowings after MF	40	.011	.945
Pair 5	Training before MF & Training after MF	40	0.700	.000

The above table exhibits the paired t-test statistics of the sample data. The calculated t-value for paired variable namely income before and after is −10.633 with 39 as degrees of freedom with 0.000 level of significance. It shown that there was good

Table 3. Paired samples test

		Paired differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Income before MF – Income after MF	−126.250	75.096	11.874	−150.267	−102.233	−10.633	39	.000
Pair 2	Expenditure before MF – Expenditure after MF	−91.250	65.913	10.422	−112.330	−70.170	−8.756	39	.000
Pair 3	Savings before MF – Savings after MF	−35.000	64.251	10.159	−55.549	−14.451	−3.445	39	.001
Pair 4	Borrowings before MF – Borrowings after MF	−9212.500	5248.794	829.907	−10891.146	−7533.854	−11.101	39	.000
Pair 5	Training before MF – Training after MF	.825	.385	.061	.702	.948	13.559	39	.000

positive change in income after the microfinance access and start-up. It also encourages the entrepreneurial skills of the rural women. The all other significant variables such as expenditure, savings, borrowings and training have also had a tremendous positive change after availed microcredit from bank linkage programme.

Major Challenges for the Rural Women Entrepreneurs

Lack of educational attainment.
Domination of male in entrepreneurial activity.
Societal barriers.
Non-availability of funds for self-employment.
Heavy competition.
Lack of training and motivation.

Findings of the Study
The rural women are facing many challenges in generating income due to non-availability of jobs or seasonal unemployment. Self-help group activities are encouraging the rural women to generate self-employment activities with the financial support from micro-credit schemes. Income, expenditure, savings and borrowings for investment have been

increased excessively through small size start-up business. The average income of the respondent was 162.50 rupees per day was recorded. While, after joined in to the SHG linked microfinance scheme, the daily income has enhanced to 288.75 rupees. More than 75 of income has grown due to start-up business through microcredit. With respect to expenditure, there was an increase from 141.25 rupees to 232.50 rupees before and after the start-up. The mean savings have also doubled after the microcredit availability. Most importantly, loans have raised from Rs. 2612.50 to Rs.11825 due to the availability of microcredit loans with lesser interest rate. In addition to that the SHG model through the microcredit financial support, helps to promote the human development in the rural areas. The income earning capacity has increased enormously after the financial accessibility of women through microcredit.

5 Conclusion

Micro enterprises have been classified into various categories which includes cultivation of food grains, fruits, flowers, seed production, and mushroom cultivation and also the livestock economic activities such as dairy farming, poultry, and production of cow dung. The rural women also engaged in home-based economic activities such as stitching, weaving, petty trades, embroidery, food preparation and processing. The role of start-up business through the accessibility of microcredit by rural women has encourages entrepreneurial and economic empowerment. Entrepreneurship is a creativity and innovativeness to the business environment for growth and development enterprise. This could take place in various fields of business, agriculture, industries, corporates, education and society. The promotion economic growth is also lies with the entrepreneurial development through enhancing investment. The average income of the respondent was 162.50 rupees per day was recorded. While, after joined in to the SHG linked microfinance scheme, the daily income has enhanced to 288.75 rupees. More than 75 of income has grown due to start-up business through microcredit. It evidences the delivery of entrepreneurial ability and self-employment skills of women in the rural area. It is also revealing the financial empowerment of rural women through microfinance model With respect to expenditure, there was an increase from 141.25 rupees to 232.50 rupees before and after the start-up. The mean savings have also doubled after the microcredit availability. Most importantly, loans have raised from Rs. 2612.50 to Rs.11825 due to the availability of microcredit loans with lesser interest rate. It shown that there was good positive change in income after the microfinance access and start-up. It also encourages the entrepreneurial skills of the rural women. Economic status of the rural women has considerably enhanced with their income, expenditure and saving pattern. The all other significant variables such as expenditure, savings, borrowings and training have also had a tremendous positive change after availed microcredit from bank linkage programme. Based on the statistical analysis, it realises that the income of women in rural areas have been increased in a considerable level of growth. Savings recorded a vital growth along with spread of formal loans among the rural women and it supported a lot for

entrepreneurship. On the whole, the economic empowerment of rural women has been enhanced due the start-up business through the microcredit model.

Policy Suggestions for the further Promotion of Women Entrepreneurship in Rural Areas

Infrastructure requirements to fulfill.
Easy and flexible creation and availability of formal loans.
Assistance for training and development.
Creation of awareness regarding the entrepreneurial avenues among the rural women.

Limitations of Study

This study is limited to cover the status of rural women, it can be further expanded to urban areas as well.
This research work is discussed with the representation of smaller sample size for representation. There is a wide scope for expansion of study with larger sample sizes.

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From Intentions to Actions: Exploring the Entrepreneurial Journey of Syrian Refugees in Istanbul

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Abstract. The issue of entrepreneurial activity among refugees has not been discussed in detail in previous studies, although the entrepreneurial potential of refugees is generally acknowledged. This article aims to explore the entrepreneurial journey and entrepreneurial experience of Syrian refugees in Istanbul. The study employs an exploratory phenomenological approach, contextualized in the entrepreneurial behavior literature. The data were collected through semi-structured interviews with 15 Syrian entrepreneurs living in Istanbul. This paper uncovers the importance of entrepreneurial behavior in indicating asylum experience and how experience accumulated by individual immigrants affects perceived behavioral control and entrepreneurial viability. Furthermore, the article provides some practical and social contributions by highlighting how the entrepreneurial behavior of Syrian refugees is driven by their immigration or business experience.

Keywords: Entrepreneurial intention · Entrepreneurial behavior · Refugee entrepreneurship · Self-employment · Syrian refugees

1 Introduction

Over the past decade, human migration waves have attracted global attention socially, politically, and academically. As a result, many countries have been receiving an increasing number of asylum applications from individuals forced to flee their homes due to war and political unrest. Turkey, in particular, has experienced the highest numbers of Syrian refugees escaping from the ongoing civil war. As of June 2021, UNHCR in Turkey registered 3,710,532 Syrian refugees, making up 64.7% of the total Syrian refugees in neighboring countries and 3.5% of Turkey's population (UNHCR 2021). Out of these millions of Syrians who have called Turkey home for the last few years, 15% reside in Istanbul due to its environmental munificence in the context of business, work, and culture. Moreover, Istanbul offers a greater chance of survival than Ankara, Gaziantep,

Mersin, and Adana, although these southern states are near the Syrian-Turkish borders (UNHCR 2021).

The formal refugee process in Turkey permits individuals to live under the Temporary Protection Act. The process is identified with the *Kimlik* cards, including a unique serial number and a registered address for all applicants. However, many Syrian comers could obtain work or tourism visas that allow them to move freely around the country and apply for work permits. Thus, many of these individuals have arrived independently via the Syrian-Turkish borders and reside in various Turkish cities and towns. In contrast, a minority of nearly 56,000 individuals remain in refugees' camps near the borders (UNHCR 2021), mainly for political and security reasons. This paper will focus on Syrians residing in Istanbul and holding either Kimlik cards, touristic, or business visas.

The novelty of refugees' economic activities was investigated earlier in the 20th century by scholars who had studied the ethnic Asian businesses in North America (e.g., Portes and Sensenbrenner 1993; Gold 1988). Recently, researchers have shown an increased interest in the refugees' economic lives in various social, financial, geographical, and political contexts (Beehner 2015; Bizri 2017; Hamdan et al. 2022). The existing body of research suggests that refugees face distinctive challenges when seeking employment in their "host" country (Garnham 2006). These challenges may include discrimination, language barriers, unrecognized (or downgraded) qualifications, and skills gaps, resulting in unemployment and underemployment (Vinokurov et al. 2017). Therefore, refugees are often considered "pushed" into entrepreneurial activity to support themselves financially and their families, increase their financial security, and minimize their dependence on the welfare system (Garnham 2006).

Although explaining the decision to involve in entrepreneurial activity is a critical question (Liñán and Fayolle 2015), what remains unclear is how refugees may decide to engage in entrepreneurial activity (Mawson and Kasem 2019). In particular, there is little understanding of how refugees transform their entrepreneurial intentions into actions, as in many cases, intent does not result in new ventures (O'Gorman 2019). The latter is considered the intention-action gap (Van Gelderen et al. 2008). Therefore, Turkey would offer a natural laboratory to understand better the entrepreneurial journey of Syrian refugees.

As a result, this study aims to explore the dimensions of the entrepreneurial experience within a group of fifteen Syrian refugees who have already established businesses in Istanbul. Drawing on data collected using interpretive phenomenological analysis, this paper specifically focuses on the following research questions:

RQ1: How was the entrepreneurial journey from intentions to the actions of Syrian refugees in Istanbul?
RQ2: What were the primary enablers and barriers related to the entrepreneurial experience of Syrian refugees in Istanbul?

This paper makes several empirical and theoretical contributions to the literature. First, it makes a significant empirical contribution to the refugee entrepreneurship literature by exploring why refugees choose to self-select into entrepreneurship. Second, it makes a significant theoretical contribution by identifying the link between entrepreneurial intention and entrepreneurial behavior. Lastly, this paper unveils how

individuals' perceived capabilities play a role in shaping intentions which these are very much influenced by lived experience, particularly refugees' personal migration experiences.

This paper proceeds as follows. Section 2 briefly reviews the literature on refugee entrepreneurship and entrepreneurial behavior. Section 3 describes the methodology used in this research. Section 4 discusses the findings, and finally, conclusions and future research are presented.

2 Literature Review

Since the issue of refugees and their increasing number has gained global attention during the last decade, many studies have addressed the topic of migrant entrepreneurship based on its multi-dimensional nature (Desai et al. 2021; Honig 2020). The recent increase in immigrants' influx towards developed and other developing countries has caused scholars to go the extra mile to study this phenomenon since contributions to these economies are noticeable by adding value to the labor market or through entrepreneurship. This section aims to shed light on the predominant entrepreneurial behavior models and factors impacting refugees' entrepreneurships including entrepreneurial behaviors.

2.1 Entrepreneurial Behavior Models

Any entrepreneurial business requires massive efforts, personally and contextually, to be ordained to achieve a determined process of decision making (Sadler-Smith and Shefy 2004). This also supports the idea of Zhao and Smallbone (2019) that an individual does not overstain one-self randomly and recklessly. At the same time, the intention of an individual is considered a temperament since it impacts the actions and deeds. Scholars such as Shapero and Sokol (1982) and Ajzen (1991) identified models relating behaviors to intentions. The entrepreneurial event model (EEM) of Shapero and Sokol (1982) postulated that the resolution to start a new venture perceives feasibility, desirability, and tendency to act. A similar approach was coined in the theory of planned behavior (TPB) of Ajzen (1991) with regards to individuals' attitudes. The perceived behavioral control is meant to reflect the level of difficulty in performing the behavior in EEM, while perceived desirability was reflected in EEM as the favorability of individuals towards behaviors in TPB (Warburton and Terry 2000). Among the aforementioned three theoretical models, intentions predict behaviors and they have been derived from attitudes in parallel, which are impacted by external factors at the same time. Ajzen (2005) depicted that attitude can be also affected by individual factors such as values, knowledge, experience, and demographic environment, while Liñán and Fayolle (2015) termed that TPB maintains to be a prevalent model in place for entrepreneurial behavior research.

On the other hand, scholars have identified certain gaps in the novelty of entrepreneurial behavior models (EEM and TPB) as they may not completely signify the intricacy of cognitive processes, personal drivers, and motivations. Mawson and Kasem (2019) justified that most of the existing literature on entrepreneurial behavior has adopted a positivist methodology patterned on massive quantitative data and ignored

unique responses from individuals based on their own stories. These entrepreneurial behavior models have received further criticism for lacking dynamism and inability to have a clear direction rather than benefitting from evolving interpretations of individual's responses whereby experience impacted behavior directly (Van Gelderen et al. 2008). Hence, it is important to adopt an interpretivism approach in exploring entrepreneurial behaviors of refugees to ensure having a wider view based on own stories and experiments.

2.2   Refugees Entrepreneurship Factors

The economic livelihood of refugees has been notable in the novelty of entrepreneurship during the 1980s when scholars explored the initiatives of ethnic minorities in the US (Volery 2007). In the last decade, the research scope has extended to comprise various perspectives such as policymaking, economic development, contribution to the host country, social capital and ethnic identity and innovation (Robinson 2016; Betts et al. 2017). This variance is essential, particularly for policymakers, to allocate the suitable resources to accommodate entrepreneurial refugees' initiatives rather than solely depending on skilled immigrants' influx.

   The novelty of refugees' entrepreneurship has been primarily built on a few theories including the self-selection theory (Borjas 1987), the theory of labor market disadvantage (Light 1979), and the blocked mobility thesis (Cormier 2003). This factor justifies how refugees were shoved into entrepreneurship by external "push" factors rather than being dragged by internal or personal "pull" factors such as motivation and desire (Constant and Zimmermann 2005). Nevertheless, the push and pull factors of refugees' self-employment may differ and vary based on the context and the location as the conditions in first asylum countries may restrict refugees from freedom of movement or provide the right to work (Refai et al. 2018). In the Turkish context, Syrian refugees have the right to work but strictly in the same registered state and enjoy social and health insurance, however, their freedom of movement is framed with the ability to travel inter-state upon authorities' permission. However, the push and pull factors of Syrian entrepreneurs in the Turkish context may differ from other contexts where refugees enjoy different schemes of assistance.

   Even though the novelty of refugees and entrepreneurship has a deep route and mutual meeting point, the self-selection of entrepreneurship for refugees has been discarded. Many scholars narrated various probabilities of refugees' entrepreneurial behavior as some have been self-employed back home before their resettlement in the new host country, while some have not been self-employed but qualified and skilled to be an entrepreneur (de Lange et al. 2021), and the rest remain high family values and maintain good connections with the society at home to support them financially. Eventually, many scholars illustrated the need to explore the drivers of entrepreneurial behavior among refugees (Mawson and Kasem 2019).

2.3   Entrepreneurial Behavior of Refugees

The novelty of refugee entrepreneurship stipulates that the entrepreneurial behavior of refugees and migrants needs to be explored furtherly to understand the economic

dimensions of these ventures (Desai et al. 2021). Generally, the theory of migration, or as a phase in individuals' life, indicated that it is a series of personal events that form impact individuals' tendency to migrate pre and post their decision (Lee 1966). This point of time may also be impacted by how vulnerable and depressed migrants can be, namely for those moving into a minor ethnic group in a new environment (Bhugra and Ayonrinde 2004). In this regard, a few pieces of research have revealed the core of entrepreneurial behavior in terms of oneself experience including behavioral and attitudes variances. The argument highlights that the dynamic constraints of entrepreneurial individuals exist throughout the life path, while other scholars argued that entrepreneurial motives vary over time (Carsrud and Brännback 2011). This paper aims to attempt to fill this gap by exploring the entrepreneurial behavior of Syrian refugees in Istanbul based on their own various experiences. This considers providing deeper insight into the recent phenomena of migration novelty that hit the Syrian people.

3 Methodology

This paper has been constructed on data collected as a component of broader research on the integration of Syrian refugees in Turkey during the Syrian conflict. This specific research was developed due to the need to furtherly explore the entrepreneurial behavior based on the early data collected. The paper adopts an exploratory phenomenological research design to allow the researchers to explore the experiences of participants within an individual context, and to engage with participants in understanding emotional and interactions (Wilding and Whiteford 2005). This approach showed a close relevance when exploring individual experience in the context of asylum and entrepreneurship (Schweitzer and Steel 2008).

3.1 Sampling and Data Collection

As a non-probability technique embedded in the explorative phenomenological app-roach, the participants were selected based on purposive sampling (Etikan et al. 2016). The participants represent small and medium enterprises that were established in Istanbul by Syrian entrepreneurs from 2011 to date. All participants' contact details were provided by *İnsani Gelişme Vakfı* (INGEV) which is an NGO that assists Syrian entrepreneurs in establishing their enterprises till they start running their business. In such small orga-nizations, the managerial level and decision-making authority are centralized, which is directly related to the directors or proprietors of these enterprises. Thus, it was planned to meet with directors and proprietors directly to extract all valuable information within a shorter period. However, there was no countability on gender, age, or ethnic group since the objective of this study is to explore the understanding of entrepreneurship among the Syrian refugees, which is relatively new to the business environment in Turkey. Hence, the sample design carried on 15 Syrian entrepreneurs who have already obtained their business licenses in Turkey, with an in-depth focus on Istanbul since it hosts a high num-ber of Syrians compared to other states. Generally, the sufficiency of selected sample can be inspected based on the level of possibility to generalize the outcomes and the level of saturation that can be achieved. Therefore, it is suggested to cover no more than

15 cases (Perry 1998). Scholars urge to avoid maximizing the sample size for the sake of achieving wider generalization since it irrelevant to the essence of qualitative research (Denzin and Lincoln 2005).

3.2 Data Analysis

The analysis of data collected for this research was carried on based on the Three-Step Model of Data Analysis that includes data reduction, data display, and conclusion (Miles and Huberman 1994). This technique of data analysis ignites wide flexibility of transformation of qualitative data from textual transcriptions into graphical illustrations. This justifies the need to interpret documented opinions and impressions into a useful set of data that is collected from the Syrian entrepreneurs in Turkey. All data were analyzed using NVivo 12 software, but the volume of data and the limits of the paper did not allow to provide abundant details on the analysis process including codes and categories. Hence, we introduce a summary of data and highlight the relevant quotation wherever mentioned.

4 Findings

The concepts that arise from the data analysis were reflected on relevant models and theories from the literature. The data reflected on the literature will be referred to the EEM model of Shapero and Sokol (1982), and the TPB model of Ajzen (1991), besides the model of entrepreneurial refugees' barriers and enablers (de Lange et al. 2021). The interviews with the 15 participants were carried on three questions. Interview Question 1 asked the participants about the reason behind establishing a company in Turkey rather than getting employed, while Interview Question 2 seek the participants' opinions on the opportunity to start a business on their own. Thirdly, Interview Question 3 aimed to develop an understanding of the difficulty in establishing a company in Turkey for Syrians.

4.1 Perceived Behavioral Control

From the overall responses, it was noted that the 'tendency to be independent' is the most important factor that urged participants to establish a company in Turkey, while the second factor was being 'previously employed in Turkey'.

> *Finding 1.1: 'tendency to be independent', 'previously employed in Turkey', and 'used to have own business in Syria' are the major factors that urged Syrian entrepreneurs to establish their own business in Turkey.*

However, a third of the participants 'used to have own business in Syria' before the crisis. At the same time, factors such as 'inability to work under the supervision of others', 'stressful jobs' and 'unattractive jobs' were equally important to urge the participants to start up their establishments, while 'difficult to find a job in the field' and 'lack of work permissions' was slightly less than important than the previous group of factors.

Finding 1.2: Employment in Turkey is unattractive, stressful, and difficult for Syrian entrepreneurs due to the inability to work under supervision.

Finding 1.3: Difficult to work with the Turks due to limited creativity.

Lastly, 'difficult to work with the Turks' and 'limited creativity' did not mean much to most of the participants, while factors like 'currently employed in Turkey', 'lack of contacts', and 'control the quality and raw materials' were barely mentioned as each factor was described by one participant each. Generally, the reasons that participants described are mostly individual than situational.

4.2 Perceived Feasibility

In terms of the opportunity to start a business in Turkey, the major factors that participants highlighted during the interviews are the 'reliable partnership' followed by 'towards an independent future'. Most of the participants promoted independence in terms of the ability to make strategic decisions rather than reporting to a higher level of management as in employment, or through financial freedom. This is also reflected by the appraisal of reliable partnerships either it is a family venture or other Syrian or local partners.

Finding 1.4: Financial and strategic independence is as important as a reliable partnership to Syrian entrepreneurs.

On the other hand, the participants see the opportunity in establishing the business through 'introducing a unique concept', 'contacts gathering', 'the business as an opportunity', and 'ability to focus on specific markets'. The unique concept applies to the Turkish market itself or overseas markets through export, since some participants were able to focus on certain countries to market their products and services, mostly in GCC. However, many participants see the opportunity in the business nature or through gathering many contacts locally and internationally, which is done through their company in Turkey.

Finding 1.5: Opportunities come through unique business concepts and specific contacts or markets.

*Finding 1.6: Family needs and governmental influence as circumstances play a sig*nificant role in creating business opportunities.

It is important to shed light on less important views such as 'due to a family need', 'no other choices', and 'encouragement by the Turkish government' due to their unique approach. While some participants see the opportunity coming out of a family need, others appraise the support and encouragement that are introduced by the Turkish government.

4.3 Entrepreneurial Refugees' Barriers and Enablers

All participants highlighted various opportunities and challenges during the establishment stage. The significant major challenges varied from 'lack of understanding the laws' by Syrian newcomers, 'lack of transparent SOPs' from the Turkish government,

and 'difficult to deal with the local Turkish market' as a reflection on the first two responses.

Finding 1.7: Unclarity and opacity are the most crucial challenges to Syrian entrepreneurs in Turkey.

On a lower scale, participants confronted other types of challenges such as 'difficult to maintain a company over time' and 'officers' moodiness'. The difficulty in maintaining a company represents the high cost of operation including taxes that have to be declared regularly. Meanwhile, the moodiness of enforcement bodies negatively impacts Syrian businesses and is another indirect impact of the lack of transparent plans from the Turkish government. The least highlighted challenge was the 'country's instability', which refers to Turkey's political and economic turbulence that has started since the failed coup d'état attempt in 2016.

Finding 1.8: High cost of maintaining a company and law enforcement have negative impacts on Syrian businesses in Turkey.

Notwithstanding, the participants described the opportunities they have gained through their business establishment, despite the challenges that they confronted. The most highlighted opportunity is the 'ease in registering a company at first' since the registration process can be done in a day. This represents the Turkish government's initiative to attract foreign investors to invest and start businesses in Turkey.

Finding 1.9: Foreign investors, including Syrians, are able to register their companies in Turkey easily and conveniently.

On the other hand, participants mentioned that other major opportunities such as 'systematic taxes compared to other countries', 'special facilitation for Syrians', and 'start from the Arab market' are advantageous to their establishments, encouraging them to run the business smoothly compared to other countries, commonly in Europe.

Finding 1.10: Syrian entrepreneurs experienced special facilitation and systematic tax scheme compared to other European countries.

Even though, some participants added that 'tax exemption for start-ups' was also beneficial to them to enhance their profitability during the early stage of operation.

5   Discussion

The data presented provide important insights into the nature of the entrepreneurial experience of Syrian refugees in Istanbul. Furthermore, they demonstrate a complex interplay between factors that shape entrepreneurial intentions and actions. In this regard, Syrian entrepreneurs have shown that they prefer to start new ventures regardless of whether they have previously worked in Turkey or had businesses in their home country. Moreover, the refugee sample provides essential evidence that intentions in starting new ventures are positively associated with negative employment characteristics (Minns and

Rizov 2005). Therefore, Syrian refugees are being "pushed" to entrepreneurial activities due to Turkey's challenging employment environment.

We also find evidence that the refugees' sample positively associated with the educational level. The latest finding is in line with Ajzen's (1991) TPB theory, where entrepreneurial behavior can be affected by different individual factors such as knowledge level, educational background, or managerial and supervisory roles (Smith-Hunter 2008). Additionally, participants can find better opportunities to grow their business through effective partnerships. The preceding result is interesting because it shows that refugees can shift their motivation from necessity-driven to opportunity-driven entrepreneurs. Therefore, finding strategic business partners and targeting international clients can help refugee entrepreneurs accelerate business expansion (Building Markets 2018). In this respect, the Turkish government can play an essential role in promoting business services such as participation in trade fairs, advising from incubators, and encouraging investments from venture capital and angel investors.

Regarding the obstacles and favourable conditions refugees face, Syrian entrepreneurs revealed that all foreign investors, including Syrian nationals, are welcome to register their companies in Turkey smoothly and efficiently. In this regard, Syrian entrepreneurs enjoy special facilities, including tax exemptions and flexible labour laws. As a result, Syrian companies can contribute to the Turkish economy by hiring more labour (Syrian and local workforce). On the other hand, however, Syrian entrepreneurs describe challenges such as regulations ambiguity, high costs of maintaining companies, and, more recently, law enforcement. The previous obstacles may hinder entrepreneurs from growing their businesses (de Lange et al. 2021). Accordingly, the Turkish government should shift its services online to increase efficiency and reduce the number of regulations.

To sum up, the path of Syrian refugees from entrepreneurial intentions to actions shows a high degree of self-employment tendency. In particular, the findings are consistent with current literature suggesting that external factors such as government regulations can encourage refugees to start new ventures (Akcapar and Simsek 2018; İçduygu and Diker 2017). Therefore, we hope that the above discussion contributes to a better understanding of refugee entrepreneurship and better government policies.

6   Conclusions

This article provides further insights into the journey of the Syrian entrepreneurs in Istanbul and the asylum experience as an indicator of such entrepreneurial behavior. It also illustrates how personal experience affects the entrepreneurial intentions to start and run a business. The study's findings contribute to the growing literature on refugee entrepreneurship by highlighting the link between refugees' personal experience and starting new ventures.

The results show that Syrian entrepreneurs in Turkey have established their businesses to achieve financial independence. In addition, Syrian entrepreneurs who had previously worked in Turkey found working with locals is unattractive, stressful, and challenging, while others were unable to find jobs related to their educational field. Therefore, refugees were "pushed" to start new companies. On the other hand, the

results propose that Syrian entrepreneurs could exploit better business opportunities by targeting international markets or finding competent partners.

The previous findings have some practical implications for individuals, organizations, and policymakers in Turkey. In this regard, the Turkish government should pursue new policies that provide Syrian refugees more freedom to start and run their businesses. These policies may include easy access to the Turkish financial system or fewer regulations to obtain work permits. As a result, refugees will be more interested in joining the formal economy to contribute to the Turkish labor market.

The generalizability of these results is subject to certain limitations. First, the sample size of this paper is comparatively small, yet applying the same methodology in other geographic, environmental, or social contexts may not produce similar out-comes. Even within the Turkish context, the implications of this paper may not fully apply to Syrian entrepreneurs in other states, namely near the Syrian borders, due to the cultural and social gaps compared to Istanbul. However, there is room to further explore larger groups of refugees, mainly with a longitudinal approach to examine entrepreneurial behavior over time. Finally, the sample type in this research was not restricted to any variation in gender, religious beliefs, political affiliation, or ethnic background, as authors aimed to avoid any factors that may impact participants' responses. Despite its limitations, the study certainly adds to our understanding of entrepreneurial behavior and lays the groundwork for future research into the field of refugee entrepreneurship.

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Assessing Underlying Factors of Entrepreneurial Intention Among Young Saudis

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Abstract. Almost all country government, both emerging and developed, are encouraging young people to become self-sufficient by establishing their own enterprises. Many governments, such as the Kingdom of Saudi Arabia, have lucrative support programs in terms of business loans and other necessary services. Saudi Arabia is recognized as one of the world's oil leaders, but its foresighted government supports its young citizens to shift their attention to non-oil sectors through its ambitious Vision-2030 plan. In this context, the authors were interested in knowing about endogenous entrepreneurial factors which should be explored in a research format. Main objective of the research is to unearth the impact of such latent constructs which would strengthen the intentions of the young Saudis to commence their own business in future. Authors have judiciously prepared the variables after diligent literature review and opted to validate in this study. A convenient sampling technique was used, and 312 respondents from different colleges in the Al-Kharj region of Saudi Arabia were approached to fill out the questionnaire online. However, after meticulous elimination, 219 respondents were selected. Cronbach's alpha for reliability, AVE & CR for validity, Principal Component Analysis and Multiple regression modeling has been used in the study. MS-Office-365 and SPSS-21 were used for all statistical analysis. Despite of limitations listed, authors concluded that entrepreneurial attitude, entrepreneurial personality, self-efficacy, significant others, and perceived business viability are utmost essential ingredients which are not only positively correlated but also significantly explains the entrepreneurial intention of the respondents. According to the findings, almost all latent factors had a statistically significant impact on assessing the entrepreneurial intentions of young Saudis.

Keywords: Entrepreneurial intention · Entrepreneurial attitude · Entrepreneurial personality · Self-efficacy · Perceived business viability · Entrepreneurship

1 Introduction

'Don't wait till the iron is hot but make it hot by striking'; this statement of William B. Sprague indicates initiation and persistence required in achieving anything. Similarly, an entrepreneur is an individual who take initiatives to start a business endeavor

to serve the society by offering new products or services. The business venture may be small initially but can be expanded with more promoters into stake. Jean Baptiste Say (1767–1832) referred 'entrepreneurs' who fulfill a coordinating role in the economy [23]. Joseph Schumpeter (1833–1950) believed that industrial process undergoes a change constantly (creative destruction) and that economic innovation is achieved by means of new technologies and entrepreneurs [53]. An individual who recognizes an expectation of earning profit, power and/or prestige out of the willingness to take risk and responsibility by investing to combine means of production, is said to be an entrepreneur [39]. Since the element of uncertainty is there, so is the 'risk' involved. The risk undertaken is in expectation of generating profit in future. It is imperative to bear risk to be called as an entrepreneur [51]. All entrepreneurs must know to calculate risk, explore new sources of innovation, use creativity tool, and learn from the market [29]. An entrepreneur recognizes a commercial opportunity of converting an innovative product into a profitable venture [6]. Entrepreneurship is all about creating a new business endeavor [28]. Entrepreneurship is a process of engaging in an increase in production capacity and diversification of market [20]. Entrepreneurship is adominant driver of self-employment out of necessity, aiming for a sustainable economic development [37].

A glance of economic planning of Kingdom of Saudi Arabia (KSA) is inevitable from the perspective of Saudi Vision 2030 – a comprehensive directive plan (Vision 2030). This was framed in 2016, duly announced and pronounced by the Crown Prince Mohammad Bin Salman. Vision 2030 provides a blueprint to fulfill the domestic needs of swelling population of KSA. It is a diversification plan to reinforce production and investment activities by channelizing oil wealth into non-oil sectors. The core priority is to enable develop alternative sources of revenue such as taxes, fees, and income from sovereign wealth fund. Digital infrastructure, education, developing cultural venues, optimal use of water resources, rehabilitating beaches & islands, medical insurance, investments in healthcare sectors, equal opportunity for women in education, enhanced logistics services, cross-border infrastructure projects and trade exchanges through leading the gulf council, is all that is envisioned under Vision 2030. Enhancement of skills, knowledge, and entrepreneurship in socio-economic sector is done through national labor gateway program – TAQAT. Small & Medium Entrepreneurship Authority is established to support young entrepreneurs under Vision 2030 which ensures business-friendly regulations, easier access to funding, remove obstacles, partnership and/or government bids. The King Salman Program for human capital development establishes HR centers of excellence in every government agency and provide training to raise the productivity of employees through poor performance management standards, professional development and sharing of knowledge. The council of ministers has delegated the responsibility of identifying programs, deciding amendments to the initiatives, control prerogatives, and establish mechanism necessary to achieve Saudi Vision 2030, to the Council of Economic Development Affairs (CEDA) in coordination with other bodies. This economic roadmap of KSA apparently a vails ample opportunities for 'Young Saudis' to start business in various sectors as mentioned above. And business creation in long term contributes to the economy of any nation [38]. This ensures a sound backup of the whole eco-system encouraging entrepreneurship in KSA. Unexpectedly, in a self-administered survey in KSA regarding awareness of Vision 2030 show that there is negative association

between the awareness of Vision 2030 and the entrepreneurial intention among business students. Also, that the simple regression model explains mere 6.6% total variance in the Vison 2030 awareness [3]. This add up importance to this study as well.

Successive progress of this study involves: first section recounts pertinent review of the literature followed by depiction of a model framework of predictors of entrepreneurial intention with rationale, in addition to objectives and hypothesis; next section includes research methodology, data analysis and findings; and the final section provides conclusion and limitations of the study.

2 Literature Review

Intention is a prior state of mind before any action, comprising of some reasoning – logical, emotional or a combination of both. An intention, to do anything is borne in the mind of a person, is dependent on how he recognizes his capabilities and the degree of inclination to pursue them [40]. An individual initiates to commence a business, with a logical mind-shift, after getting influenced by socio-cultural environment, business opportunity available and feasible market conditions, termed as an entrepreneurial event [42]. Entrepreneurial intention (EI) of a person is an opportunistic action to be taken based on rational approach and broader vision, while taking care of socio-economic background and personal abilities [10]. The theory of planned behavior (TPB) expounds the strength of intention by adding one more element i.e., perceived behavior control which reflects an
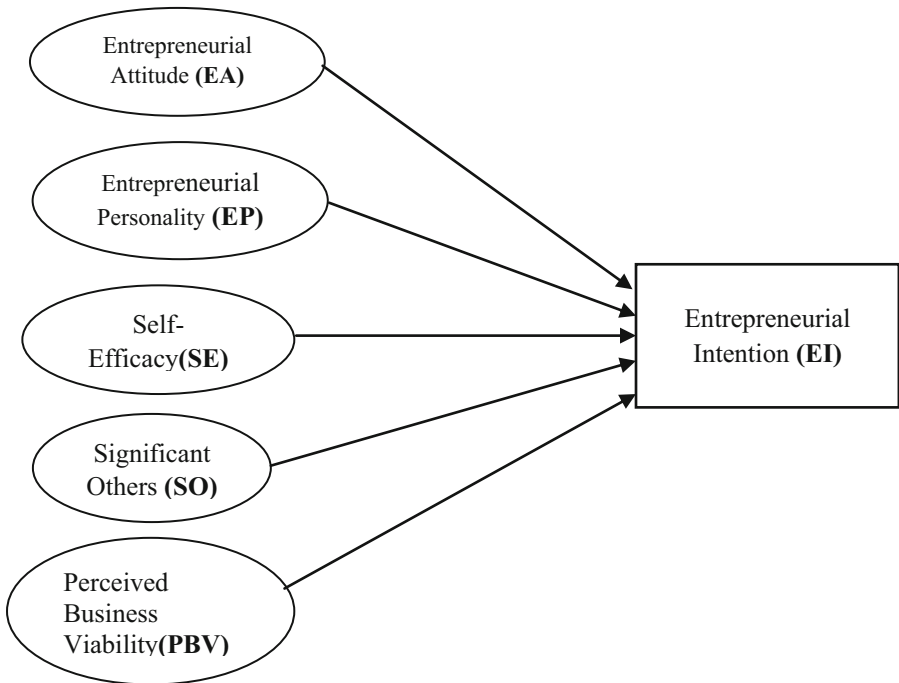
Fig. 1. Model framework of predictors of Entrepreneurial Intention (EI)

individual's belief forte about the level of difficulty to do a given task, not ignoring social norms [1]. The theory of planned action model was investigated on the notion of optimism about self-expectation in the context of new venture creation. It confirmed that perceived behavioral control explained the most variance predicting entrepreneurial intentions but the social norms the least. This investigation also emphasized the moderating role of exogenous variables such as personal or situational before the action is implemented [24]. 'Propensity to act' is presented as moderating variable, based on the notion that despite the intentions are formulated, there is no guarantee that it will be implemented i.e., realistic actions would be taken. Also, that 'collective efficacy' is required to attain feasibility of the action intended [26]. Further, a new version suggested 55.7% explanatory power of 'propensity to act' as a moderator on EI and the 'perceived opportunity' was emphasized with 26.5% explanation in EI [16]. One of the integrated models of SEE & TPB studied in Russia suggested that that an intention of start-up is influenced by attitude, subjective norms, and perceived behavioral control through desirability as well as feasibility, explaining 65% of variance ([21]. Perceived desirability was partially but significantly mediating the specific desire and the EI; Perceived feasibility was partially but significantly mediating the self-efficacy and the EI [43]. In a comparative study investigating the TPB for EI between students of Kosovo and Turkey, it was found that 'perceived feasibility' has the maximum influence on EI, with 49.6% overall explanation [48]. A study in Algeria explored higher impact variance of desirability (80.3%) than the feasibility (47.1%) on entrepreneurial intention of post graduate students [52]. In a study, entrepreneurial education was found to have more impact on entrepreneurial intentions when mediated through personal attitude [27]. Passion is personal strength to overcome barriers and this was found significant mediator between self-efficacy and innovative behavior [12]. Intention to start a new venture is preceded by an action consciously [23]. Attitude is a good predictor of an individual's behavior, in which intention is covert [17]. Attitude is a latent variable which has a motivational content directed towards positive or negative expectation about an object (here business). An individual will become an entrepreneur if the expected rewards surpass the wages of employment, and the expected rewards depend on an assessment of individual ability and on risk attitude. The empirical results confirm the importance of risk-taking ability for successful entrepreneurship [49]. An entrepreneur has more positive attitude towards risk than a non-entrepreneur individual [11]. Most identified personality traits of an entrepreneur include need for achievement, internal locus of control, persistence, determination, risk-taking and independence [35]. Five personality traits of personality i.e., extroversion, agreeableness, conscientiousness, emotional stability, and openness to experience have been researched in entrepreneurship, also known as five-factor model of personality [22]. Individuals with proactive personality identify opportunities, show initiatives, take action, and persevere until meaningful change occurs. They create positive change in their environment, regardless or even despite constraints or obstacles [41]. On the other hand, precisely, proactive personality when correlated with self-efficacy are more likely to predict EI. Individual who are highly proactive demonstrates higher self-efficacy and more likely to report EI and hence vice-versa [47]. Also entrepreneurial personality is the outcome of interaction of internal and external forces of individual's situational factors put together [13]. Another holistic aspect of entrepreneurial personality is the

configural approach, which imbibes intra-individual and situational interaction, resulting in a stable pattern of behavior over a period as presented by the Cognitive-Affective Personality System theory of personality. Similarly, the entrepreneurial personality is presented in configurational mode of cognition, affects, motivation, trait, and situation depicting multiple interaction of an intra-individual personality. This configuration may vary from person to person in specific context [31]. Self-Efficacy refers [8] to a belief system of person which confers about his abilities to accomplish a given task in the purview of his own constitutive practices, observations, response of the social support, and overall judgment of his situation [8]. The modified version of Bird's model suggests that prospective entrepreneur's social and economic context along with personal abilities generates a self-belief system in his mind to be goal oriented, which further builds an attitude necessary to strengthen his intentionality to begin business. Also, that 'self-efficacy' will moderate intentions and likelihood of the required action [34]. The SEE and TPB models when compared found that both are principally analogous regarding self-efficacy (perceived behavioral control in TPB; perceived feasibility in SEE) and explained40.8 percent variance in intention [25]. Women who show greater capabilities and situational control are more inclined towards self-employment [15]. Self-efficacy is a degree of confidence that an individual is capable of handling situational issues or that his actions will control the problem from augmenting. Individuals tend to employ more efforts when they receive genuine encouragement by their family or any other social connections for the task, they performed [18]. An individual's action embraces both social norms conformity and self-interest [15]. An individual's action would conform the status (observable only by actions) he shares among the society [9]. The social norms have more likely impact in starting a new venture, also for a better family life [32]. A high need of stock of social connections or social capital has been recognized in the era of television and computers [36]. It is highly perceived that social benefits of entrepreneurship are directly proportionate to the presence or absence of social capital in his entrepreneurial activities [4]. Impact of social capital on entrepreneurship is being observed as an essential element to condition business actions of an entrepreneur [14]. Interestingly Columbian students carrying Darwinian social identity were found to have significant positive impact up to 27% on entrepreneurial intention, compared to communitarian social identity [19]. Attitude, self-efficacy, knowledge, and curriculum were found to exhibit major impact on entrepreneurial intention among management students in Saudi Arabia, with total impact of 69.4% variance [2]. As suggested by the model of risk behavior when involving oneself in business activity there is uncertainty of realizing an expected outcome due to organizational, situational, and individual factors as part of risk propensity [44]. An individual would not take the risk if the environmental threat were high [45]. On a positive note, if the upcoming opportunity identified can propose positive outcome, then an individual would be seeking to take risk [30]. Alertness significantly mediates, through searching and scanning about the entrepreneurship, and improves the impact of prior entrepreneurial exposure, such as education, work experience or parental role model, on entrepreneurial intention of students in Nigeria, which is positively and significantly confirmed [5]. One of the studies in Ethiopia based on three statistical model comparison, reveals that entrepreneurial education, attitude, and relational support such as access to finance and family background, significantly and

positively affect the entrepreneurial intention of the students; but socio-economic and demographic factors do not [7] (Fig. 1).

3 Model Framework

3.1 Rationale

- *Human mind* is assumed to be a black-box or a transformer by the psychologists. Intention of any person is part of the transformation process, which is difficult to predict whether to be turned into real action or not. Therefore, many psychologists, cognitively, try to evaluate this throughput, by changing the input and relating with the output. This study assumes that an entrepreneurial action is unlike making efforts to quit any addiction. Entrepreneurial behavior is new in anyone's life with a dire 'need for achievement' to act upon. This feeling gives a thrust to the person to take financial risk in future.
- Five factor constructs or latent components with corresponding items have been deliberately and judiciously prepared by the authors based on literature review. These areas: entrepreneurial attitude (EA), entrepreneurial personality (EP), self-efficacy (SE), significant others (SO), and perceived business viability (PBV) as predictors of dependent variables i.e., entrepreneurial intentions (EI)also said as propensity to act as entrepreneur in future. The study investigates the impact of these factor constructs to determine the implementation intention to begin business in near future; inspired by integrated models of EI.
- This study is exploratory in nature in the context of KSA about the nascent stage of E.I. of 'Young Saudis'. The focus respondent is a 'Young Saudi Nationals', whether male or female. His demographics or ethnicity may differ, but the key idea of the research is extracting the variables which are helpful in strengthening intentions to start a business.
- The term 'entrepreneurial intention (E.I.)' is referred to as 'inclusive' in meaning for an individual who may intent either to start a business with entirely new product in the market or with an existing product or service available in the market. He/she may start a manufacturing facility, or intently begin distribution services or commence a service-oriented firm or even import–export business. The respondent may have plans to manage his inherited business or to expand it or involved in exploring new market opportunities. This study focuses to propose E.I. of 'Young Saudis' in a holistic manner.

4 Objectives

- o To scrutinize prominent Entrepreneurial Intention (EI) among young Saudis.
- o To validate observable variables projecting E.I.
- o To discover whether the latent constructs or factors are correlated.
- o To know the impact of predictors of the E.I., statistically.
- o To suggest factors that can motivate young Saudis to start their own business in future.

5   Hypothesis

H_1: There is positive impact of Entrepreneurial Attitude (EA) on Entrepreneurial Intention (E.I.).

H_2: There is positive impact of Entrepreneurial Personality (EP) on Entrepreneurial Intention (E.I.).

H_3: There is positive impact of Self-Efficacy (SE) on Entrepreneurial Intention (E.I.).

H_4: There is positive impact of Significant others (SO) on Entrepreneurial Intention (E.I.).

H_5: There is positive impact of Perceived Business Viability (PBV) on Entrepreneurial Intention (E.I.).

6   Research Methodology

This research is descriptive and exploratory in nature. Convenient sampling techniques were adopted to collect data online. Responses were taken online from students and their relatives from various colleges in the Al-Kharj region of Kingdom of Saudi Arabia. 312 forms were received online, out of which 279 forms were selected for further analysis excluding unfilled forms and without any missing data-points. Another 60 responses were dropped out as outliers identified on the box plots. All 29 items were created deliberately to be measured on 7-points Likert Scale embedded in six constructs as: 4 items for EA, 4 items for EP, 6 items for SE, 3 items for SO, 5 items for PBV and 7 items for dependent variables associated with E.I. Effectively, 219 observations were found as 'normally distributed' for all variables in final analysis. Cronbach's Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE) was calculated to assess overall reliability and validity of the items extracted. Principal Component Analysis and Varimax rotation was applied for exploratory factor analysis (EFA). Multiple regression (enter method) was applied to cognize the impact of the independent variables on entrepreneurial intentions. MS-Office-365 and SPSS-21 version was used for all data analysis.

7   Data Analysis

Demographic Profile of all respondents can be seen in *appendix-i.* Data was found *normal* when applying Kolmogorov-Smirnoff and Shapiro–Wilk tests*(0.000)* in SPSS. Group Descriptive of all the six constructs can be seen in *appendix-ii.* A significant mean difference found between the sample groups of business and non-business major towards an entrepreneurial intention. An initial correlation status of all six transformed variables, is shown in *appendix-iii*, *which permitted further extraction analysis.*

Table 1. Correlation matrix

Transformed	E.I	EA	EP	SE	SO	PBV
E.I	**1**					
EA	**0.495**[**]	1				
EP_wo_Q#12	**0.343**[**]	0.182[**]	1			
SE_wo_Q#18&20	**0.438**[**]	0.325[**]	0.316[**]	1		
SO	**0.480**[**]	0.379[**]	0.270[**]	0.349[**]	1	
PBV_wo_Q#29	**0.499**[**]	0.347[**]	0.378[**]	0.390[**]	0.477[**]	1

[**]Correlation is significant at the 0.01 level (2-tailed). N   219

Table 1 exhibit significant correlation existing between the transformed variables, after extraction.

Table 2. KMO and Barlett's test

KMO and Bartlett's test		
Kaiser–Meyer–Olkin measure of sampling adequacy		0.810
Bartlett's test of sphericity	Approx. chi-square	927.684
	Df	153
	Sig	0.000

Table 2 affirms adequate significant sampling adequacy well above standards of 0.70 .

Table 3 exhibit extracted items, as retained from SPSS. Varimax rotation was put at a suppressing limit of 0.40 coefficients. Adhering to the rationale of the study and model framework, re-naming has not been done after final extraction of the factors.

Table 3. .

S.no.	Factor Names	Rotated Components' Extraction	Factor Loadings	Eigen Values
1	Perceived Business Viability (PBV)_wo_Q# 29	(PBV2) Q27. I believe that professional business consultants are available in Saudi Arabia to help me start my business.	0.770	2.243
		(PBV1) Q26. I will prefer to take advantage of any entrepreneurship support or training program offered by the Saudi Arabia government if I start my own business	0.731	
		(PBV4) Q31. I hope the market conditions will remain stable in Saudi Arabia in the coming times.	0.631	
		(PBV3) Q28. I expect that I will get affordable bank loans in Saudi Arabia to start my own business.	0.541	
2	Self-Efficacy (SE)_wo_Q#18 & 20	(SE1) Q14. Most of my decisions prove to be correct later.	0.766	2.237
		(SE2) Q15. Compared to other people, I can do most tasks very well.	0.720	
		(SE3) Q16. I know how to arrange initial amount of money required starting my own business.	0.603	
		(SE4) Q17. I am confident supervising my employees in my new business.	0.577	
3	Entrepreneurial Attitude (EA)	(EA1) Q2. If I had necessary resources and opportunity, I would surely start my own business.	0.760	2.096
		(EA3) Q4. I know that I must take risk by investing my own money to start a business.	0.715	
		(EA2) Q3. It is fine for me if I start a small business, initially.	0.638	
		(EA4) Q6. Business can give me financial stability in the long run.	0.561	
4	Significant Others (SO)	(SO2) Q24. Famous businessman in Saudi Arabia inspires me to start my own business.	0.767	1.832
		(SO1) Q22. My mentors and seniors encourage me to start my own business.	0.683	
		(SO3) Q25. My business will help me create unique identity in the society.	0.614	
5	Entrepreneurial Personality (EP)_wo_Q# 12	(EP1) Q8. I am comfortable meeting new or unknown people.	0.822	1.678
		(EP2) Q9. I am open to experience new ways of doing a task.	0.749	
		(EP3) Q10. I always listen carefully to what others suggest,and agree to them.	0.480	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Table 4. .

Reliability of data (Dimensions)	Cronbach's alpha	N of items	Cronbach's alpha (N = 24)
Reliability statistics for EA	.655	4	0.868
Reliability statistics for EP_wo_Q# 12	.589	3	
Reliability statistics for SE_wo_Q#18 & 20	.666	4	
Reliability statistics for SO	.663	3	
Reliability statistics for PBV_wo_Q# 29	.690	4	
Reliability statistics for E.I	.709	6	

Table 4 the internal reliability of the data, after EFA, for each dimension was found above the standard of 0.60 provided by Bagozzi (1988), however the overall alpha coefficient is still extremely reliable (0.868).

Table 5. .

Validity of data (Dimensions)	Average variance extracted (AVE)	Composite reliability (CR)
EA	0.4526475	0.76558
EP_wo_Q12	0.489028333	0.732919
SE_wo_Q18&20	0.4504235	0.763772
SO	0.477258	0.73093
PBV_wo_Q29	0.45452575	0.766062

Table 5 exhibits the values to affirm the convergent validity of all constructs. As can be observed that AVE is not meeting the standard 0.50 but still signaling satisfactory, however the CR is quite highly satisfactory above the standard 0.70. Hence, the constructs meet convergent validity. [To be noted that, AVE and CR were calculated using the factor loading (or Lambda) values shown in Table 3, using the formula: AVE = Sum of Squares of Lamda divided by number of items. And the CR is calculated as: (Square of the Sum of Lamdas) divided by (Square of Sum of Lamdas + Sum of All Error Variances)]. Discriminant validity calls for squares of the AVE of the latent constructs to be higher than the highest correlation values between the constructs as a rule of thumb proposed by Fornell & Larcker (1981). And the same is established when comparing the square

root values of AVEs of EA (0.672791), EP (0.699306), SE (0.671136), SO (0.630839), and PBV (0.674185) with the highest correlation value (0.499) given in Table 1.

Table 6. Multiple regression analysis (Enter Method): Model summary[b]

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics					Durbin-Watson
					R square change	F change	df1	df2	Sig. F change	
1	.665[a]	.442	.429	3.14029	.442	33.756	5	213	.000	2.155

[a]Predictors: (Constant), PBV_wo_Q29, EA, Persona_wo_Q12, SEffic_wo_Q18&20, SIGOTH
[b]Dependent Variable: E.I

Table 6 exhibits regression model summary comprising of all dependent variables.

Table 7. Coefficients[a]

Model (Regression)		Unstandardized coefficients		Standardized coefficients	t	Sig	Collinearity statistics		Hypotheses rejected or supported
		B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	2.396	2.461		0.973	0.331			
	EA	0.422	0.087	0.278	4.843	0.000	0.795	1.258	Supported(H_1)
	Persona_wo_12 (EP)	0.205	0.104	0.111	1.967	0.050	0.819	1.221	Supported(H_2)
	SEffic_wo_18,20 (SE)	0.244	0.086	0.167	2.850	0.005	0.763	1.310	Supported(H_3)
	SIGOTH (SO)	0.292	0.095	0.188	3.079	0.002	0.700	1.428	Supported(H_4)
	PBV_wo_29	0.267	0.082	0.206	3.259	0.001	0.658	1.520	Supported(H_5)

[a]Dependent Variable: E.I

Table 7 exhibits non-existence of multicollinearity problem because the tolerance values are well above 0.10 standards and the variance inflation is also under the acceptable limits of 3.

8   Findings

A composite observation of all tables in data analysis results that: Correlation between EA and EP is quite low, despite being significant. Moreover, the EA, EP, SE, SO and PBV carry significant and moderately strong positive correlation along with EI of the young Saudis. To be noted that an appropriate extraction grouping of variables was not possible without eliminating the required variables, despite a low decrease in correlation status among the transformed constructs; Cronbach's alpha was used to assess the internal

reliability of the data for initial 29 items, which was found to be 0.891 and exceptionally reliable as retained from SPSS; An initial Kaiser–Meyer–Olkin (KMO) of 0.830 was achieved for sampling adequacy with 0.000 significant Bartlett's Test of Sphericity for the same. This allowed for further exploratory factor analysis. From minimum five to various number of rotations was performed and ultimately 4 items were removed based on either low communality (below 0.40), excessive number of components, unsatisfactory total variance, or excessive cross-loadings over components. However, the KMO lowered a little bit but still significant, after data reduction; Only those independent variables whose Eigen value is greater than 1 is accepted and whose percentage of total variance explained is 56.031%, which is fairly adequate. And highlighting the PBVs most contributing (12.460%) with subsequent contribution of SE (12.427%), EA (11.646%), SO (10.177%) and EP (9.320%) in EI; Internal reliability of all items, convergent validity and discriminant validity of all constructs met the minimum required standards statistically; 42.9 per cent variance of all dependent variable was explained significantly (0.000) by the independent variables. The reporting ANOVA was also found significant (0.000) at F = 33.756 for all predictors. Multi-collinearity problem does not exist; Beta coefficients indicate that any change in any one construct will not affect any change in other independent constructs, wildly. So that while holding all other variables constant, one unit change in EA will impact positively the E.I. by 27.8%, one unit change in EP will impact positively the E.I. by 11.1%, one unit change in SE will impact positively the E.I. by 16.7%, one unit change in SO will impact positively the E.I. by 18.8%- and one-unit change in PBV will impact positively the E.I. by 20.6%. Hence, all five constructs are essential to maintain EI of the young Saudis, eventually hypotheses supported statistically.

9   Conclusion

Statistical findings of this study are quite pertinent with the literature review discussed above. It is evident that the presence of entrepreneurial attitude is most influential in conceiving entrepreneurial intention. The young Saudis are willing to take business risk, provided necessary resources are available. This is also in accordance with attitude research studies by [27, 49], and [2]. Regarding availability of necessary resources, the young Saudis are very optimistic such as bank loans, business consultants, and entrepreneurial training programs (TAQAT) in KSA. They also expect stable market conditions in KSA in future. This signifies a shipshape impact of perceived business viability (along with [7, 16, 48, 52] on entrepreneurial intention of young Saudis, as apparent in this study. Inspirational aspects from societal members and a belief to create unique identity by starting a business is also evident in this study among young Saudis (corresponding to [21, 32]. But Darwinian social identity approach [19] is absent, which is further suggested to investigate so that such young Saudis can be identified and trained in the direction of business start-ups. Self-efficacy of young Saudis to manage situational issues compared to others is well indicated herein [1, 24] but is not highly impactful on entrepreneurial intention (i.e., moderation is possible as put by [34]. Personality of young Saudis as pull out herein is not much proactive [41] but they are open for new experience and business opportunities available. They carry traits like extroversion and

agreeableness [22] and risk-taking initiatives [35]. The five determining elements studied herein suggests clear understanding of its priorities without playing with moderation or mediation variables. It is recommended that young Saudis need formal entrepreneurial training at college level to develop their entrepreneurial personality and sense of self-efficacy. Young Saudis surely need more support from their family, friends, and society to motivate them towards business field. Optimism about the perceived business viability is quite exciting among young Saudis. Entrepreneurial attitude is certainly appreciative among young Saudis. The courses of business studies, in KSA university colleges, should imbibe more real-life examples of businessman and business situations to ignite entrepreneurial ventures among students. Congruent to the rationale discussed earlier, this contribution is an attempt to broaden the well-established gravity of relevant studies earlier, in the limelight of Saudi Arabia. It is also observed that there is a dearth of entrepreneurship research studies in KSA. Frequent research studies are not carried out in KSA to let out more entrepreneurial potential among young Saudis and motivate them to join the mainstream of the economy to achieve Vision 2030 in time. Future research studies in KSA to nourish entrepreneurial aspirations may focus on what specific resources required to start a business, what are individual skill development needs, how to create business opportunities in non-oil sector, how entrepreneurial exposure can be cultivated through awareness campaigns and alike. Limitations: Core meaning of the statements (question items) may not be well interpreted due to lack of use of English language among young Saudis; despite an Arabic translation of each item was given in the questionnaire. Due to COVID-19 administrative restrictions, the authors were unable to reach young Saudis personally and communicate the very purpose of the study much precisely. So, the responses received may be diverse. Seeking female responses was most difficult even if online due to cultural inhibitions and trivial network. Financial limitations were obvious.

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Exploring Investment Behaviour of Working Women for Economic Empowerment

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Abstract. Growth in investments leads to the economic and household upliftment of each person. We can see the presence of women in every area of our economy. They play the role of a teacher, doctor, nurse, engineer, accountant, military officers, entrepreneur, and many more. Now women are more educated; they have their assets in gold and other precious ornaments. They are also aware of various investment schemes available. This study analyzes working women's investment behavior and examines how it is beneficial for our society's economic and household upliftment. The data collection was carried out through 400 respondents using a questionnaire. The study area covers only the Bengaluru Urban population. Five Taluks in the Bengaluru urban were selected for the study. Cluster sampling is followed for selecting samples, and data is collected from each clusters. Eighty samples from each cluster were selected, and data is collected using the survey method. The tools used for data analysis consist of Henry Garrett ranking method, Weighted Average Method, and Percentage Analysis. Risk preferences of the investors were analyzed using the factors derived from the article written by Vashisht and Gupta, 2005. The current study aims at salaried women employees who have a regular income, which they can contribute to savings and investment for the economic and household developments.

Keywords: Investment behavior · Savings · Working women · Economic empowerment · Decision making

1 Introduction

The work performed by women in the family, workplace, and in various business operations are being recognized and appreciated by everyone. In the current scenario, women are getting more opportunities to be a part of family decision making. Women investors' are more risk-averse, They have a conservative attitude towards risk-taking activities as they are more vigilant about their savings and income. This article tries to analyze the investment behavior of working women for economic development and household upliftment. This study helps us to examine the behavior of women when they are making investment decisions. It is also necessary to examine to what extent the family and economy influence the working women's investment decisions. In the modern world men

and women requires equal acceptance. Both should contribute towards the wealth of the family as well as the wealth of the economy. The decision of the married women are influenced by their husband in India. The present study focuses on the actions initiated by women for investment decision-making in their family and how it leads to the economic empowerment of our nation. A better idea about the working women's investment behavior can be traced out through the current study. The sample for the study was 400 working womens in Bengaluru, India.

2 Theoretical Background

Investment behaviour of investors is always a key factor which leads to the various investment decisions. Kahneman and Tversky [1], the contribution given by prospect theory is very important to gain growth and development of economy. Investor attitude may not be same in all the situations it may deviate from the economic theories proposed earlier. Ritter [2] stated that behavioral finance points out the fact that investors are not completely rational in nature. It may change in preferences and show false beliefs. Behavioral finance shows that to certain extent market is inefficient. Behavioral finance tries to find out the reason behind the changing investment attitudes of the individuals. So behavioral finance can be considered as a study of rational and irration al behavior of investors, also Anomalies in efficient markets suggest hypotheses for explicitly detailed behavioural models [3]. To examine the investment behaviour of a person it is necessary to understand their general investment attitude and analysis of the various biases in which can affect the investment decisions. Hence, Pompian [3] proposed modern finance theory which focuses on the current market information which results in market efficiency. This helps in the examination of true value of various investments. Fisher and Statman [4] have identified various factors that can affect the investment decisions. According to them individuals are not able to take rational decisions because they may be often influenced by various biases based on their age, gender and fund availability. Investors while making investment decisions will be highly influenced by the market sentiments, attitudes and emotions. Refs. [5–7] state that biases of investors may leads to irrational behaviour while making investment decisions. Conservatism bias is a sort of cognitive bias in which investors hold to past information about an investment and pay little or no attention to new information, leading to forecasting rather than absorbing new information [8]. Personal characteristics play a vital role while making investment decisions. To further understand the link between the two types, extensive research has been conducted.

3 Statement of the Problem

Achievements made by women are increasing day by day. Some areas of our economies' contributions made by women are more. Even though in the modern world, they lack importance in many financial decision-making processes. The number of working women making financial decisions by themself is less as always they will depend upon their family or male counterparts. Even though women are courageous enough to make many crucial financial decisions, they lack such opportunities in several situations.

They are many obstacles that hinder women from taking part in various investment decisions. Such hindrances include lack of job security, loss of money, risk, lack of proper awareness, and lack o family support. current study explored the investment behaviour of working women for economic empowerment.

4 Significance of the Study

In the modern world, the role of women is versatile to various parts of our society. Their increased knowledge and educational qualification led them to conquer more heights regarding their career and working positions. Better position and career enabled the women to be well equipped with adequate financial consistency. Women are also becoming the major money makers of their families. This situation motivated the financial planners and advisors to focus on the savings and investment attitude and perceptions of the working women. They made wise investment decisions that can provide more return. The savings and expenditure management of women in every family is always appreciable. Whenever women are making investment decisions, they will also keep specific purposes in their minds, leading to better wealth management. In the changing world, investment decisions of women depend upon various factors such as their level of income, risk tolerance capacity, investment behavior are few among those factors.

5 Literature Review

The present studies demostarte that social and personal behavioral biases, investment knowledge, experience in investments, extent of optimism and capacity to avoid uncertainty are the factors that can influence the decisions to invest in any asset. Demographic, psychological, and sociological factors are considered critical attributes of investment decisions. Psychological factors include investment experience and biases of the investors. Demographic factors consist of age and gender, whereas sociological factors include education, income, and marital status [9].

Women are economically active in the modern era. They have achieved economic growth, contributing to the household developments along with the male counterpart. Enhanced education and technological awareness helped women to increase their economic contributions [10]. Economic growth relates to all parts of the economy. It includes the need for women's empowerment in all fields. The status of women can change by making vital contributions to the household and economic developments [11]. The awareness about investment avenues, the investment pattern of working women and factors influencing their investment decision using both primary and secondary data among 148 respondents at Coimbatore city found that investment for 'Children education' was the most influential factor. It was also found that there was significant difference in the factors influencing investment among employees belongingto various occupation [12]. The most influencing investment factor was profitability and the second factor was safety followed by liquidity, prestige, stability, transferability and speculation [13]. There was a link between the factors influencing awareness level and the factors influencing benefits. When making investments, investors prioritised the safety of their funds. Men's and women's investment behaviours differ in a number of ways. As a result, this disparity

in investment behaviour has broadened the scope of research in the field of behavioural finance [14]. Individual investment behaviour is similarly influenced by personality, gender differences, socioeconomic environment, attitudes, myths, and other demographic information. The existing literature identifies female entrepreneur behavioural and psychological characteristics that influence investment attitude separately [15]. This will eventually assist the financial services industry in providing adequate investment opportunities. Currently, it is also observed that entrepreneurship is a key driver of a country's economic progress and improvement because it creates jobs, raises living standards, and alleviates poverty [16]. Women-owned businesses have become critical to economic growth because they alleviate poverty, reduce gender inequality, and demonstrate productive work [17]. Primary research has a broad scope for examining the investor's decision-making attitude. Women invest less than men, and they are more risk-averse in general [18, 19]. As a result, men engage in more financial transactions than women because women exhibit risk-averse behaviour and prefer to hold long-term investments. This eventually leads to women having limited financial knowledge [20]. Women will be motivated to invest in a variety of ways if they have access to adequate financial information at all times [21]. Males are more interested in financial matters, and gender influences rational decision making, which does not affect money anxiety and the desire to save enough [22]. Education increases overconfidence and self-efficacy bias, highly educated people are more concerned about their savings and allocate their funds more cautiously than those who are not well-educated [23]. Several psychographic factors have a significant impact on the financial decisions of investors. A person's high self-esteem will reveal better financial behaviour. As a result of the preceding research, it is clear that both genders play an important role in the field of investment [24].

6   Objectives

1. To understand the role of demographic variables on the investment behavior of working women
2. To examine the effect of psychological factors which can influence the investment behavior of working women

7   Methodology

The study consist of a quantitative approach involving a survey of women working in both government and private sectors in Bangalore city, India. Cluster sampling is used for the study and data collected from each cluster based on a structured questionnaire. Questionnaire is structured based on extensive literature review. According to Krejice table 1970, quantitative data collection requires a minimum of 384 samples. So 80 samples from each taluks[1] of Bengaluru urbanwere selected for the study. Bengaluru Urban has five taluks. The study duration was six months. Henry Garrett ranking method, Weighted Average Method, Percentage Analysis is carried out to conduct the analysis process of the study.

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[1] A group of villages joined together for administrative and taxation needs can be termed as taluk in India.

8   Analysis of Data

1. To understand the role of demographic variables on the investment behavior of working women (Table 1)
2. To identify the psychological factors which can influence the investment behavior of working women

Table 1. Analysis of demographic variables

Taluks			1		2		3		4		5		T	P
S.No.	DF	A	NS	%	NS	%	NS	%	NS	%	NS	%		
1	Age	Below 25	18	23	16	20	14	18	17	21	20	25	85	21.2
		26–35	23	29	22	28	24	30	20	25	19	23.8	108	27
		36–45	22	28	27	34	25	31	28	35	26	32.5	128	32
		46–55	12	15	13	16	11	14	8	10	9	11.3	53	13.2
		56 and above	5	6.3	2	2.5	6	7.5	7	8.8	6	7.5	26	6.5
		Total	80	100	80	100	80	100	80	100	80	100	400	100
2	Educational qualification	10	8	10	9	11	7	8.8	9	11	6	7.5	39	9.75
		12	10	13	14	18	16	20	13	16	15	18.8	68	17
		Graduate	28	35	26	33	27	34	25	31	28	35	134	33.5
		Postgraduate	30	38	28	35	25	31	28	35	24	30	135	33.7
		No. formal education	4	5	3	3.8	5	6.3	5	6.3	7	8.75	24	6
		Total	**80**	**100**	**80**	**100**	**80**	**100**	**80**	**100**	**80**	**100**	**400**	**100**
3	Employment status	Employees	32	40	30	38	37	46	35	44	40	50	174	43.5
		Business	24	30	26	33	25	31	23	29	26	32.5	124	31
		Professional	16	20	18	23	13	16	15	19	12	15	74	18.5
		Others	8	10	6	7.5	5	6.3	7	8.8	2	2.5	28	7
		Total	**80**	**100**	**80**	**100**	**80**	**100**	**80**	**100**	**80**	**100**	**400**	**100**
4	Monthly income	Below 10,000	12	15	7	8.8	5	6.3	6	7.5	3	3.75	33	8.25
		10,000–20,000	18	23	20	25	17	21	15	19	12	15	822	20.5
		20,000–30,000	26	33	24	30	28	35	25	31	32	40	135	33.7
		30,000–40,000	19	24	22	28	21	26	24	30	21	26.3	107	26.7
		Above 40,000	5	6.3	7	8.8	9	11	10	13	12	15	43	10.7
		Total	**80**	**100**	**80**	**100**	**80**	**100**	**80**	**100**	**80**	**100**	**400**	**100**
5	Work experience	Upto 3 years	32	40	34	43	35	44	31	39	33	41.3	165	41.2
		4–6 years	28	35	26	33	24	30	30	38	26	32.5	134	33.5

Table 1. (*continued*)

Taluks			1		2		3		4		5		T	P
S.No.	DF	A	NS	%	NS	%	NS	%	NS	%	NS	%		
		7–9 years	15	19	12	15	14	18	13	16	11	13.8	65	16.2
		Above 10 years	5	6.3	8	10	7	8.8	6	7.5	10	12.5	36	9
		Total	**80**	**100**	**80**	**100**	**80**	**100**	**80**	**100**	**80**	**100**	**400**	**100**

(Source: Primary Data). Where Taluks: (1) Yelahanka, (2) Bangalore North, (3) Bangalore East, (4) Bangalore South, (5) Anekal. DF = demographic factors, A = attributes, NS = number of respondents, % = percentage

It is necessary to understand the general investment behavior of the women investors, and along with that, we have to examine the presence of significant behavioral biases among the women investors. So to examine this particular objective, we have divided the analysis into two different sections: measurement of the general investment attitude and analysis of the various biases in which can affect the women investor's Investment decisions (Tables 2, 3, and 4).

Measurement of general investment attitude

Table 2. Income invested

Taluks	1		2		3		4		5		Total	Percentage
Income	NS	%	NS	%	NS	%	NS	%	NS	%		
Upto 10%	23	29	24	30	20	25	16	20	21	26.3	104	26
11–20%	26	33	25	31.3	23	28.8	27	33.8	19	23.8	120	30
21–30%	20	25	18	22.5	21	26.3	22	27.5	23	28.8	104	26
Above 30%	11	14	13	16.3	16	20	15	18.8	17	21.3	72	18
Total	80	100	80	100	80	100	80	100	80	100	400	100

(Source: Primary Data)

Table 3. Awareness about the rules and regulations of investment options

Taluks	1		2		3		4		5		Total	%
Particulars	NS	%	NS	%	NS	%	NS	%	NS	%		
Fully aware	24	30	26	32.5	28	35	20	25	23	28.8	121	30.3
Partially aware	39	49	34	42.5	37	46.3	42	52.5	38	47.5	190	47.5
Not aware	17	21	20	25	15	18.8	18	22.5	19	23.8	89	22.3
Total	80	100	80	100	80	100	80	100	80	100	400	100

(Source: Primary Data)

Table 4. Risk preference

Taluks	1		2		3		4		5		Total	%
Particulars	NS	%	NS	%	NS	%	NS	%	NS	%		
High risk	10	12.5	7	8.75	9	11.3	12	15	8	10	46	11.5
Moderate risk	22	27.5	18	22.5	23	28.8	25	31.3	15	18.75	103	25.75
Low risk	48	60	55	68.75	48	60	43	53.8	57	71.25	251	62.75
Total	80	100	80	100	80	100	80	100	80	100	400	100

(Source: Primary Data)

Table 5. Investments made by the women investors

S.No.	Investment	No. of responses	Percentage
1	Bank deposits	400	24.54
2	Post office savings	321	19.69
3	Life insurance	280	17.18
4	Gold/silver	382	23.44
5	Real estate	123	7.55
6	Chit funds	96	5.89
7	National savings Certificate	13	0.80
8	Shares	12	0.74
9	Debentures	2	0.12
10	Bonds	0	0.00
11	Government Securities	1	0.06
Total		1630	100

(Source: Primary Data)

It is analysed majority of the investors (24.54%) invested in various bank deposits. 23.44% of the respondents invested their earning into gold/silver. 19.63% of the respondents invested in post office savings. We have categorized all these avenues as less risky, so the same trend can be examined from Table 5. The least preferred investment avenues are bonds, debentures, shares, and government securities. This shows the risk-averse attitude of the women investors.

Purpose of investment

Henry Garret Ranking method is used for analysing the purpose of investments. Table 6 shows the specific calculation regarding the same. Where Rk = Rank (Table 7).

Table 6. Purpose of investment

S.No.	Purpose of investment	Rk 1	Rk 2	Rk 3	Rk 4	Rk 5	Rk 6	Rk 7
1	To make extra earnings	60	72	80	32	44	55	57
2	For future cashinlow	52	62	63	62	61	66	34
3	For future needs (like education, marriage, child expenses, etc.)	93	87	50	108	32	25	5
4	To meet contingencies	63	83	62	43	110	20	19
5	To buy various assets (gold, land, furnitures, etc.)	79	61	75	92	80	9	4
6	To enhance the standard of living	10	5	9	23	63	135	155
7	For tax deduction	43	40	61	89	76	55	36

(Source: Primary Data)

Table 7. Classifying the purposes based on ranks

Purpose	Total	Average score	Rank
P1	20,723	51.81	4
P2	20,572	51.43	5
P3	23,700	59.25	1
P4	21,987	54.97	3
P5	22,985	57.46	2
P6	13,627	34.07	7
P7	19,949	49.87	6

Calculation of percent position: percent position = $100(R_{ij} - 0.5)/N_j$, N_j = total rank given by 400 respondents = 8

Analysis of the presence of 3 most common behavioral biases which can affect the investment behavior is examined using a 5 point Likert scale. The three behavioral biases

Table 8. Analysis of the various biases in which can affect the women investor's investment decisions

Weighted value	1		2		3		4		5		T	TW	Mean
S.No. Factors	Ns	WE	Ns	WE	Ns	WE	Ns	WE	Ns	WE			
Overconfidence bias													
1 I will always take correct investment decision	5	5	99	188	211	633	80	320	5	25	400	1171	3.46
2 I am very much confident in my investment ability	4	4	36	72	80	240	112	448	168	840	400	1604	
Total												**2775**	
Anchoring													
1 I will invest based on my previous experience	82	82	169	338	85	255	42	168	22	110	400	953	3.07
2 Based on recent investment prices I can forcast the prices of investments	15	15	46	92	92	276	125	500	122	610	400	1493	
Total												**2446**	
Conservatism													
1 I prefer on past informations as the future is uncertain	62	62	112	224	73	219	84	336	69	345	400	1186	2.14
2 Prefer lessrisky investment avenues	282	282	112	224	4	12	2	8	0	0	400	526	
Total												**1712**	

(Source: Primary Data). Where weighted values 1, 2, 3, 4 and 5 shows the response from the women investors such as "strongly agree, agree, somewhat agree, disagree, strongly disagree". One denotes strongly agree, and five shows strongly disagree. NS = number of respondents, WE = weighted value, T = total response, TW = total weight

considered for the study include overconfidence bias, anchoring, and conservatism bias. From Table 8, it is evident that men value (2.14) is less in conservatism bias. It shows that in the present study, most of the women investors agreed that they have a conservative attitude towards the investment avenues, and the next lowest mean value (3.06) lies with anchoring bias, so the presence of anchoring bias can also be identified in the investment behavior. The highest mean value lies with overconfidence bias (3.46). It shows the presence of overconfidence bias is less among the women investors.

9 Findings

1. This study shows that demographic variables have a significant impact over the decisions of women investors. The majority (32%) of them belong to the age class 36–45. Most of them (33.7%) have a postgraduate degree. 43.5% of the total respondents are employees. 33.7% of the respondents having a monthly salary ranging from 20,000 to 30,000. The majority of the respondents (41.2%) having work experience up to and 3 years and 33.5% of the women investors having a work experience of 4–6 years. In most families, women are also working along with their male counterparts.

2. The present study shows that the majority of the respondents (30%) invest 11–20% of their earnings. 47.5% of the respondents are partially aware of the rules and regulations of the various options for investing their money. It is also found that most of them are investing for a time duration of 1–3 years, and 29% of the respondents are investing for 4–5 years. The majority of the respondents (62.75%) likes to takes only less risk. The majority of the respondents (24.54%) invested in various bank deposits. 23.44% of the respondents invested their earning into gold/silver. This shows women are interested in investing in less risky assets. The investment purpose of most women investors is for meeting their future needs (like education, marriage, and child expenses).

3. It was found that women investors agreed that they have a conservative attitude towards the investment avenues, and it shows the presence of overconfidence bias is significantly less among the women investors.

10 Recommendations

1. Awareness level can be increased by initiating awareness programmes through various banks and post offices, as they can easily access through these avenues.

2. From the school level onwards importance of savings and investment should be imparted to the children. Women investors prefer to invest in avenues that have minimum risk. It is suggested that to attract more women investors; it is necessary to introduce new investment schemes with a minimum level of risk. This can lead to household and economic development.

3. For the household and economic development of our society, it is always recommended to encourage and motivate women members in a family so that their contribution will be very high for all types of developments.

11 Discussion

Previously stated about the dynamic behavior of women investors. Various factors that can affect the investment behavior of women investors can be studied through previous literature. The effect of demographic variables on the women investors who are working are examined in the present study. General behavioral and the presence of various behavioral biases were analyzed in the study. Future studies can mainly focus on the various behavioral biases of women investors and how they can affect the investment attitude of women investors. The findings can be incorporated into future studies. So findings from the study can be used for understanding more about this area will help the countries to initiate necessary actions to enhance the investment opportunities for women. Ultimate results can lead to the economic empowerment and increased standard of living of the people in the country.

12 Conclusion

The changing economic and social conditions affected the investment behavior of women. The effect of various demographic variables on the investment behavior of women is always a matter to be concerned with for future investment plannings. As women are so keen on the risk and safety of their investments, they can make better investment decisions without losing their earnings. As many women investors are getting support from their families, they need only better ideas and information from various channels to enhance their investment avenues wisely. Families supported only by men can get better financial stability by allowing working women to invest in various financial instruments. This will leads to an enhanced standard of living, and household upliftment can be made possible with the joined effort of both men and women. Ultimately this will leads to enhanced investments and consumption; thus, we can achieve economic empowerment to a great extent. This attitude of women investors can provide a positive environment for the household and economic developments.

Limitations and suggestions for future studies
Societal, psychological, and behavioural elements are considered that influence womens' investment decision. Other elements that may influence the decision making in investment were not considred for the study. Further the study is focused on one specific city.

Contribution to the society
The current study is a motivating factor for all women investors, especially working women, to focus and concentrate more on their investment opportunities and to grab the best investment options in the market in order to become a more financially stable person.

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Education Management, Technology, Smart Universities, and Covid-19 Impact

Education-Job Mismatch in the Saudi Labor Market

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Abstract. The study investigates the education-job mismatch among a population
of Saudi workers. Saudi Arabia (SA) is currently transitioning from an exclusively
oil-based economy to a more knowledge-based and diverse one. This process has
necessitated substantial developments across the education sector, to ensure the
country's youths are appropriately trained to meet the needs of this new varied
economy. This study is divided into two main sections. The first section presents
a descriptive analysis of employment trends and labor force participation rates
(LFPR) over the past 20 years. Whereas, the second section investigates the preva-
lence of over and undereducation among different occupational groups, according
to Saudi Classification of Occupation ISCO-08. For the purposes of both anal-
yses, data records for the twenty years from 2000 to 2020 were collected from
the Labor Force Survey of General Authority of Statistics. The analysis reveals
that over time, the LFPR and proportion of individuals in university education has
significantly increased across both genders. The results also demonstrate that over-
education is becoming more prevalent over time, mainly in the clerical, service,
and sales sectors, and is more prevalent among women than men.

Keywords: Over-education · Under-education · Labor force participation rate ·
Middle East and North Africa · Saudi Arabia

1 Introduction

The transition toward a knowledge-based economy globally requires ensuring a sufficient
number of people are able to obtain adequate levels of appropriate and diverse skills. As a
consequence, many nations have been motivated to expand educational attainment rates
in order to achieve their aims. While the primary concern has typically been to expand
educational attainment at all levels, limited attempts have been made to ensure the
capacity of labor markets to absorb highly skilled new entrants [1]. Over-education and
under-education are terms used to describe differing types of education-job mismatch,
namely vertical mismatches, that arise in labor markets. Over-education describes a
situation in which a worker's level of education exceeds the requirements of employers,
whereas under-education is when a worker is not qualified to meet the criteria set by the
employer [2–6].

Over-education, in particular, has attracted more attention from researchers than under-education, due to both its significant and negative impact on people's earnings [7, 8], productivity [9–11] and job satisfaction [12, 13]. Over-education has so far been interpreted as a form of underemployment [14], which is parallel to unemployment, part-time employment, and fixed-term employment [15]. The situation of being unable to access employment due to being over-educated raises the question of why people invest so much in education. From a human capital standpoint, education enhances employees' productivity and efficiency by increasing the level of cognitive stock [16]. From an economic perspective, people should invest in education based on the potential returns in earnings [17, 18]. However, people frequently invest in education because they believe the result will be seniority in the work place, greater social prestige and a better lifestyle [15].

Most notably for this study, McGuinness et al. [19] discovered that the rate of over-education in low and middle-income countries appears to be relatively higher than that in developed countries. However, the research conducted to date in the context of developing countries is still nascent. Similarly, in the Middle East and North Africa (MENA) region, very few studies have empirically examined the issue [20, 21]. There is also a need to conduct comprehensive studies in developing countries, specifically in the MENA region, to enable policymakers to recognize structural weaknesses in both the education system and the labor market to fill the knowledge gap and proceed accordingly.

The rates of return on tertiary education are lowest in the MENA region, where it adds only 8.9% to workers' earnings, less than 50% of the global average of 16.8% [22]. Therefore, this paper contributes to the limited literature available on education-job mismatch in the MENA region by investigating the prevalence of over/under-education in one of the least studied populations, i.e., Saudi workers, which conveys some essential advantages upon this study. Saudi Arabia (SA) has embarked on a development plan termed VISION 2030, which has been designed to ensure the forging of a dynamic, sustainable and diversified economy. As a result of this, SA has made considerable progress expanding access to education to a level at which enrolment is almost universal [23]. Despite the massive Saudi government expenditure on education, accounting for 21.6% of the total national budget in 2018 [24], global reports acknowledge the Saudi labor market faces a critical market mismatch problem [25], as a considerable gap exists between university graduates' level of knowledge and skills and employers' requirements. The Saudi government recognizes the existence of a mismatch in the local labor market, and deems it a priority concern to be resolved.

The following section of the paper consists of literature review, methodology, result section is further divided intotwo section The first section comprises descriptive statistics that provide a comprehensive overview of the Saudi labor market. The second section of the paper investigates educational mismatch by assessing the proportion of over-education and under-education among different occupational groups between 2000 and 2016, based on the International Standard Classification of Occupations (ISCOO-08), then paper discussions and conclusion.

2 Literature Survey

An extensive body of the education-job mismatch literature has focused on developed countries. This is sensible because over-education, by definition, is more common in labor markets where workers' average educational level is high, which is also a typical characteristic of developed countries. Hence, the presence of over-education in developing countries might be deemed to pose a significant concern, as labor markets in developing countries usually would be expected to lack skilled labor [26]. By analyzing the Skills Toward Employment and Productivity (STEP) data and the subjective approach to measuring over-education, a study by Handel et al. [27] found that the average rate of over-education in 11 developing countries was 36%. This percentage was deemed by McGuinness et al. [19] to be much higher than that observed in developed countries, which on average are about 25% based on a subjective approach.

Over-education has different normative implications when observed in developing economies where income is low, average educational attainment is rising and educational quality varies significantly. In line with the majority of developing countries, limited studies on mismatches have been conducted in the MENA region. In most MENA countries, governments play a very active role in educational planning [28]. In recent decades, however, the supply of university graduates in the majority of MENA countries has surpassed labor market demand in many fields of education, with the consequence being a rising unemployment rate among university graduates [28]. These high unemployment rates have not triggered a decline in student enrolments; creating an over-education trap in some MENA countries [29].

2.1 Saudi Context

Similar to governments in many other MENA countries, the Saudi government has developed and expanded its education sector through considerable investment and funding. In 2018, SA spent 21.6% of its total budget on education; a figure that is comparable with similar spending by high-income countries. In the thirteen years from 2005 to 2018, the number of Saudi universities rose from 20 to 70 responding to the increased demand for further education. In 2008, the enrolment rate at higher education institutes was 30% on average, rising to 70% in 2018. The Saudi government provides free education up to graduate level and also allocates a monthly stipend to each student throughout his/her period of study. Despite the massive expenditure on education, the unemployment ratio is high in both male and female university graduates. The comparatively poor employment opportunities for university graduate suggests that academic qualifications alone do not guarantee jobs. Indeed, university graduates frequently lack the necessary skills required by the local labor market [25].

In the Saudi context, only one recent study formally measures over-education among Saudi workers and its impact on workers' job satisfaction and other job related attributes. In 2019, Alzubaidi [30] employed a cross-sectional survey among graduates of a public university in SA and found a significantly negative impact from over-education on Saudi workers' level of satisfaction and organizational commitment, which positively correlated with turnover intentions. This paper expands on work in the study mentioned above, providing a more general overview of educational mismatch associated with over-education and under-education in the Saudi labor market using aggregate level data.

Table 1. Education rates of +15 Saudi population for the year 2000

Year 2000				
	No-Educ	Low-Educ	Univ-Educ	High-Educ
Female	41.32043	50.38305	7.796762	0.1783571
Male	17.91047	70.33405	11.39795	1.1763
Total	30.44471	58.53659	9.553439	0.6651585

3 Materials and Methods

The study adopts a quantitative descriptive approach. The study used past twenty years data from the Labor Force Survey produced by the General Authority of Statistics. The paper is divided into two main sections: (i) a descriptive analysis that observes chief indicators such as labor force participation and the educational competence of the labor force over time, and (ii) the mismatches in the Saudi labor market.

4 Descriptive Analysis of the Saudi Labor Force Participation

In the descriptive analysis, the study explores trends in principal indicators, such as labor force participation and the educational competence of the labor force overtime. Educational level is considered the most important indicator of human capital, and the study references the educational level distribution of labor force. It is generally argued that the more educated the labor force (the better the level of human capital) the more productive the workers. This means that an educated workforce increases productivity throughout all sectors of the economy. SA has made a concerted effort to diversify its economy to reduce dependency on the oil sector. This aim can partially be accomplished with a more educated workforce and by lowering the level of educational mismatch.

4.1 Labor Force Participation

One of the most important indicators of the labor market is the LFPR, which is defined as the ratio of employed to unemployed within the population. Historically, the LFPR for males and females has been low in SA. Low labor force participation by Saudi males resulted from the absence of a strong industrial sector, as the Saudi economy relied mainly on oil. On the other hand, low participation of Saudi females can be attributed to diverse cultural and religious factors. However, over the last 20 years, substantial and observable efforts have been made by the Saudi government to diversify the economy and improve its human capital. One of the dimensions of these efforts has been to increase Saudi LFPR, which is obvious from the statistics. In 2000, the overall LFPR was below 40%, largely due to low female participation, which in 2000 was approximately 10%. This resulted from the overall educational level of females, and the over-reliance on the oil sector, which relies mainly on expatriate workers. In 2019, the overall LFPR

was 66%, with female LFPR accounting for 26%. The significant increase is principally attributable to educational attainment by the Saudi population.

Tables 1 and 2 present the rates of no education, low education, university education and higher education among Saudi nationals aged over fifteen. The tables clearly show that the 'no education' rate dramatically decreased from 2000 to 2018, and university level education significantly increased. The higher education rate increased proportionally, but remained low at around 1%. This can be attributed to the scholarship program (KASP) offered by the Saudi government. For females, the rate of no education fell from 41% to nearly 16%, while the university education rate increased from 7.7% to 24%. For males, the rate of no education decreased from 18% to 4% while university education increased from 11% to 28.7%.

Table 2. Education rates of +15 Saudi population for the year 2018

Year 2018				
	No-Educ	Low-Educ	Univ-Educ	High-Educ
Female	15.91833	60.7502	24.32083	0.7484286
Male	4.164293	64.53841	28.71943	1.722067
Total	10.10614	65	26.83154	1.29675

4.2 Proportion of Educated (Skilled) Saudi Workers in the Labor Force

The previous section discussed changes in the education rate of the Saudi population in the preceding twenty years. The most striking observation in the Saudi labor force statistics over the last 20 years is the decline in 'no education' in both males and females. It fell from more than 30% in 2000, to less than 10% in 2020. Nevertheless, it is important to ask how many individuals from the educated population have joined the labor force. Lack of desire to join the labor force is a consideration here, especially as educated females prefer not to join the labor force for cultural or family reasons. For both males and females, the proportion of university educated workers has certainly increased. For males and females combined, the proportion of university graduates increased from 20% in 2000 to over 40%. The proportion completing higher education also increased, but not as dramatically. The increase in higher education among females has been greatest since 2015, providing opportunities females to enter the Saudi Labor force.

4.3 Unemployment Trends in Saudi Labor Market

Although the statistics above revealed a considerable increase in female educational level, unemployment statistics show female unemployment rates have been highest over the past 20 years. In 2000, Saudi female unemployment was 15%, and in 2019 it reached 30%. Meanwhile the Saudi male unemployment rate was 6% in 2000, reaching 5% in 2019. Firstly, the technical and academic skills acquired by both males and females differ

considerably. Females more often choose humanities and education as major subjects, for which there is high demand in the public sector but limited demand in the private sector. Secondly, many employment opportunities are more easily accessible to male university graduates than females. Finally, the influence of high reservation wages [31]. In SA, similar to other oil-rich countries, female as well as youth employment is significantly influenced by reservation wages, i.e. the minimum wage for which people are willing to work.

4.4   Educational Mismatch in the Saudi Labor Market

Generally, in the literature, over-education and under-education are measured by comparing workers' attained level of education with that required for a particular job. There are two main methods by which scholars classify mismatch measurements; i.e., subjective and objective [6]. This study adopts an approach similar to some extent to the Job Analyst approach which was introduced by Eckaus [32] and delivers objective measure of over/under-education. The Job Analyst approach is commonly measured in the literature using individual-level however, due to the lack of this kind of data in SA, the analysis will be conducted using aggregate data. There are seven major occupation groups reported in the Saudi Labor Force: Agriculture, Animal Husbandry & Fishing, Service Workers, Sales Workers, Clerical Workers, Directors and Managers, Professional & Technical workers, and Production, Tran. Equip. Operation and related work. Based on the International Standard Classification of Occupations (ISCO-08), there are four skill levels. When defining each skill level, the education level required is clearly stated [33]; skill level 1 involves the performance of simple and routine physical tasks. Primary school education and short job training may be required for these kinds of jobs. Skill level 2 consists of operating machinery and equipment as well as ordering and storing information. The minimum required level of education is completion of the first stage of secondary education or completion of specific vocational education. Skill level 3 involves jobs that require technical knowledge in the specialized field. It requires completion of secondary education followed by a study period of higher education for 1–3 years. Finally, Skill level 4 involves jobs that require decision making, problem solving and creativity. A university degree or higher is required for these kinds of jobs.

Based on ISCOO-08 classifications, the following are the skills and educational levels that correspond to each occupation group; Agriculture, Animal Husbandry & Fishing occupation require skill level 1; Service Workers, Sales Workers, Clerical Workers, Production-Equipment Operation and related work, require skill level 2; Technicians and associated professionals require skill level 3; and directors, managers and professionals require skill level 4. Therefore, by using data provided by the Saudi Labor Force, which reports the number of employees in each occupation group at different education levels, the study can estimate the ratios for over-educated and under-educated workers for each group. Accordingly, over-education rate is calculated as percentage of workers with more than the required level of education for each occupation group. Similarly, undereducation rate is calculated as the percentage of workers who have below the required level of education (refer to Table 3 in the Appendix).

4.4.1   Mismatch in the "Directors and Managers" Occupation Group

For directors and managers, under-education can be significant, but over-education is irrelevant. Table 3 shows under-education represents a significant problem in this category, for both males and females. For males, the under-education rate is 34.1% for 2016 despite a significant decline in this rate over time. This may result from government regulations, which require Saudi citizens occupy high ranked positions such as managers or directors. For females, however, the 2016 rate was 10.9%. The number of females in director or managerial level positions was very few in the pre-2011 period, so the under-education rate was variable. However, after 2011, as a result of high job market participation and their overall high education level, females accessed managerial and director level positions. It is anticipated that as older males retire, appropriately educated males and females will fill their positions and the mismatch will decline further.

4.4.2   Mismatch in the "Professional and Technical Workers" Occupation Group

For professional and technical workers, under-education is a significant problem, but there has been decline over the time. For males, the 2016 under-education rate is 25.1%, whereas, for females, it is 14.3% for the same year. The decline in the under-education rate has been rapid for females, especially post-2011, due to the increase in female education rate and the LFPR.

4.4.3   Mismatch in the "Production-Equipment Operation" Occupation Group

In this occupation group, both under-education and over-education are relevant. The under-education rate in 2016 is 25.2 for males and 9.2% for females. Consistent with the other occupation groups, there has been a significant decline in under-education. Over-education stood at around 10% for males and females. Generally speaking, the persistent over-education rate is due to the inadequate number of skilled jobs, reflecting the demand side of the labor market. Moreover, the relatively low share afforded to the non-oil sector, and the lack of diversified economic sectors causes a mismatch.

4.4.4   Mismatch in the "Clerical" Occupation Group

Clerical workers comprised a considerable share of the Saudi Labor force (about 15% in 2016). For clerical workers, both under-education and over-education are relevant. The under-education rate fell to a low 2.6% for males in 2016. For females, the figure is even lower, meaning that under-education is not a problem in this sector. Over-education seems to be a significant problem, standing at a rate of 34% for males and 65.3% for females. For males, over-education is due to the extreme importance and prestige associated with clerical positions. The remarkably high rate for females is connected to their historically low participation in the labor market. Clerical jobs are considered as safe for females not wishing to work in the same job environment as males, and who have family and childcare responsibilities. Thus, highly educated Saudi females find themselves working in the clerical sector, due to the limited availability of skilled jobs in other sectors, and their preference for the clerical sector.

4.4.5   Mismatch in the "Sales" Occupation Group

Both under-education and over-education are relevant problematic in the sales occupation group. In 2000, both males and females were represented at an over 50% under-education rate, partly reflecting the low education rate in general. More recently, in 2016, the under-education rate declined to 20% for males and 12% for females. Over-education was also considered high, at 15.9% for males and 17.6% for females in 2016. Notably, in recent years, a significant proportion of well-educated females have worked in sales to avoid unemployment. Therefore, the rates of over-education in the sales sector, especially for females is expected to increase.

4.4.6   Mismatch in the "Service" Occupation Group

In the service occupation group, both over-education and under-education are relevant. Under-education had declined to 8.3% for males in 2016. Considering this occupation group does not require a high educational level, it is unsurprising that males have a low rate for under-education. The high rate of under-education for females 38.7% reflects the fact that females with low educational level can find a job readily in this sector. Over-education is 13.1% for males and 8.9% for females in this sector and is expected to increase. This is mainly due to the national employment scheme by the Saudi government, 'Nitaqat', which was launched in 2011 to replace non-Saudi workers with Saudis. The scheme obligates private enterprises to hire Saudi workers instead of non-Saudi, who have dominated this sector for decades. The scheme targeted transportation, construction, manufacturing, wholesale and retail, which are all categorized under the service sector. Although this initiative has reduced the national unemployment rate, it has contributed to the prevalence of over and under-education in this sector.

4.4.7   Mismatch in the "Agriculture, Animal Husbandry and Fishing" Occupation Group

This occupation group requires muscle power, so males dominate, and females comprise only 0.4% of total workers. Over-education rates for females fluctuate because of the very low number of workers; and so can be ignored. However, for males, the over-education rate is relatively high, at 42% in 2016. Contrary to other sectors, over-education has increased in this sector. This can be explained with the fact that this sector requires only primary school education and Saudi male education overall has increased. Additionally, some jobs in this sector require a higher educational level because of recent improvements in agricultural technology. This is why more educated people can find themselves working in this sector. For example, 2255 males with bachelor's degree worked in this sector in the year 2016.

5   Discussion and Future Predictions Regarding Labor Market Mismatch

The significant decline in the under-education rates reflect the rise in education rate over time. Moreover, it is predicted that the under-education rate will continue to decrease.

However, the data also suggests the under-education rate is still significantly high among directors and managers, professional, technical and production-equipment operations. Interestingly, in almost all sectors, the under-education rate for females' is lower than that for males, for two reasons. First, the high LFPR for males compared to females. This issue is rooted in the historical and cultural norms of SA. Similar to other MENA countries, males in SA take responsibility for providing for the family, so will accept any job that is offered, even if they do not have the appropriate skills. For females, however, social norms consider motherhood as the most appropriate role for females, and only some jobs are deemed appropriate for females (i.e., teaching, nursing and other white-collar positions). Secondly, Saudi females are significantly more educated than their male counterparts. However, considering the recent trends in educational rate of males and females, as well as the government efforts to diversify the Saudi economy, and the significant increase in female LFPR, it is expected that under-education rates will continue to decline for both males and females.

Regarding over-education; its prevalence is most notable in sectors such as clerical, sales and agriculture, animal husbandry and fishing. Consistent with the literature, over-education is most prevalent among females. According to the theory of differential overqualification [34], women (especially married women) run a higher risk of working in jobs for which they are over-educated. This is because they are restricted to their husbands' or families' selection of their jobs' location. Saudi females are typically more reluctant than males to accept employment located far away from their families. In addition, females prefer specific work environments with fewer working hours, vocational pathways and childcare facilities. Furthermore, the female enrolment rate in higher education is increasing alongside their participation rate in the labor force, explaining the high unemployment rate and high over-education rates in this group.

Overall, the figures presented in Table 4 in the appendix imply a severe under-education problem in the areas of production, equipment operation, directors and managers and service occupation groups remains. Nevertheless, a decline in the severity of this is evident across all sectors, which is a positive indicator. Severe over-education rates in clerical and sales occupation groups have been close to 0 for males and females over the last 20 years. The over-education figures imply no significant over-education problem at present in the Saudi labor market. However, analyzing micro-level data from the Saudi labor market delivers different results. Therefore, this paper strongly recommends measuring over-education and under-education as micro-level data to compare the results.

6   Conclusion

This study contributed to the limited literature concerning education-job mismatch by investigating the prevalence of over-education and under-education among different occupation groups of Saudi population. It utilized data from Saudi labor force surveys for the last 20 years. In the last 20 years, the Saudi LFPR has significantly increased, mainly due to an increase in female employment. In 2018, the proportion of female university graduates in the labor force was about 80%, while this figure was 40% for males. These figures indicate that that the investment in education by Saudi authorities

has improved the overall quality of the workforce; however for females, the impact has been tremendous. The study observed that both over-education and under-education exist in the Saudi labor market. Another interesting observation is that in almost all sectors, females' under-education rate is lower than that of males. In the past, the degree of under-education was alarming, but it has decreased significantly over the recent years, and is expected to continue to fall. Regarding over-education, this is primarily present in the clerical, services and sales sectors, and is more relevant for women than for men, consistent with the literature. The prevalence of over-education in these sectors should signal to policy makers that employment programs must be revised carefully. For example, the Nitaqat program, which aims to replace non-Saudi with Saudi workers might boost the percentage of over-education in some sectors. Moreover, the demand side of the labor market needs to improve employment opportunities for skilled laborers. Due to the lack of micro-level data in the context of SA, the analysis of educational mismatch in this paper was conducted using aggregate level data, which is not a preferred method in the literature. Thus, future research could focus on determining educational mismatch using micro-level data and multivariate regression models to provide clearer feedback to policymakers seeking to reduce potential educational mismatches in the labor market.

Appendix I

Table 3. Mismatch in different occupation groups in SA Labor Market, 2000–2016

	2000	2001	2002	2006	2007	2008	2009	2011	2012	2013	2014	2015	2016
Directors and Managers													
Male													
OverEducated (%)	–	–	–	–	–	–	–	–	–	–	–	–	–
UnderEducated (%)	52.1%	47.7%	45.4%	38.9%	40.7%	41.1%	42.6%	35.3%	40.1%	38.8%	39.1%	35.8%	34.1%
Female													
OverEducated (%)	–	–	–	–	–	–	–	–	–	–	–	–	–
UnderEducated (%)	100.0%	100.0%	28.5%	14.2%	11.6%	6.3%	16.0%	7.6%	10.2%	16.4%	15.3%	7.1%	10.9%
Professional and Technical Workers													
Male													
OverEducated (%)	–	–	–	–	–	–	–	–	–	–	–	–	–
UnderEducated (%)	41.2%	39.5%	36.9%	33.3%	33.0%	33.1%	33.4%	30.4%	30.8%	28.1%	26.5%	22.5%	25.1%
Female													
OverEducated (%)	–	–	–	–	–	–	–	–	–	–	–	–	–
UnderEducated(%)	49.6%	43.3%	41.5%	16.2%	33.5%	24.4%	24.8%	24.1%	21.6%	18.6%	15.9%	15.9%	14.3%
Production-Equipment Operation													
Male													
OverEducated (%)	1.3%	14.8%	2.4%	4.8%	4.4%	0.5%	0.6%	0.8%	0.9%	7.4%	1.1%	4.0%	12.7%
UnderEducated (%)	66.5%	65.3%	65.1%	51.3%	50.3%	49.8%	44.1%	43.8%	44.2%	35.1%	36.0%	34.2%	25.2%

Table 3. (*continued*)

	2000	2001	2002	2006	2007	2008	2009	2011	2012	2013	2014	2015	2016
Female													
OverEducated (%)	31.7%	8.5%	0.0%	12.0%	17.7%	0.0%	0.0%	2.7%	7.3%	20.5%	4.8%	10.1%	9.1%
UnderEducated (%)	68.3%	50.5%	23.3%	57.1%	18.9%	6.8%	31.4%	25.3%	29.8%	9.4%	29.2%	1.6%	9.2%
Clerical Workers													
Male													
OverEducated (%)	9.6%	14.8%	12.1%	22.1%	20.3%	20.1%	20.8%	25.0%	26.1%	25.1%	27.2%	33.7%	33.9%
UnderEducated (%)	25.0%	65.3%	16.6%	9.7%	8.9%	8.0%	8.1%	6.0%	5.5%	6.0%	3.4%	4.2%	2.6%
Female													
OverEducated (%)	19.6%	8.5%	1.4%	45.8%	36.9%	43.1%	50.4%	43.9%	50.2%	58.8%	59.9%	66.3%	65.3%
UnderEducated (%)	7.9%	50.5%	23.5%	5.0%	2.3%	1.6%	0.5%	2.9%	1.7%	1.0%	1.3%	1.3%	0.6%
Sales Workers													
Male													
OverEducated (%)	7.4%	7.9%	6.4%	11.8%	10.3%	8.0%	7.6%	12.2%	11.6%	13.8%	11.7%	15.8%	15.9%
UnderEducated (%)	58.1%	57.8%	54.4%	41.7%	41.2%	43.9%	45.1%	29.3%	37.6%	27.7%	29.3%	25.1%	20.1%
Female													
OverEducated (%)	0.0%	14.3%	0.0%	8.4%	25.3%	29.5%	14.3%	30.4%	33.8%	11.9%	24.5%	17.1%	17.6%
UnderEducated (%)	97.6%	92.7%	100.0%	46.6%	47.2%	38.2%	31.6%	13.0%	23.1%	15.8%	10.7%	22.0%	12.2%
Service Workers													
Male													
OverEducated (%)	5.0%	5.6%	5.4%	7.5%	7.5%	7.6%	5.3%	8.2%	10.1%	11.3%	9.5%	12.0%	13.1%
UnderEducated (%)	51.2%	52.3%	48.4%	31.1%	28.5%	24.9%	22.1%	18.3%	15.8%	14.3%	10.5%	9.0%	8.3%
Female													
OverEducated (%)	1.4%	3.0%	4.9%	6.3%	4.2%	4.8%	4.1%	8.9%	6.6%	7.7%	7.5%	7.5%	8.9%
UnderEducated (%)	86.9%	90.2%	85.9%	68.0%	65.0%	52.9%	44.8%	56.9%	47.6%	49.2%	38.8%	39.5%	38.7%
Agriculture, Animal Husbandry and Fishing													
Male													
OverEducated (%)	14.9%	13.8%	8.9%	20.5%	19.1%	17.2%	22.9%	23.8%	30.3%	30.6%	37.7%	47.7%	42.0%
UnderEducated (%)	–	–	–	–	–	–	–	–	–	–	–	–	–
Female													
OverEducated (%)	21.4%	0.0%	0.0%	4.8%	1.5%	0.0%	0.0%	0.0%	7.7%	13.4%	12.2%	57.7%	81.8%
UnderEducated (%)	–	–	–	–	–	–	–	–	–	–	–	–	–

Table 4. Severity of mismatch in selected occupation groups

	2000–2002	2007–2009	2014–2016
Under education	(%)	(%)	(%)
Production, Tran. Equip. Oper & Related Work			
Male	31.23	17.70	7.46
Female	39.18	10.71	10.88
Directors and Managers			
Male	12.05	6.57	4.12
Female	2.89	1.24	0.97
Professional & Technical			
Male	3.38	0.00	0.00
Female	0.20	0.00	0.00
Service			
Male	9.38	3.51	0.31
Female	56.72	26.07	5.50
OverEducation	(%)	(%)	(%)
Clerical			
Male	0.44	0.17	0.39
Female	0.29	0.46	0.48
Sales			
Male	0.28	0.34	0.72
Female	0.00	0.00	0.44

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Graduates' Perception of Corporate Social Responsibility: An Empirical Evidence from Higher Educational Institutions in Sultanate of Oman

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Abstract. Motivated by Transparency International's Corruption Perception Index (CPI) results, this paper investigated Omani students' degree of conviction on ethical behavior, their perception of the positive role of corporate social responsibility (CSR) in achieving organizational long-term effectiveness and their sensitivity to CSR over organizational short-term profitability. A survey was conducted among the graduate and post-graduate students studying in 39 different higher educational institutions (including public as well as private) across the Sultanate of Oman, where more than 1500 students participated. The study findings revealed that Omani students had a moderate level of conviction to ethics and see the positive role of CSR in organizational long-term effectiveness. The findings have implications for the educational institutions and national regulating bodies who can use educational programs curricula as a tool to develop social responsibility among the prospective workforce of Oman.

Keywords: Corporate Social Responsibility · Business ethics · Ethical behavior · Stakeholder view · Higher education

1 Introduction

Corporate Social Responsibility (CSR) is a continued commitment of the business 'to behave ethically and contribute to economic development while improving the quality of life of the workforce, their families, the local community and society at large [2, 3]. Being ethical while doing business is easier said than done in the corporate world. Several scandals and revealed corruption cases have fostered a considerable interest in the field of business ethics for being more socially responsible while achieving stated and unstated official goals. Firms face few societal demands apart from generating revenues such as the betterment of the society including environmental protection and charities to resolve some social issues. These demands can only be fulfilled when these firms hire employees who are ethically aware. It is evident that the future survival of CSR lies on

the shoulders of the new generation's attitudes, and their positive mindsets towards its nexus with business firm's long-term effectiveness. A study reveals that personal values, gender, religion, political ideology, the academic field of study, and volunteerism influence students' mindset for CSR. Thus, there is a significant relationship between CSR and gender and education [4]. The research reported that females behave more responsibly and own more responsibilities than males [5]. Similarly, the study of McDonald and Scott affirmed that females observe greater ethical corporate actions and give more social and moral orientation compared to males [6]. Prior literature confirms that ethical behavior can be improved through formal education and training at different levels, starting from school to the tertiary level; assuming that the higher the qualification, the more responsible and ethical people would be in professional life. It is a dilemma that in few societies, females have lesser access to higher education where they can build their morals and ethics through academic learning. However, societies improve through positive ethical attitudes and ethical behavior [7]. Subsequently, decisions pertaining to work is an outcome of the different influences from school, college, family and environment in the context of social, demographic, psychological and social situations [8]. CSR has an important role in the process of the professional choice of the new generation. Firms try to attract the new generation based on their CSR reputation and also their work experiences in these organizations alter or modify the attitude of the employees towards business ethics [1].

The current study focuses on determining the perception of graduates regarding the CSR to understand if the current generation is more conscious and sensitive for ethics and CSR, and if they consider it a responsibility of business organizations to protect the environment and take care of society as long as they can. Since the current generation in receiving higher education today has to join the business industry in future, it will be in their hands to ensure that social and environmental protection is ensured by companies [9]. Their education regarding ethics and CSR is therefore very important as it informs them about their responsibilities towards the society and environment. There is higher likeability that their preparedness and knowledge of ethical work practices will increase their intention of engaging in socially responsible activities and decisions in their professional life.

The Research Objectives and Hypotheses: As per Transparency International's [10, 12] Corruption Perception Index (CPI), Oman is the 53rd least corrupt nation out of 175 countries with a score of 52 (on a scale of 0: highly corrupt to 100: highly clean) in 2018 [10]. It jumped fifteen places from a score of 44 in 2017 and 45 in 2015 & 2016. This jump secured third place for Oman among Arab countries, with the United Arab Emirates in the first place (with a score of 70) and Qatar in the second place (with a score of 62) [11]. The last 15 years' trend in CPI (Fig. 1) highlights that the current decade (2011–2018) has witnessed a dip in the overall score of Oman compared to the period of 2000 to 2010, indicating that Oman was more corruption-free in the last decade compared to now. Nations care about their corruption index to determine the condition of the country since this index tells many things about a country and builds a reputation around the world. The business ethics scholars should care about Oman's TI score to ensure that its scores improve over the period of time. Motivated by the decline in Oman's CPI scores, the general objective of this paper is to investigate how young Omanis (who will be

Oman's future leaders and decision-makers) perceive CSR and ethics and their role in short-term efficiency and long-term effectiveness of the profit-oriented businesses. Also, the study determines their perception about their preparedness related to ethics and CSR as part of their teaching and learning. More specifically, this paper looks into the research question *How do Omani graduates perceive CSR in practice?* The answer to this question would enable the policymakers in academia to determine if the current degree programs imparted in Omani universities are developing a sense of social responsibility among their graduates and if their teaching-learning process contributes positively to students' ethical behavior. Based on the questions, the following hypotheses are tested:

Hypothesis-1: Omani graduates' degree of conviction on ethical behavior is significantly strong.
The degree of conviction on the ethical behavior of Omani graduates will be determined to comprehend if they hold CSR values strongly or moderately. *Hypothesis-2: Omani graduates perceive a positive role of CSR in achieving organizational long-term effectiveness.* This hypothesis has been designed because it is important to know whether they think CSR is useful in a company's long-term performance. *Hypothesis-3: Omani graduates exhibit greater sensitivity to CSR over organizational short-term profitability.* This hypothesis has been designed because it is important to know whether they prefer CSR over short-term profitability. *Hypothesis-4: Difference between the students based on their personal factors [a) gender, b) age, c) study program, d) work experience], in their sensitivity to CSR is significant.* It is not always necessary that each student have the same thought process, the difference in their perspectives may be because of few personal factors as stated therefore, it is also important to determine how these factors play a crucial role in building perceptions. *Hypothesis-5: Omani graduates are confident that they are well-prepared for dealing with ethical issues by the university through its ethics embedded curricula.* It is necessary to determine what graduates think about their current education programs curricula, if it is preparing them to understand & deal with ethical issues.
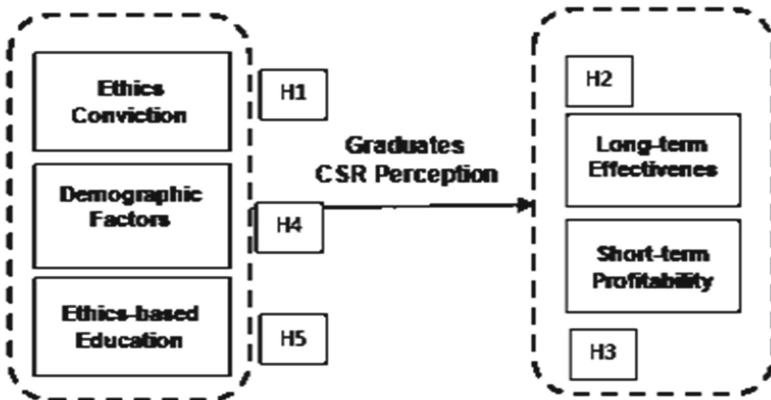
Fig. 1. Research framework

2   Materials and Methods

Based on the literature review, the study proposes (Fig. 1) that the graduate's conviction to ethics, their personal factors and their education on ethical issues influence: (a) their perception towards the role of CSR in organizational long-term effectiveness and (b) their choice between being profitable or ethical in conducting business. To achieve the objectives of the study, a self-administered survey was conducted among the graduate and post-graduate students studying in 39 different higher educational institutions (including public as well as private) based across the Sultanate of Oman, using multi-sampling techniques. 93% of the sample are students in the 4-year undergraduate program, thus, the study informs us about the perspectives of undergraduate students. The students registered in different disciplines (mainly business & economics, information technology, applied sciences, engineering, arts & humanities, medical studies, law and so on) and in different programs (graduate and undergraduate) of different universities (in all Oman states) were targeted to be part of this survey, by employing stratified, snowball and convenient sampling techniques. Their sensitivity to CSR was assessed through a structured self-administered online survey through SurveyMonkey. To determine the graduates' perception of the role of organizations' ethics in its long-term effectiveness and their inclination to CSR over short-term profitability, 13 statements from PRESOR scale developed by Singhapakdi was adopted [14]. The study approval was obtained from University Research and Enterprise Committee. The procedures used in the study followed the ethical guidelines. The initial screening for outliers, missing values and straight-lining problems removed 23 data sets. Fifteen hundred and ninety-six (1596) responses were used for final analyses. The reliability analysis was conducted using Cronbach's alpha for all the scales for measuring the reliability of the scales. The score remained 0.64, 0.789, 0.731, 0.768 for DC (degree of conviction), LTE (long-term effectiveness), STP (short-term profitability), EBE (ethics-based education) scales respectively, which were acceptable based on Nunnally (1978) cut off alpha value of 0.5.

3   Results and Discussion

3.1   Demographic Profile of Omani Graduates

The demographic assessment of the graduates (Table 1) identified that the sample included participants from different age groups, gender cohort, educational programs, universities, and work-related experiences.

3.2   Graduates Conviction Towards Ethics

Hypothesis-1 was tested to determine the degree of Omani graduates' conviction towards ethics if they hold moderate or strong opinions pertaining to being socially responsible. Statement 16 (if you are a manager, then you would rather have your company earn modest profit with strong ethics than earn a high profit with low ethics) assessed moderate level and statement 17 (if you are a manager, then you would rather have your company suffer a loss with strong ethics than earn a profit with low ethics) assessed stronger

level of conviction of the participants towards ethical behavior, following Fitzpatrick and Cheng [13].

The results stated that around 56% of students agreed (or strongly agreed) with the statement compared to 38% of students disagreeing (mean value = 3.17). The findings supported that graduates believe in being ethical managers with earning modest profits compared to be unethical leaders with higher profit returns, depicting their moderate conviction to ethical leadership. Next, the student's responses to the statement determining their strong level of conviction towards ethics highlighted that the percentage of students disagreeing (39.8%) remained higher than those who agreed (31.9%), with a mean value of 2.89. Based on the given results, we may conclude that the students have a moderate level of conviction towards adopting ethical behaviors being in leadership positions but not strong enough to convince them to choose loss over profits while in support of social responsibility, thus, rejecting the hypothesis.

3.3 Graduates Perception Towards CSR and Organizational Effectiveness/Profitability

Subsequently, hypothesis-2 was tested to determine the perception of students of the role of CSR in achieving or enhancing organizational long-term effectiveness. In response to the positively worded statement (e.g. good ethics is often good business), the high value would indicate a student's positive attitude towards CSR whereas the low value would indicate his/her negative approach to it. All negatively worded statements were recoded to make the data look in same direction. The mean values were calculated for all the eight PRESOR statements which remained higher than 3 (out of 5 maximum range

Table 1. Demographic profile of Omani graduates.

Age	Frequency	Year of study	Frequency
18 year and less	138	Bachelors year-1	560
19–22 years	590	Bachelors year-2	369
23–26 years	568	Bachelors year-3	213
27–30 years	201	Bachelors year-final	354
31 years & above	88	Masters year-1	66
		Masters year-final	21
Gender		Country of citizenship	
Male	653	Oman	1566
Female	939	G.C.C/Middle East	24
		Others	06
Work experience		Ethics-based course learning	
No	1095	No	335
Yes	482	Yes	1251

values). The mean value (3.41) remained highest for statement 7 were more than 65% of students agreed or strongly agreed that the overall effectiveness of a business can be determined based on their ethical behaviors. Statement 6, with mean value of 3.39, confirmed that more than 62% of students agreed with the importance of an organization's social responsibility behavior in its long-term productivity. Subsequently, the students acknowledged that employees' high morale should be the prime focus of the organization (in statement 5 with a mean value of 3.34). Alongside, statement 2: 'good ethics is often good business', statement 4: 'CSR (...) the most important thing a firm can do for long-term viability, and statement 8: 'CSR (...) critical to the survival of a business enterprise' remained close with the mean values of 3.32, 3.27 and 3.26, respectively. The mean values of Statements 1 & 3 remained at 3.04 and 3.11 respectively, proving the firmly established attitude of the students towards organizations being ethical despite grave situations like that of losing market competitiveness or chances of survival. The mean values of 3 and more for all the eight PRESOR statements, lend support for hypothesis-2, accepting those Omani students perceive a positive role of organizations' social responsibility behavior in its long-term effectiveness.

The results for PRESOR statements 9 to 13 were calculated for testing hypothesis-3: that Omani graduates hold CSR superior to organizational short-term profitability and efficiency. The findings suggested that more than 67% of students affirmed that social responsibility must be an organization's first priority (statement 13) with the highest mean value of 3.41; followed by the mean value of 3.22 for statement 9, ascertaining that Omani graduates believe that businesses have a social responsibility beyond profit-making. The mean values of statements 10 and 11 remained at 3.10 and 3.04 (respectively), which confirmed that more than half of the students agreed that organizational social responsibility comes before profit-making or achieving efficiency. However, statement 12 depicted students' sensitivity towards stockholders over business ethics, meaning that investors' satisfaction and happiness is above everything else (lowest mean-value of 2.94). The findings concluded that Omani graduates exhibited more concern for the organization's ethical behaviors compared to short-term profitability or efficiency; however, on the contrary, they prioritized stockholder's happiness over anything else, thus, accepting hypothesis-3 partially.

3.4   Graduates Personal Factors and CSR Sensitivity

The series of t-tests were conducted to determine the differences between the graduates' sensitivity to CSR based on their gender, age, study program and work experience (hypothesis-4). The results indicated no non-significant difference between male and female perception of CSR except for statement 4 (with p-value = .085**). However, the findings indicated that participants from different age groups responded differently to PRESOR statements no. 5, 7 and 11, with significant p-values of 0.01*, 0.02* and 0.01*, respectively, indicating that students developed a greater sense of social responsibility at the age of twenty-three and above compared to those who are younger (aged 22 years and below), confirming the prior work. ANOVA test was undertaken to determine the significant differences in CSR perception among the graduates (CSR sensitivity) enrolled in different programs (i.e. business/economics, information technology, applied sciences, engineering, arts/humanities, medical studies, law, and miscellaneous) across

the Omani higher education institutions, to find if people from particular occupations have higher ethical values compared to rest. The mean values of the groups affiliated with different programs identified that the top three ranks were shared mainly by the programs of Medical Studies, Law and Engineering across the PRESOR statements (except for statement 10) significant with a p-value higher than 0.05, indicating that the students from these programs had a higher sense of social responsibility. The findings accepted hypothesis 4 partially.

3.5 Ethical Awareness Imparted in Omani Higher Education Institutions

Lastly, hypothesis 5 was tested to assess the views of the Omani graduates related to their degree programs, if their education is transforming them into ethical members of society through their learning and training on ethical issues. Fifty-nine percent (59%) of graduates believed that they were getting well-prepared on the ethical dimension by their higher education with a mean value of 3.33; however, 32.4% of them disagreed with the notion that education is imparting any CSR sensitivity among them. Thus, accepting the hypothesis-5. The consolidated study findings are given in in Table 2.

4   Conclusion and Future Directions

The study investigated the CSR sensitivity of the Omani graduates enrolled in different specialized programs in both public and private sector universities from all over Oman who will be the future workforce and business leaders of Omani business centers and hubs. The findings affirmed that Omani students see the positive role of CSR in business long-term effectiveness and viability and believed that being ethical to society should be the priority of the business firms. They also believed their higher education has prepared them well to deal with ethical issues. Having these mindsets are crucial to furthering the CSR efforts of organizations in Oman. Although the Omani students believe their higher education has prepared them well, there is still much more room for deepening the

Table 2. Study hypotheses findings

H 1: Omani graduates' degree of conviction on ethical behavior is significantly strong	Rejected
H 2: Omani graduates perceive a positive role of CSR in achieving organizational long-term effectiveness	Accepted
H 3: Omani graduates exhibit greater sensitivity to CSR over organizational short-term profitability	Partially Accepted
H 4(a-d): [Personal factors] difference between the students in their perceptual assessment of the benefits of CSR to organization's success is significant	Partially Accepted
H 5: Omani graduates are confident that they are well-prepared for dealing with ethical issues by the university through its ethics embedded curricula	Accepted

students' understanding of CSR and ethical behavior through intensive formal training and education. Also investigations need to be expanded and other stakeholders like business firms and government bodies need to be taken into consideration to determine their readiness for accommodating CSR sensitized workforce and leaders in the future.

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The Effect of Financial Literacy on Personal Financial Distress from Palestinian University Employees Point of View

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Abstract. The objective of this study is to examine the influence of financial literacy on personal financial distress from Palestinian university employees point of view. A questionnaire was created using a descriptive-analytical method to collect data from the Palestinian university employees in the Gaza Strip. The data from 223 respondents was analyzed using multiple regression analysis. The findings demonstrated that the dependent variable (personal financial distress) was influenced by the independent factors (financial knowledge, financial attitude, and financial behavior). While this study builds on past research, it also gives information that academics and practitioners may utilize to decrease personal financial distress.

Keywords: Personal financial distress · Financial knowledge · Financial attitude · Financial behavior · Palestine

1 Introduction

Financial literacy is a global issue that impacts almost every country. A suitable level of financial literacy is essential for a person's and his family's financial well-being. Consumer behavior can be influenced by poor money management, making them more vulnerable to financial calamity. Raising financial literacy knowledge is becoming increasingly important since it can reduce the risk of being misled when making investment decisions [1, 2]. People with a better level of financial literacy are more confident in making personal financial decisions, and their monetary results are more suitable, according to De Bassa Scheresberg [3]. When making their own financial decisions, they employ both saving and investing financial tools. They're also more inclined to take out high-interest loans. People with less financial expertise, on the other hand, prefer to limit their financial decisions to ongoing obligations, such as using credit cards instead of more cost-effective options. People must have sufficient financial literacy in order to enhance their level of living. However, several studies have found that individuals throughout the worldwide, including in Palestine, are financially illiterate, and that action is needed to solve this problem [4, 5].

Individual factors of personal financial distress have always sparked the interest of social scientists. While social scientists might not have been able to investigate all the

causes of financial distress, it is critical to have a deeper understanding of how individual disparities in financial knowledge and behavior lead to personal financial distress [6]. As a result, it's crucial to understand how a person learns to make sound financial judgments [7]. Combining financial knowledge, attitude, and behavior in a model will result in a thorough comprehension of the subject [8]. While conceding the difficulty of developing a multidisciplinary measure, Potrich et al. [9] emphasized the need of a variety of financial literacy measures aimed at achieving a minimal level of financial knowledge, attitude, and behavior. Except for financial behavior, it is obvious that financial literacy has not been researched as a developmental process [8]. As a result, to comprehend the causal link between knowledge, attitude, and behavior in a financial literacy framework, which is the prime purpose, a thorough study is required.

In financial literacy research, econometrics analysis is frequently employed. The current paper, on the other hand, employs a novel approach to examining financial literacy in general. Using a sample of university employees in the Gaza Strip, Palestine, the current article adds to the previous literature by exploring how financial literacy is developed through the interplay of behavioral components of individuals, such as financial knowledge, attitude, and behavior. People's financial decisions are impacted by their geographical location, according to Stolper and Walter [10]. This will assist competent authorities in the development and execution of context-specific initiatives.

The significance of this research derives from the lack of empirical data on the impact of financial literacy on personal financial distress. In other words, there hasn't been much research on the relationship between financial literacy and financial distress. Few researches have looked into this relationship, but not on Palestine. The current study, on the other hand, focuses on the impact of financial literacy on personal financial distress from the perspective of Palestinian university employees.

The remaining parts of the paper are arranged as follows: Sect. 2 develops the research model and hypotheses. The methodology is explained in Sect. 3 of the paper. Section 4 presents the study's findings, and Sect. 5 wraps up with a discussion of the findings, limitations, and further research.

2 Theoretical Background

2.1 Financial Distress

Financial distress is a highly personal experience. Two persons in the same financial situation may be in different levels of financial distress [11]. Financial distress is becoming increasingly frequent in society, with 50% or more of those polled experiencing moderate to high levels of stress and worry about money [12, 13]. Low self-esteem [14] and discontent with one's financial situation [15] have both been connected to financial distress. Insufficient income and ineffective cash flow management behavior have been linked to financial distress in previous research [16]. To be successful, one must be able to create and implement a financial strategy [17], resist temptation [18, 19], and cope with social comparisons [20].

2.2 Financial Knowledge

Financial knowledge is described as an adequate understanding of personal finance facts, and It's the essential to good individual financial planning [21, 22]. According to previous studies, developing nations' financial understanding is lower than that of industrialized countries [23–25]. Despite the fact that many studies have shown that A person with a high degree of financial knowledge might not have had a favorable opinion of themselves or be adept at managing their finances [26, 27], many studies have also shown that A person with a high degree of financial knowledge might not have had a positive self-perception of their ability to manage money. We included financial knowledge because previous research has shown that it can encourage favorable financial behaviors like timely bill payment, saving and investing, wise credit card management [28], getting a solid retirement plan [25], increased involvement in financial markets, and larger usage formal sources of borrowing [29]. When gaining financial knowledge, Willis [30] argues that an individual will constantly assess the cost and return. The degree of education, kind of employment, and government pensions system have all had a substantial influence on working persons' financial knowledge in Malaysia [31]. According to Hung et al. [7], an individual's financial behavior and abilities are impacted by his/her financial knowledge and confidence that might or might not be connected to real knowledge. As a result, there is a distinction between an individual's actual and perceived financial knowledge. As a consequence, Huston [32] identified a research problem caused by the difference between perceived and real financial understanding, which might inhibit proper individuals' financial techniques. Based on the preceding, we propose the following hypothesis:

H1: Financial knowledge positively influences financial distress.

2.3 Financial Attitude

Financial attitude is a term used to describe a person's predisposition to be concerned about money. It's the capacity to plan ahead of time and keep a savings account that counts. According to Bhushan and Medury [33], the focus should be on creating positive financial attitudes in the country's population in order to improve financial literacy across generations. After then, and only then, can the true advantages of any financial education program be appreciated. Financial attitudes, according to Ajzen [34], are the product of decision-making, and they may be created through their economic and non-economic beliefs. Education has the potential to improve personal financial attitudes and reduce dependency on credit cards, according to Ibrahim and Alqaydi [35]. When making an investment choice, attitude could be attributed to the psychological proclivity to choose the best and second-best options after weighing the pros and cons, in other words, to promote particular behaviors [36]. In addition to financial knowledge, financial attitudes and intrinsic behavior play a role [31]. Only few researches have looked at the effect of one's financial attitude on one's financial practices and behaviors. For example, Agarwalla et al. [37]; and Potrich et al. [9] evaluated financial literacy to include knowledge, attitude, and behavior. It is clear that higher financial knowledge and attitude may affect financial behavior, and that good financial management techniques result from a favorable financial attitude [38]. Bir [39] observed that among fresh graduates,

financial attitude has a stronger effect on financial knowledge in terms of financial management. In the context of financial self-belief, Serido et al. [8] discovered that subjective financial knowledge is substantially related with financial attitude. We predict the following hypothesis based on the foregoing:

H2: Financial attitude positively influences financial distress.

2.4   Financial Behavior

Paying payments on time, putting money aside for future requirements like emergencies and retirement, and avoiding excessive debt are all examples of financial management [40]. Since the financial crisis of 2008, the study of financial knowledge, especially its elements like attitudes and behavior, has sparked growing interest. How effectively we can foresee financial and economic processes is determined on our ability to grasp society's attitudes and behaviors toward money, and the traits of other social groupings with similar beliefs and behaviors [41]. Financial behavior is one of the most important aspects of financial literacy, although financial knowledge and attitude come first [9, 42, 43]. Financial knowledge, according to a longitudinal study, promotes financial self-belief (it contains financial attitude), that impacts financial behavior and, as a result, influences a person's financial and overall well-being [8]. Studies involving credit card holders may be used to investigate the link between financial attitude and financial behavior. A correlation was observed between credit card consumers' attitudes and their behavior [44, 45]. Prior research supports the premise that financial education programs influence financial attitudes, which in turn impact financial behavior. Students who received financial education showed a better financial attitude and conduct a year later when compared to the control group [46]. We form the following hypothesis based on the above:

H3: Financial behavior positively influences financial distress.

Figure 1 shows the structural model of the study. In this model, the dependent variable (financial distress) is related to the independent variables (financial knowledge, financial attitude, and financial behavior).
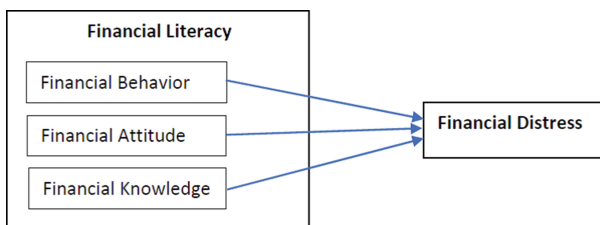
Fig. 1.   The research framework

3 Methodology

3.1 Participants

The questionnaire was completed and returned by 223 participants, as indicated in Table 1. In the table, the results of the demographic variables were presented.

Table 1. Profile of respondents ($n = 223$)

Variables	Groupings	No. of respondents	%
Gender	Male	172	77.1
	Female	51	22.9
Work type	Academic	115	51.6
	Administrative	87	39
	Services	21	9.4
Years of experience	Less than 5	19	8.5
	6–10	26	11.7
	11–20	134	60.1
	21–30	42	18.8
	More than 30	2	0.9
Age	Less than 25	6	2.7
	26–35	27	12.1
	36–45	110	49.3
	46–55	65	29.1
	More than 55	15	6.7
Income	Less than 600$	77	34.5
	601–1200$	69	30.9
	1201–1800	29	13
	1801–2400	27	12.1
	More than 2400$	21	9.4

3.2 Procedures

To describe the current situation and respond to critical questions concerning the influence of financial literacy on personal financial distress from Palestinian university employees point of view, the descriptive approach was utilized. As a result, the survey, which was performed utilizing a Google form, was the major technique of data collecting for this study. The URL for the Google form was extensively shared on social media (Facebook, WhatsApp, and emails). To comply with local language constraints,

the original questionnaire was correctly translated into Arabic. It was then evaluated and pilot tested for correctness by two fluent Arabic speakers. IBM SPSS software version 21 was used for statistical analysis.

3.3 Measures

The questionnaire employed a 5-point Likert scale, with 1 representing strong disagreement, 2 representing disagreement, 3 representing no opinion/neutral, 4 representing agreement, and 5 representing strong agreement. There were four sections to the survey. Seven questions based on Mien et al. [21], Garman and Forgue [22], and Klapper and Panos [25] are used to assess financial knowledge in the first segment. Financial attitude was researched by Bhushan and Medury [33], Ibrahim and Alqaydi [35], Potrich et al. [9], and six items were established based on their findings. Financial behavior is analyzed in the third phase using seven questions based on Németh and Zsótér [41], Fernandes et al. [42] and Lusardi and Mitchell [43]. Personal financial distress is analyzed in the last phase using eight questions based on Lajuni et al. [11], Bagwell and Kim [12], and Drentea and Lavrakas [13].

4   Results

4.1   Factor Analysis

To see if the factor analysis was applicable for the research, the KMO and Bartlett's tests were utilized. The reliability test results should be more than 0.7. The results of the Bartlett's Sphericity test should also be less than 0.05. The KMO value of 0.746 above the acceptable threshold of 0.000, suggesting that this analysis is adequate for the research.

One principle factor is rotated using the varimax normalization to generate the factor score coefficient matrix formed by principal components analysis [47–50], as shown in Table 2. The factor has 28 items. According to the research, the lowest loading threshold for factor loadings on various scales is 0.30 [51–54]. Table 2 shows that all of the loadings are more than 0.30, indicating that the construct validity of the scales has been retained.

4.2   Hypotheses Testing

Multiple regression analysis was employed to explore the link between the independent factors (i.e. financial knowledge, financial attitude, and financial behavior) and the dependent variable (i.e. personal financial distress). The goal of the multiple regression study was to see how independent factors influenced personal financial distress.

Table 3 shows that independent factors account for 51.4% of the variation in personal financial distress (adjusted $R2 = 0.514$). Because the F value was substantial at 0.000, the model's quality was validated. Table 3 demonstrates that personal financial distress was positively associated to financial knowledge ($t = 3.021$, $p = 0.000$), financial attitude ($t = 2.052$, $p = 0.041$), and financial behavior ($t = 3.802$, $p = 0.000$). As a consequence, the findings revealed that H1, H2, and H3 were strongly supported by the analysis, respectively.

Table 2. Reliability and factor loading of the constructs.

Construct	Item	MV	SD	FL	Cronbach's α
Financial knowledge	1	3.43	.954	.773	.767
	2	3.28	.975	.743	
	3	3.51	.953	.734	
	4	3.61	.822	.728	
	5	3.15	.876	.749	
	6	3.37	.764	.756	
	7	3.42	.864	.754	
Financial attitude	1	3.43	.934	.744	.756
	2	3.61	.926	.786	
	3	3.54	.976	.780	
	4	3.32	.944	.754	
	5	3.59	.947	.761	
	6	3.52	.976	.763	
Financial behavior	1	3.34	.864	.727	.759
	2	3.63	.768	.758	
	3	3.67	.799	.768	
	4	3.28	.957	.745	
	5	3.28	.964	.728	
	6	3.39	.839	.733	
	7	3.72	.964	.783	
Personal financial distress	1	3.51	.876	.764	.786
	2	3.61	.997	.782	
	3	3.73	.976	.765	
	4	3.45	.889	.774	
	5	3.56	.978	.774	
	6	3.58	.792	.769	
	7	3.61	.978	.758	
	8	3.48	.894	.796	

Table 3. Results of multiple regression analysis.

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	3.980	.604		6.587	.000
	Financial knowledge	.284	.146	.204	3.021	.000
	Financial attitude	.299	.146	.153	2.052	.041
	Financial behavior	.545	.143	.324	3.802	.000

Notes: Dependent variable: personal financial distress; adjusted $R^2 = 0.514$, $F = 135.461$, and sig. $= 0.000$

5 Discussion

5.1 Discussion of Findings

This study examines the link between the independent factors (financial knowledge, financial attitude, and financial behavior) and the dependent variable (personal financial distress). Financial knowledge has an impact on personal financial distress. This is consistent with prior studies, which has shown that it can drive healthy financial behaviors including timely bill payment, saving and investing, wise credit card management [28], having a proper retirement plan [25], greater participation in financial markets, and increased use of formal sources of borrowing [29]. Willis [30] claims that when obtaining financial knowledge, a person would continually weigh the cost and benefit. The degree of education, kind of occupation, and government pensions system all have an influence on working citizen's financial knowledge in Malaysia [31].

The findings also indicated a connection between financial attitude and personal financial distress. According to Ajzen [34], financial attitudes are the consequence of choice and may be shaped by one's economic and non-economic ideas. Education aims to develop personal financial attitudes and reduce dependency on credit cards, according to Ibrahim and Alqaydi [35]. When it comes to investing, attitude could be attributed to the psychological propensity to pick the best and second-best alternatives after assessing the advantages and disadvantages, or to encourage certain behaviors [36]. In addition to financial knowledge, financial attitudes and intrinsic conduct have a role [31].

Furthermore, the studies demonstrated a link between personal financial distress and financial behavior. This is consistent with prior research, which found that financial behavior is the most essential part of financial literacy, followed by financial knowledge and attitude [9, 42, 43]. According to a longitudinal research, financial education increases financial self-belief (that contains financial attitude), which influences financial behavior and, in turn, impacts a person's financial and general well-being [8]. Studies

involving credit card holders may be used to investigate the correlation between financial attitude and financial behavior. A correlation was observed between credit card consumers' attitudes and their behavior in these studies [44, 45].

Depending on the aforementioned, financial knowledge, attitude, and behavior are all predicted to have a favorable impact on financial distress. As previously stated, financial distress is becoming more common in community, with 50% or above of respondents indicating moderate to high degrees of financial stress and anxiety [12, 13]. Financial distress has also been linked to low self-esteem [14] and dissatisfied with one's financial condition [15]. Previous research has connected insufficient income and inadequate cash flow management behavior to financial distress [16]. To be successful, you must be able to plan and execute a financial strategy [17], resist temptation [18, 19], and deal with social comparisons [20].

5.2   Limitations and Further Research

Contextual and application constraints were among the study's empirical findings. We've drawn some inferences based on replies from the Palestinian university employees in the Gaza Strip. As a result, generalizations concerning Palestinian university employees are unattainable. Because the study only looked at the Palestinian university employees in the Gaza Strip, the findings are only applicable to the Gaza Strip region. The findings may be applicable to rising economies with comparable cultural foundations, such as Palestine, but they may not be useful for areas with distinct cultural conditions.

The researchers recommend that the model be re-examined in future studies to include Palestinian university employees in the West Bank. In addition, the model may incorporate moderating and/or mediating aspects to aid understanding of the current situation's linkages and mechanisms.

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Factors Affecting Students' Satisfaction with University College of Applied Sciences, Gaza

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Abstract. This research aims to examine factors that influence student satisfaction with University College of Applied Sciences (UCAS), Gaza. To collect data from all UCAS students, a questionnaire was developed utilizing a descriptive-analytical technique. Multiple regression analysis was used to evaluate the data from 317 respondents. The findings revealed that the independent variables (quality of education services, cost of education services, and physical environment) had an impact on the dependent variable (satisfaction of UCAS students). While this research adds to previous work, it also provides data that academics and practitioners can use to improve student satisfaction.

Keywords: Healthcare professionals · Responsiveness · Diversity of e-health services · Data and information confidentiality · Citizens' satisfaction · Palestine

1 Introduction

The service industry has grown increasingly essential in the present socioeconomic setting [1]. Continuous improvement of customers' (users') service is crucial for a company's success in today's highly competitive, dynamic, and sophisticated business climate [2, 3]. Education is no exception, particularly higher education. Higher education is essential for the development of human resources, which is beneficial to the nation's social, cultural, and economic development. These institutions have changed since the 1990s. According to Oldfield and Baron [4], the higher education business is attracting a significant number of students and has become increasingly sophisticated and competitive. As a result, providing effective service in this industry takes on a whole new meaning and urgency. Furthermore, in this industry, the idea of quality is difficult to define. The relevance of service quality and its measurement in higher education has been emphasized in several research. Despite this, there is no universal agreement on its dimensions, and there is no optimal approach to define and quantify service quality yet [5].

Higher education services, unlike other services, are long-term and ongoing, requiring students' cognitive engagement and meeting their requirements through a variety of service providers. Educational services, on the other hand, are distinct from other

professional services in that they play a vital part in the lives of students who require a great deal of desire and intellectual ability to achieve their objectives [6]. The student's motivation is critical to his or her successful participation in the lengthy and ongoing educational process. It's a circular process in which quality services given by institutions stimulate students to participate in the educational process, which increases the educational outcome's quality [7]. The student's motivation is critical to their cognitive participation in the educational process. However, educational services vary from other professional services in numerous aspects, according to scholars in this field: Educational services are quite important in the life of a student. Students, on the other hand, require a great deal of desire as well as intellectual abilities in order to achieve their objectives [6].

The current market is seeing increased competitiveness as a result of factors such as mature markets and fast technological development [8]. Universities and colleges are under pressure to discover new methods to generate revenue as a result of growing competition [9]. Universities have grown increasingly marketing-focused in the struggle to achieve their goals ahead of schedule since the 1990s [10]. According to Drummond [11], the development and commercialization of higher education has resulted in widespread use of marketing strategies. Higher education institutions, according to Hanna [12], have both external and internal images. As a result, it is critical to assess student satisfaction.

The significance of this research stems from its topic. Obviously, the magnitude of competition in the Gaza Strip in comparison to its geographical area and population requires them to come up with innovative ways to overcome these constraints, the most significant of which is to consistently enhance their performance [13]. As a result, the UCAS has worked hard to improve its academic programs by focusing on the quality of education services, the cost of education services, and the physical environment in order to satisfy students. Therefore, the purpose of this research is to examine factors affecting students' satisfaction with UCAS, Gaza.

The rest of the paper is structured as follows: The research model and hypotheses are then developed in Sect. 2. Section 3 explains how the methodology works. The study's findings are presented in Sects. 4, and 5 finishes with a discussion of the findings, limitations, and future research.

2   Theoretical Background

2.1   Students' Satisfaction

Satisfaction is a feeling of pleasure or disappointment that a person has as a result of comparing a product's performance to their expectations [14]. User satisfaction is the most generally used metric for determining whether or not an information system is effective. This is because if the user is happy while using the system, it is deemed successful [15]. The End-user Computing Satisfaction model was designed by Doll and Torkzades [16] to quantify user satisfaction with the deployment of information systems. These variables are content, ease of use, form, accuracy, and timeliness. The student satisfaction degree relies on educational experiences, services and facilities students live during the study at the university [17–19]. The student satisfaction degree consists of

the level of experiences and perceived performance of educational services provided by higher educational institutions [20].

2.2   Quality of the University Academic Services

The quality concept was previously proposed by Juran [21] and Deming [22] in the management literature; however, Service-Quality is a relatively recent concept introduced by Grönroos, [23] and Parasuraman et al. [24] in the management literature. Service quality has been greatly discussed by scholars in the last 20 years as a result of changing worldwide business requirements, leading to it being an established concept. A service is a collection of activities that are more or less intangible in nature that occur through interactions between consumers and service staff, as well as physical resources, objects, and systems of the service provider [25]. In services marketing research, the conception and assessment of service quality has become a hot topic. However, because the higher education industry has unique characteristics and dimensions, assessing service quality is a complex undertaking [26]. A considerable body of evidence exists on the causes and consequences of high-quality education [27–31]. This literature was utilized to define appropriate factors for assessing service quality from the perspective of students in the research. Students are the most important customers since they are the ones who are most impacted by the service quality of the higher education alternatives available to them as consumers [32]. They are the major clients for higher educational institutions, according to Yunus et al. [33], and their requirements include acquiring significant academic information while receiving high-quality services. Based on the preceding, we propose the following hypothesis:

H1: Students' satisfaction is positively influenced by quality of the university academic services.

2.3   Cost of Education Service

Education Service costs appear to be increasing in importance as time passes [34], and they used to be at the bottom of the scale, but now they are one of the most important components [34–37]. The cost of an education program's service has a negative influence on a student's decision to attend university; however, financial aid that helps to reduce prices has a favorable impact on a student's decision to attend a higher educational institution [34, 38, 39]. Due to the high expense of the education service, many students are unable to complete their education. Other students are eager to enroll in a college or university, but due to a lack of funds, they are forced to enroll in a college or university that does not meet their preferences in terms of reputation, offered programs, infrastructure, faculty, and other factors simply because their cost structure is lower than that of institutions with good facilities and a diverse range of programs [40]. Based on the foregoing, we predict the following hypothesis:

H2: Students' satisfaction is positively influenced by cost of education service.

2.4 Physical Environment

The physical environment can influence a student's decision. Because it is one of the most significant decisions in the lives of young people and their families, modern educational institutions now provide virtual tours, all with the goal of giving potential users a better understanding of the environment before deciding which educational institution to attend. Institutions can employ Internet technology to make their services and environments more familiar to their consumers. Users form expectations based on tangible images on the web, setting service delivery criteria, and it is critical that the services satisfy those expectations. Presentations and virtual tours on the internet should also reinforce the service/viewpoint brand's while also being consistent with other marketing messaging [41]. As a result, universities and colleges should consider structural components, such as their appearance, signage, functioning, and ambience of service space, as well as the signals that the building and its surroundings give to visitors, employees, and students. Based on the foregoing, we develop the following hypothesis:

H3: Students' satisfaction is positively influenced by physical environment.

Figure 1 illustrates the study's conceptual framework. In this model, the dependent variable (Students' satisfaction) is linked to the independent variables (quality of education service, cost of education service, and physical environment).
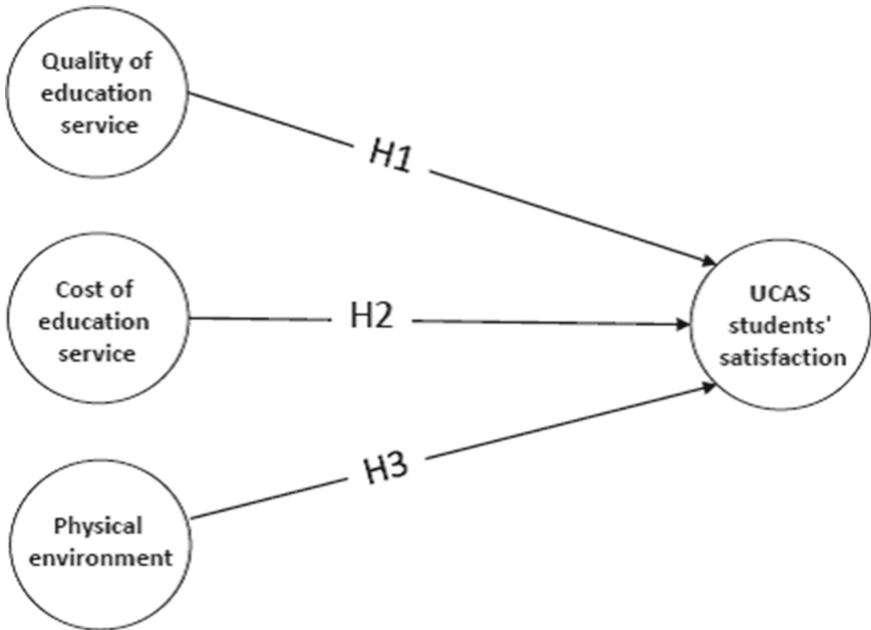
Fig. 1. The research framework

3 Methodology

3.1 Participants

As shown in Table 1, 317 students completed and returned the questionnaire. The findings of the demographic variables were displayed in the table.

Table 1. Profile of respondents ($n = 317$)

Variables	Groupings	No. of respondents	%
Gender	Male	145	45.7
	Female	172	54.3
Program	Diploma	236	74.4
	Bachelor	81	25.6

3.2 Procedures

The descriptive technique was used to explain the current situation and reply to critical inquiries about factors affecting the students' satisfaction with UCAS, Gaza. As a result, the primary method of data collection for this study was a survey, which was conducted using a Google form. The Google form's URL was widely disseminated on social media (Facebook, WhatsApp, and emails). The original questionnaire was appropriately translated into Arabic to conform with local linguistic regulations. It was then reviewed and pilot tested by three native Arabic speakers for accuracy. The questionnaire was distributed to all UCAS students. For statistical analysis, IBM SPSS software version 21 was employed.

3.3 Measures

The survey used a 5-point Likert scale, with 1 indicating strong disagreement, 2 indicating disagreement, 3 indicating no opinion/neutral, 4 indicating agreement, and 5 indicating strong agreement. The survey was divided into four sections. In the first section, the quality of education service is assessed using six questions based on Annamdevula and Bellamkonda [27], Abili et al. [32], and Yunus et al. [33]. The second section employed Allen and Wolniak [38], Kaye and Bates [39], and Hemelt and Marcotte [34] to research the cost of education service, and five items were created based on their findings. In the third section, the physical environment is assessed using six questions based on Gajić [41]. Fourth section adapted from Mulyapradana et al. [14], Weerasinghe and Dedunu [18], and Weerasinghe and Fernando [19] in order to propose five questions to assess UCAS students' satisfaction.

4 Results

4.1 Factor Analysis

The KMO and Bartlett's tests were used to see if the factor analysis was appropriate for the study. The results of the reliability test should be more than 0.7. The Bartlett's Sphericity test scores should likewise be less than 0.05. The KMO value of 0.759 is higher than the acceptable threshold of 0.000, indicating that this analysis is sufficient for the study.

To calculate the factor score coefficient matrix created by principal components analysis [42–45], one principle factor is rotated using the varimax normalization, as shown in Table 2. There are 22 things in the factor. The lowest loading threshold for factor loadings on various scales, according to the research, is 0.30 [46–50]. All of the

Table 2. Reliability and factor loading of the constructs.

Construct	Item	MV	SD	FL	Cronbach's α
Quality of education service	1	3.38	.932	.748	.758
	2	3.42	.894	.761	
	3	3.64	.864	.737	
	4	3.47	.934	.708	
	5	3.62	.985	.768	
	6	3.34	1.024	.729	
Cost of education service	1	3.53	.964	.752	.763
	2	3.36	.843	.726	
	3	3.49	.973	.749	
	4	3.51	1.035	.775	
	5	3.65	.867	.709	
Physical environment	1	3.57	.924	.715	.779
	2	3.76	.964	.736	
	3	3.73	.837	.791	
	4	3.34	.877	.764	
	5	3.28	.864	.716	
	6	3.36	.963	.725	
UCAS students' satisfaction	1	3.86	.964	.786	.794
	2	3.76	1.008	.791	
	3	3.92	.842	.772	
	4	3.83	.994	.764	
	5	3.68	.893	.784	

loadings in Table 2 are more than 0.30, indicating that the scales' construct validity has been preserved.

4.2 Hypotheses Testing

The relationship between the independent variables (i.e. quality of education service, cost of education service, and physical environment) and the dependent variable (i.e. UCAS students' satisfaction) was investigated using multiple regression analysis. The purpose of the multiple regression analysis was to determine how the independent factors affected the UCAS students' satisfaction.

Independent factors explain for 53.6% of the variation in UCAS student satisfaction (adjusted R2 = 0.536), as seen in Table 3. The model's quality was confirmed because the F value was significant at 0.000. Table 3 shows that quality of education service ($t = 4.021$, $p = 0.000$), cost of education service ($t = 3.846$, $p = 0.000$), and physical environment ($t = 4.248$, $p = 0.000$) were positively related to UCAS students' satisfaction. As a result, the results indicated that H1, H2, and H3 were strongly supported by the data, respectively.

Table 3. Results of multiple regression analysis.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig
		B	Std. Error	Beta		
1	(Constant)	.394	.062		3.256	.000
	Quality of education service	.216	.053	.204	4.021	.000
	Cost of education service	.224	.042	.216	3.846	.000
	Physical environment	.258	.042	.237	4.248	.000

Notes: Dependent variable: UCAS students' satisfaction; adjusted R2 = 0.492, F = 124.426, and sig. = 0.000

5 Discussion

5.1 Discussion of Findings

The relationship between the independent variables (i.e. quality of education service, cost of education service, and physical environment) and the dependent variable (i.e. UCAS students' satisfaction) is investigated in this study. The quality of education service has a positive impact on the UCAS students' satisfaction. This could be due to the following factors: The UCAS has a clear system for measuring student satisfaction; it follows

up with students' programs to improve educational quality; it takes care of students' complaints and inquiries; a sufficient number of workers are available to perform the service; the UCAS provides educational programs appropriate to the educational needs of students; and the methods used in the UCAS for teaching are varied and appropriate. This is in line with prior studies [27–31], which reveals a substantial body of knowledge regarding the causes and consequences of high-quality education. From the perspective of the students in the research, this literature was used to determine relevant variables for measuring service quality. Students are the most significant clients since they are the ones who are most affected by the service quality of the various higher education options [32]. They are the major customer of higher educational institutions, according to Yunus et al. [33], and their requirements include getting extensive academic knowledge while receiving high-quality services.

The findings also showed a relation between cost of education service and UCAS students' satisfaction. This could be attributed to the following: the UCAS is characterized by the appropriateness of price with the quality of the educational service provided; it is flexible in paying tuition fees; transportation costs to and from the UCAS are appropriate; the costs of food and drink in the UCAS are appropriate; and the costs of educational resources (books, software) are suitable for students. This is consistent with previous studies that shows that the cost of an education program's service has a negative impact on a student's decision to attend university; on the other hand, financial aid may reduce costs and have a positive impact on a student's decision to attend a higher educational institution [34, 38, 39]. Due to the exorbitant expense of the Studies Service, many students are unable to complete their education. Other students are eager to enroll in a college or university, but due to a lack of funds, they are forced to enroll in a college or university that is not in line with their preferences simply because their cost structure is lower than that of institutions with good facilities and a diverse range [40].

In addition, the findings revealed a relationship between physical environment and UCAS students' satisfaction. This could be attributed to the following: availability of good educational service facilities; availability of scientific and laboratory equipment and individual reading; the UCAS provides suitable places for modern workshops; it has a beautiful campus; the decorations used in the UCAS buildings are attractive; and the UCAS provides suitable facilities for dining, or talking with colleagues. This is in line with previous studies that showing a student's decision might be influenced by their physical environments. Modern educational institutions now give virtual tours, all with the purpose of giving potential users a better idea of the environment before picking which educational institution to attend, because it is one of the most important decisions in the lives of young people and their families [41].

Based on the foregoing, it is reasonable to expect a high degree of satisfaction among UCAS students. This is because of the following: students are satisfied with the educational service provided by the UCAS; the UCAS offers specializations that suit students' interests; Students recommend to their friends and relatives to join the UCAS's various specializations; they will choose the UCAS in case they need to study an existing program; and the UCAS respects its students and the community. This is consistent with earlier studies, which show that student satisfaction is influenced by the educational experiences, services, and facilities students have access to while at university [17–19].

The quality of experiences and perceived performance of educational services given by higher educational institutions make up the student satisfaction degree [20].

5.2 Limitations and Further Research

The empirical outcomes of the study included contextual and application restrictions. Based on responses from UCAS students, we have come to certain conclusions. As a result, it is impossible to draw generalizations about Palestinian colleges and universities. The study only looked at UCAS, limiting the findings' applicability to other Palestinian colleges and universities. Although the findings apply to emerging economies with similar cultural roots, such as Palestine, they may not be appropriate for places with different cultural situations.

The researchers urge that the model be re-examined in different universities as part of future studies. In addition, the model may include moderating and/or mediating factors to help in the comprehension of the relationships and mechanisms behind the current situation. In addition, academic staff should be included as a sample in future studies.

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An Investigation of Teaching and Learning Process Efficiency in a Business School Using DEA

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Abstract. Assuring high-quality teaching and learning continues to be a priority for institutions of higher learning. Higher education institutions use a variety of tools to ensure the accomplishment of their initiatives, which focus primarily on student feedback. The purpose of this study is to ascertain the overall effectiveness of the teaching and learning processes across various business school courses by utilizing the most effective tool available, namely Data Envelopment Analysis (DEA). The data was collected from seventy sections of a wide range of courses at a business school in Saudi Arabia. Almost 1470 students' opinions in the form of a course evaluation survey (CES) were used to calculate the efficiency score of decision-making units using DEA. The study examined four inputs and six outputs. On the Charnes Cooper and Rhodes (CCR) scale, twenty-five decision-making units (DMUs) are found to be efficient, accounting for 35.71% of the total population studied. On the Banker Charnes and Cooper (BCC) scale, this number increases to 34, nearly half of the total number of DMUs analysed. The current study establishes a model for internal benchmarking by using a generic model. Where the constantly efficient DMU could be probed to collect best practices and implement them for internal benchmarking and continuous improvement in the teaching and learning process. It proposes a model for optimizing the CES results through internal benchmarking. Following that, it discusses how these examples can be used to develop internal benchmarking systems.

Keywords: Teaching & learning · Business school · Higher education institutions · Efficiency · Quality assurance · Data envelopment analysis

1 Introduction

Students are the primary beneficiaries of the educational system, and surveys of their perceptions of the quality of higher education are one of the most reliable indicators of its quality. Their perspectives may prove beneficial in terms of improving the quality of courses and their content, as well as the teaching and learning process as a whole.

They can recommend critical improvement recommendations that should be incorporated into the quality cycle for individual courses, programs, and institutional planning (Darandari et al. 2009; Montoneri 2014). As a result, higher education institutions strive to incorporate feedback or concurrent control into academic activities by administering a course evaluation survey at the conclusion or during the course of academic activities. A course evaluation survey is one method for eliciting students' opinions about classes, personal behaviour, and the teaching and learning processes in general. However, their perspective does not appear to be without bias (Zabaleta 2007). Due to the fact that its significance outweighs its criticism, it is frequently used and misused for a variety of academic purposes (Zabaleta 2007). The Course Evaluation Survey (CES) method of evaluation is straightforward, extremely beneficial, and widely used. However, no other tool comes close to the applicability and importance of this one. As a result, it has been used to optimize teaching and learning processes. When used properly, it can be used not only for faculty evaluation but also for overall teaching and learning process improvement. There are evidences available in literature like, Naushad (2017), Fuentes et al. (2016), Montoneri (2014) etc. who suggested the students course evaluation ratings for various improvement purposes. Moreover, Al-Faraj et al. (2006), Montoneri et al. (2011) used students rating as one of the input to a faculty performance evaluation model using Data Envelopment Analysis (DEA).

The existing literature on CES demonstrates that data is minimized by relying on a small number of responses and instances. However, we see no evidence to support its scientific utility or its use as a standard for measuring efficiency. By utilizing a relatively large sample of courses as DMUs, the paper sought to carve out a model for how CES data can be incorporated into performance evaluation, the teaching and learning process, and additionally, for internal benchmarking purposes. As a result, the current study does not include a narrative to substantiate the students' evaluations; rather, the focus is on determining the overall efficiency of the teaching and learning process across various business school courses using the most effective tool available, namely Data Envelopment Analysis (DEA). Efficiency scores for CES data were defined in the study. Additionally, it provides a model for optimizing CES results through research. Following that, it discusses how these examples can be used to develop internal benchmarking systems.

2 Review of Literature

The usage of students' evaluation in teaching and course assessments is a frequent practice in higher education institutions (Theall and Franklin 2000; Zabaleta 2007). Students' evaluations/ratings support a variety of purposes, including assisting teachers in enhancing their teaching and courses, assisting upper management in deciding on salaries, promotions, and best faculty awards, and assisting students in selecting a course etc. (Benton and Cashin 2012; Zabaleta 2007). It can be used in summative and formative assessments together or separately (Arthur 2009; Spooren et al. 2013). However, researchers (Lutovac et al. 2016; Marsh 2007; Nasser and Fresko 2006; Ory 2001) disagree regarding the authenticity of students' assessments. According to Worthington (2002), the three most prevalent questions regarding student assessments are "(i) teachers can 'buy' better evaluations by offering higher marks, (ii) more successful instructors

lead students to practice harder, resulting in higher grades, and (iii) pre-existing student traits influence both teaching effectiveness and student ratings." However, there are certain questions of unprofessionalism in student answers can never be overlooked (Tucker 2014). Though certain parameter came into practice and developed by researchers to ensure the reliability of students' rating scores (Feldman 2007).

The reliability of students' rating can be understood by the low degree of standard error (Benton and Cashin 2012). The smaller the Standard Error of Measurement (SEM), the greater the reliability (Cashin 1988). However, the size of the class is also significant. The lowest degree of SEM is typically contained in classes of more than 50 students (Benton and Cashin 2012; Cashin 1988). The validity of the score is the second most critical feature of a student's ranking. The notion of teaching efficacy is discussed in this domain (Spooren et al. 2013). The key argument in this regard is how students rating can simply be used to assess the efficacy of teaching (Peterson et al. 2008). Though teaching effectiveness is itself the most questionable topic, since performance may be assessed by numerous rather than single variables (Marsh 2007; Peterson et al. 2008). However, the importance of students' evaluations is enormous, since it is seen as the most critical instrument for enhancing teaching and learning as a whole (Marsh 2007). In fact, students' overall satisfaction is positively correlated with perceived quality of teaching and learning (Bini and Masserini 2016). The value of evaluating students' perceptions and expectations, particularly in a competitive environment, cannot be overstated (Harvey and Green 1993). Universities should devise their teaching and learning improvement plan on level of students' satisfaction reflected in their rating scale (Misanew and Tadesse 2014). Therefore, to devise the teaching and learning efficacy students rating is highly relied upon. However, researchers further adopted other statistical analysis tools to devise the most appropriate inferences. One of the highly researched theme is to know the teaching efficiency by using the students responses. Data Envelopment Analysis is an excellent method for determining the efficiency of every unit under inquiry.

DEA Application in Higher Education and Students Evaluations

Data Envelopment Analysis (DEA) is one of the most commonly used operational research methods for assessing Decision Making Units (DMUs) performance (Charnes et al. 1997). The use of DEA for performance assessment and benchmarking in a variety of contexts, including hospitals, airports, banks, colleges, and industries (Banker et al. 1986; Bessent and Bessent 1980; Gillen and Lall 1997; Naushad et al. 2020; Yeh 1996) has been shown to be effective. DEA also has a large number of studies in the higher education field that vary in scale, regions, coverage, and applicability. DEA was used by Flegg et al. (2004) and Tomkins and Green (1988) to assess the success of UK universities in terms of teaching, research, and consulting. DEA was used by Agasisti and Pérez-Esparrells (2010) on cross-national universities in Italy and Spain. DEA was used by Abbott and Doucouliagos (2003) and Munoz (2016) to assess the study performance of Australian and Chilean universities, respectively. Similarly, several studies which measure the effectiveness of research or the university as a whole. However, there are just a few studies on the use of DEA in student assessment. De Witte and Rogge (2009), Fuentes et al. (2016), Montoneri (2014), Montoneri et al. (2011) and Sarkis and Seol (2010), among others, have insisted on verifying the reliability of the course assessment method using the DEA (see Table 1).

The literature review discussed previously demonstrates that course evaluations can be used to gain insight into the teaching and learning processes in higher education. As the ultimate customers, students' input is critical in assisting institutions in developing their products and services. which includes, but is not limited to, their teaching methodology, courses, course content, educational resources, and other materials. Additionally, an institution is interested in determining who appears to be more effective at delivering all of these services. Thus, the instructor of the course or the course itself serves as the focal point. Thus, the current study is viewed as an attempt to close this gap by providing a generic framework for gaining access to a higher education institution's overall teaching and learning setup.

3   Methodology

There are numerous studies in the literature that focus on course evaluation surveys. The Table 1 illustrates several approaches taken by a range of academics. Because the effectiveness of course assessment results is already being investigated, the current study took a novel approach. The methodology is presented as a case study that can be replicated in other contexts to improve course and teacher performance throughout the teaching and learning process. The research is based on data from a Saudi Arabian public university's business college. To collect data for the course evaluation, the Saudi Arabian National Commission for Academic Accreditation and Assessment (NCAAA), the country's national assessment and accreditation agency, developed a twenty-four-item survey questionnaire. A five-point Likert scale was used to evaluate the statements and questions, with 1 indicating strong disagreement and 5 indicating strong agreement. During the fall semester of the academic year 2018–19, the surveys were administered to undergraduate students enrolled in a variety of courses at the College of Business Administration. Notably, the data analyzed in this section is collected on a routine basis. This is an integral part of the academic process and a means of receiving feedback. CES is administered at the conclusion of each academic semester.

Data for 70 sections in various courses was gathered from a total of 1470 students. Data envelopment analysis (DEA) was used to analyze and draw a conclusion using data. DEA is a non-parametric statistical technique for estimating frontiers (Cook et al. 2014). The instrument excels at calculating the performance of DMUs with a variety of input and output configurations (Charnes et al. 1978). The DEA technique is advantageous for determining the relative efficiency of individual DMUs within a sample base (Colbert et al. 2000). Charnes et al. (1978) proposed the Constant Return to Scale (CRS) as the fundamental model for DEA based on input orientation. The CRS assumption, on the other hand, is valid only when all DMUs operate at their optimal scale. Banker et al. (1984) later extended the model to include a variable return to scale (VRS). Additionally, a critical aspect of DEA modelling is the selection of appropriate decision-making units (DMUs). According to Cook et al. (2014) and Cooper et al. (2004), the total number of DMUs must be greater than three times the total number of inputs and outputs (DMUs > 3* (I & O)). Thus, the DMUs for this study were defined as the number of undergraduate courses taught by faculty in various sections at a business school. It is just as critical to select the appropriate input and output dimensions as it is to select the appropriate

DMUs. Four inputs and six outputs have been identified in the current analysis. The dimensions chosen for inputs and outputs encompass a broad range of possibilities for teaching and learning. The parameters for the selected input and output are abbreviated and discussed below.

Table 1. Selected DEA papers with description of Input and Output variables

S.N.	Authors	Methodology used	Target group	Instrument used	Data characteristics	Input variables	Output variables
1	Fuentes et al. (2016)	Three stage DEA Model	Students Enrolled in Practical Intro. to economics Course in Spain	Questionnaire with 12 Questions	3 years Data from 2011–12 to 2013–14	1- Satisfaction with the teacher 2- Quality of Materials 3- Diversity of Materials 4- Socio-Economic and Cultural Level 5- Previous Education	1- Level of Satisfaction with course 2- Academic Results
2	Montoneri et al. (2011)	DEA-CCR and BCC	Students Enrolled in English course in Taiwan	n/a	3 years Data from 2004 to 2006. Selected 50 classes	1-The Preparation of Teaching Contents 2-Teaching Skills	1-Fair Grading 2-Students Learning Performance
3	Sarkis and Seol (2010)	DEA	Students Enrolled in Accounting course	Questionnaire with 12 Ques	99 responses from 4 classes for an individual instructor	1-Instructor's ability to present material clearly 2-Instructor's preparation for classes 3-Instructor's overall organization of the course	1- Contribution of this course to students' acquiring new knowledge 2- Overall effectiveness of the instructor
4	De Witte and Rogge (2009)	DEA-BoD	Students enrolled in Hoge school Universiteit Brussel (located in Belgium)	Questionnaire with16 Ques	5513 students	1-Learning and Value 2-Examinations and Assignments 3-Lecture Organization 4-Individual Lecture Report	Aggregate Performance of Teacher
5	Montoneri (2014)	DEA	Students enrolled 42 classes in English course in Taiwan	Course Evaluation Survey consisting of 10 questions	1470 freshmen students enrolled in university of Taiwan in Academic Yr. 2004–05	1-Teaching clarity 2-Teaching Enthusiasm	1-Students' Learning Interests 2-Students' Satisfactions about grades

Input Dimensions

Input1 (I_1) - Students' Course Expectations- This can be stated as the average response value of item 1 to item 4. These items can be stated as, "*1- The course outline (including the knowledge and skills the course.2- The things I had to do to succeed in the course, including assessment tasks and criteria for assessment, were made clear to me. 3- Sources of help for me during the course including faculty office hours and reference material, were made clear to me. 4- The conduct of the course and the things I was asked to do were consistent with the course outline.*"

I_2- Course Materials and Resources- The average response value of items 5 through 6 can be expressed as this. These items 5 & 6 can be stated as, "*5- Course materials were of up to date and useful. (Texts, handouts, references etc.). 6- The resources I needed in this course (textbooks, library, computers etc.) were available when I needed them.*"

I_3- Teaching Effectiveness- The value for this input construct averaged together, the average response values of items from 7 to 11. These items can be stated as, "*7- My instructor(s) were fully committed to the delivery of the course. (Eg. classes started on time, instructor always present, material well prepared, etc.). 8- My instructor(s) had thorough knowledge of the content of the course. 9- My instructor(s) were available during office hours to help me. 10- My instructor(s) were enthusiastic about what they were teaching. 11- My instructor(s) cared about my progress and were helpful to me.*"

I_4- Effective Use of Technology- The value for this input is obtained from a direct question which is item 12. It can be stated as "*12- In this course effective use was made of technology to support my learning.*"

Output Dimensions

O_1- Contribution of Course in Developing the Knowledge and Cognitive Skills- In this case, the value for this input is retrieved from a direct question number 13. A direct question was asked "*Q13- The things I had to do in this course (class activities, assignments, laboratories etc.) were helpful for developing the knowledge and skills the course was intended to teach.*"

O_2- Fair Grading- The value for this input is obtained by taking item 14 into consideration. Students were asked a direct question, "*Q14- Grading of my tests and assignments in this course was fair and reasonable.*"

O_3- Contribution of Course in Critical Thinking Skills- This value for this input is derived through an answer to a question number 15. Students were asked a direct question, "*Q15- This course helped me to improve my ability to think and solve problems rather than just memorize information*".

O_4- Contribution of Course in Interpersonal Skills- The value for this input is extracted from item 16, which is a direct question. Students' opinions were sought on, "*Q16- This course helped me to develop my skills in working as a member of a team.*"

O₅- Contribution of Course in Communication Skills- This value for this input is derived through an answer to a question number 17. Students Opinion were gauged on *"Q17- This course improved my ability to communicate effectively."*

O₆- Students Overall Satisfaction with the Quality of Course- The value for this input is taken from item 18, which is a direct question. Students' opinions were solicited by posing a direct question. *"Q18- Overall, I was satisfied with the quality of this course."*

Once the input and output is set the DEA equation is set as a next step to solve the linear problem and find out the most efficient DMUs of the sample analysed. For the current study the number of outputs surpass the number of inputs therefore, the output-based DEA model seems highly appropriate. The output-oriented variables return to scale in a DEA frontier is defined by the solution to *A* to linear program explained below:

$$
\begin{aligned}
&\min \Theta \\
&\Theta, \lambda \\
&\text{Subject to} - \gamma_i \, l \, \theta + Y \lambda \geq 0 \\
&\quad x_i + X \lambda \geq 0 \\
&\quad A1' \lambda = 1 \\
&\lambda \geq 0,
\end{aligned}
$$

Where *A1* is an *Ax1* vector of 1s, λ is an *Ax1* vector of weights, and ө is the output distance measure. Notably, $0 \leq \theta \leq 1$ and that $1/\theta$ is the proportional expansion in inputs that could achieve the *ith* DMU, with input quantities held constant.

Also, the input oriented VRS DEA frontier is defined by the solution to *A* linear programs given below:

$$
\begin{aligned}
&\text{Max } h \\
&h, \lambda \\
&\text{Subject to} - \gamma_i + Y \lambda \geq 0 \\
&\quad x_i \, l \, h + X \lambda \geq 0 \\
&\quad A1' \lambda = 1 \\
&\lambda \geq 0
\end{aligned}
$$

Where, *h* is the input distance measure. Notably, $1 \leq h \leq \infty$ and that $1/h$ *is* the proportional reduction in inputs that could achieve the *ith* DMU, with output quantities held constant. Therefore, A DMU with efficiency value of 1 will be considered as efficient and form the efficient frontier. The process for calculating the efficiencies was implemented by the application MaxDEA®, which used the well-defined inputs and outputs.

4   Results

The absolute data and results of the efficiency scores for each DMU are available upon request to the authors. The results of efficiency presented in table-2 indicate that out of

a total of 70 DMUs taken for the study, only 25 DMUs are found to be efficient on the CCR scale, which makes up 35.71% of the total population considered for the study. On the BCC scale, this tally rises to 34, representing 50% of the total sample examined, accounting for nearly half of the total DMUs examined. The most interesting thing that could be noticed from the above results is that those DMUs that were efficient on the CCR front were also found to be efficient on the BCC front as well.

However, the robustness of these results can be verified using alternative methods. To ensure the consistency of the obtained results, it is desirable to visualize their distribution graphically (Sarkis and Seol 2010). Therefore, the efficiency results were graphed and presented in Fig. 1.
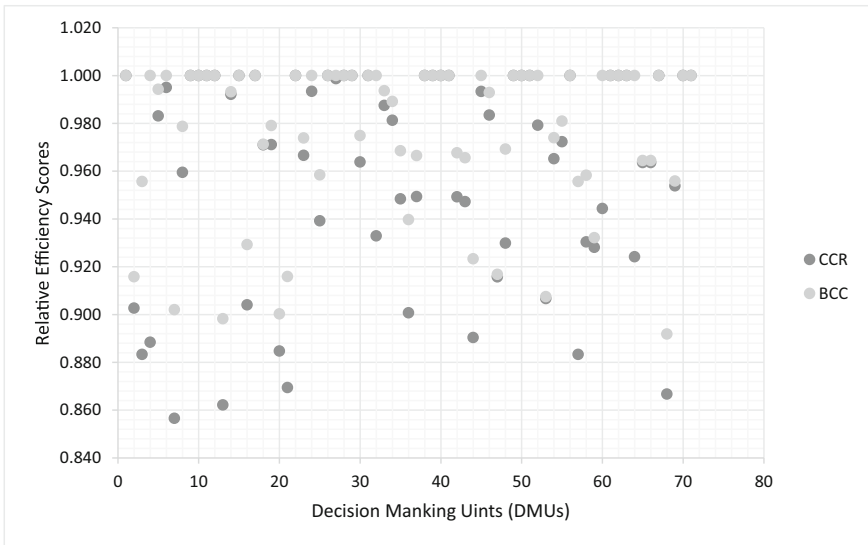
Fig. 1. Relative efficiency scores

The findings, when shown in the format of a graph, such as in Fig. 1, clearly demonstrate the density of efficient or inefficient DMUs. Which are effective have a ranking of 1.00 relative performance. Consequently, the graphics will be depicted by a straight line across at 1.00. However, if either of the DMUs is inconsistent with a lower input evaluation rating and a higher output evaluation rating, reflecting a more "effective" solution, the DMU assessment will receive a 1.00 score and the other scores will more likely fall in relative value. If there was only one DMU, the remaining DMU would also be reasonably stable, and the frequency of the results would still be about a certain efficiency score or a variety of scores based on the input and output factors. If there is more dispersion and a wide range of DEA ratings, we might contend that the rankings are less accurate. Therefore, the results of DEA will clearly mark the efficient and inefficient DMUs upon which a decision could be drawn. Those found to be inefficient must be provided a chance to improve on the aspects where they seem to be lacking. While

the consistently efficient DMU must be utilized for benchmarking by other inefficient DMUs.

5 Discussions

Students' course evaluations are the most frequently employed method for evaluating higher education instructors' instructional effectiveness as well as their teaching and learning process. Many institutions use course evaluation ratings as one of the components of performance evaluations of their faculty. However, several researchers have doubted the feasibility of this assessment method and its tools. Yet it is frequently practiced, and students' ratings are used to evaluate and improve the teaching and learning process. Our paper discusses Data Envelopment Analysis (DEA), a multi-factor efficiency model, and demonstrates how DEA can be effectively used to further improve the teaching and learning process and, moreover, the faculty members' performance in this regard. Using actual data from a higher education institute, we explain how the findings can be viewed and further analysed using traditional statistical methods.

By adopting these results, we would be able to scale down the efficient and non-efficient players. Those who fall below the efficient frontier need to be asked and probed by themselves where they are lacking. This can be traced by looking at the aggregate score of individual input and output, which will aid in identifying the laggard areas. The concerned instructors might be assigned to frame the action plan for this to improve. This action plan must be formally recorded as the action items in the course report of concern section. The next semester's results will provide an opportunity to carry out a comparative analysis of the similar trends. Notably, this must be done by individual instructors upon the suggestions of the quality unit of the institution.

6 Conclusions

The purpose of this study was to develop a generic model for calculating the efficiency score of a teaching learning process based on student evaluations of the course. The efficiency score was calculated using course evaluation data from a business school. The study's findings suggest that DEA is a validated tool for determining efficiency scores and using these scores to benchmark the teaching and learning process's performance, as determined by performance evaluation. The model discussed in this article is a generic guide based on student feedback that can be used to enhance the teaching and learning processes in a postsecondary institution.

DEA techniques, on the other hand, are not without *limitations*. For instance, DEA frequently employs exaggerated weightings to maximize a student's relative efficiency ranking (Sarkis and Seol 2010). This, however, is surmountable. Weight restrictions can be imposed by decision-makers and analysts individually or in groups (assurance regions) (Wong and Beasley 1990). Notwithstanding, course evaluation is frequently criticized for its biases and lack of validity. Though some evidence suggests that these biases can be mitigated by including a variety of reverse-coded (positive and negative) questions in the evaluation survey questionnaire.

However, administrators and faculty will ultimately use DEA on course evaluation data as a tool for performance improvement and to enhance the teaching and learning process. However, best practices suggest that student assessment should not be the sole criterion for faculty teaching evaluation, but that multiple parameters should be used rather than focusing exclusively on one mechanism. While DEA cannot address all issues relating to course evaluation, it will undoubtedly be used in conjunction with the current procedure to interpret potential issues with the validity of evaluation instruments and/or to make the course evaluation instrument's analysis more relevant.

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The Effect of TEFL Course Moodle Activities in Developing Student-Teachers' Pedagogical Knowledge and Teaching Practices

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Abstract. This study aimed at revealing the effect of some Moodle activities that are used in TEFL courses to develop EFL student-teachers pedagogical knowledge and teaching practices. The sample of this study consisted of (53) third-level student-teachers who were enrolled in the TEFL course during the academic year (2020/2021). The participants studied the TEFL course via Moodle platform during the COVID-19 outbreak. Five different types of Moodle activities were presented to the student-teachers: instructor's presentations, reading articles and websites, scenario-based tasks and practical studies, practice teaching videos for complete/part lessons and reflection videos from classroom teachers. The participants of the study completed a survey which consisted of (42) items divided into two domains; (16) items for the pedagogical knowledge and (26) items for the teaching practices. The results of the study concluded that the instructor's presentation activities and scenario-based tasks and practical studies and practice teaching videos had a high effect on developing EFL student-teacher's teaching practices. The results also revealed that there were no statistically significant differences attributed to gender, however, there were statistically significant differences attributed to the accumulative average among EFL student-teachers' responses. Based on these results, a set of recommendations were given.

Keywords: EFL student-teachers · Activities · Pedagogical knowledge · Teaching practices · Moodle platform · And TEFL course

1 Introduction

With the emergence of the COVID-19 pandemic and its rapid spread around the globe, the majority of the affected countries have turned to e-learning instead of face-to-face learning as one of the rapid solutions that contribute to the continuation of learning and preservation of human capital at the same time. Here, in the Gaza strip universities adopted Moodle platform as a virtual learning environment. It is widely used since it was devised by Martin Dougiamas as the "statistic reveals that about 14 million consumers are engaged in about 1.4 million courses propagated by this" (Lungu 2022). It is a free web platform for e-learning management (Alnuaimi, 2018, p. 130). It facilitates

and indicates many features such as blogs, chats, database activities, glossaries, support systems enabling the functioning in multiple languages, content management, regular examination and assessment (Lungu 2022) and Quiz, URL, Wiki, forum, FQA, form, email and chat (Araujo, Faria and Lima, 2020, p. 37). Moreover, it enables the management in the universities to follow up with professors and students to check the progress of the educational process in accordance with the quality and objectives planned for it.

e-Learning in higher educational institutions simulated the interest of researchers. Some studies focused on eLearning and TEFL such as: Kabilan and Khan (2012) revealed the values of using e-portfolio; as an active learning strategy; as a tool for learning and student-teachers self-assessment. Findings indicated that six competencies emerge from the teachers' practices of e-portfolios - (1) developing an understanding of an effective teacher's role; (2) developing teaching approaches/activities; (3) improving linguistic abilities; (4) comprehending content knowledge; (5) gaining ICT skills and; (6) the realization of the need to change mindsets. Al-Masri (2005) developed an effective TEFL course using WebCT; to identify the main technical difficulties facing EFL student-teachers using WebCT and to investigate how WebCT can influence effective and pedagogical factors that play a key role in effective learning. Goyal (2012) concluded that eLearning is cost-effective as course content once developed, easily used and modified for teaching and training. E-learning also provides learners with freedom from carrying heavy school bags and stopping the cutting of trees for the sake of paper, pencil and rubber. Badawi (2009) investigated the effectiveness of using the blended learning model in developing EFL prospective teachers' pedagogical knowledge and performance. Results revealed that the mean scores of the EFL prospective teachers in the blended group surpassed the mean scores of those who were in the traditional face-to-face group.

It was challenging during the COVID-19 pandemic to create an effective active TEFL course that develops EFL student-teachers pedagogical knowledge and teaching practices. That is because this course presents the core of the teacher preparation programme, since it provides the EFL student-teachers with the needed pedagogical knowledge and included also some aspects of the practical side. So, the instructors of this course have to adopt creative activities that help EFL student-teachers to acquire the needed pedagogical knowledge and implement them later in a real classroom through teaching school students. Accordingly, this study seeks to present some Moodle activities that were used during the COVID-19 outbreak in the TEFL course and find out the effect of those activities on enhancing the pedagogical knowledge and teaching practices among the student-teachers.

In the following parts of the article, there is a brief presentation about the pedagogical knowledge and teaching practices, research design and methodology, results, discussion and conclusion.

2   Literature Review

2.1   Pedagogical Knowledge

Pedagogical knowledge refers to teachers' professional and academic knowledge for inspiring creating effective teaching and learning environment in the classroom (Guerriero 2013: p.5 and Daffodils, 2015: p.2). This could be achieved through deep knowledge about most related professional knowledge such as teaching methods and ways for encompassing overall educational purposes, students' learning and characteristics, classroom management, lesson plan development and implementation. It also includes knowledge about techniques to be used in the classroom and strategies for evaluating students' understanding (Al-Mobayed 2016, p. 24). Besides, academic or content knowledge refers to the knowledge about the subject they teach to help the teachers know what to teach. Pedagogical Knowledge benefits both teachers and learners (Bereiter, 2002). That is because it is highly relevant to teaching practice and it provides teachers with pedagogical reasoning based on specific content and specific learners and context (Wu Peng, 2013: p.84).

The pedagogical knowledge includes two components: the first one is cognitive which focuses on professional knowledge, general pedagogical knowledge, content knowledge and pedagogical content knowledge. The second one is affective-motivational characteristics components which include motivation, self-regulation, and professional beliefs about teaching and learning of the subject content (Guerriero 2013: p.13). While Shulman (1987) mentioned seven categories for pedagogical knowledge, three of which are content related to content knowledge, pedagogical content knowledge, and curriculum knowledge and the other four categories refer to general pedagogy, learners and their characteristics, educational context and educational purposes.

2.2   Teaching Practices

Teaching practices are the social activities carried by teachers in the class through following some the techniques, steps, acts, behaviors and procedures to facilitate students' learning (Nursing Education, 2013). In other words, teaching practices are the teachers' art for presenting the lesson based on their pedagogical knowledge (Guerriero, 2015). Besides, teaching practices are "the various teaching abilities that the student-teachers obtain during TEFL Course at AUG such as designing adjectives, detailing the steps of a lesson, analyzing the target language/text, staging a lesson, interacting with students, managing activities and materials, focusing on target language and texts and moving towards adjectives" (Al-Mobayed 2016, p. 25). "Teaching practice is a period that a student-teacher spends teaching at a school as part of his or her training" multiple factors influenced teaching practices for instance; teachers' pedagogical knowledge, personality, charisma, thoughts and beliefs about teaching (WhatDoesMean.net, n. d.). On the other hand, "teaching practice consists of the pedagogical function (teaching) and the appropriation that each teacher makes of his or her trade (training continuously, updating their knowledge, assuming certain ethical commitments, etc.). Both issues, in turn, are influenced by the social setting (the school, the city, the country).

3   Research Design and Methodology

The sample of this study consisted of (53) EFL student-teachers who were (13) males and (40) females in the academic year (2020/2021), who enrolled in the TEFL course et al.-Azhar University of Gaza. The researchers followed the survey design method. The researchers prepared a survey consisting of (42) items divided into five activities five-point Likert- scale responses. The first domain of the questionnaire includes (16) items to measure the Moodle effect of activities on developing pedagogical knowledge. The second domain, which includes (26) items, focuses on determining the Moodle activities' effect in developing the student-teachers' teaching practices.

3.1   Validity of the Study Tool

Two methods were used to check the validity of the questionnaire. First, the Content validity, as a group of (5) TEFL course instructors reviewed the survey. Based on their recommendations, (2) items were excluded and other (2) items were merged with others. Then, the internal consistency through a pilot group of EFL student-teachers out of the sample of the study completed the survey. Pearson's correlation coefficient of each activity and the total score of the survey were counted to ensure the validity of the survey and the degree of each item with the total degree of its domain. It is concluded that all items are statistically significant at a significant level = (0.01). This means that the tools are highly consistent and valid to be used in this study.

3.2   Reliability of the Study Tool

An estimation of the reliability of the tool over the pilot sample was predicated by using two methods. First, the Split-half method, through Guttman test, after dividing the survey into two equal parts. The result of part (1) was (0.956) and it was (0.960) for part two, whereas it was (0.902) for the whole survey. Then Cronbach Alpha formula, as the reliability for the survey was (0.975). It is evident the survey was highly reliable to be applied in this study.

4   The Results of the Study

To answer to the first question i.e. "What are the Moodle activities in the TEFL course that are used to develop pedagogical knowledge and teaching practices?", a thorough literature review was conducted. The following list of Moodle activities was used in the TEFL course, where those activities were divided into two parts; the first part includes two types of activities for developing pedagogical knowledge and the second part includes three types of activities for developing teaching practices.

Instructor's Presentations. can be an effective way of reinforcing certain content to students so that they're better able to retain it… Students can go back and access it as reference material (The Editorial Team Resilient Educator, 2022). There is a set of criteria that can be used to engage an audience and keep their interest and attention

such as body language, movement, colors, voice and letting the audience participate by asking or answering questions (Ontario Curriculum Unit Planner, 2002, p. 13). It should be short with a duration time between 20–30 min. The instructor has to use clear sentences, depending on well-organized ideas and explanations. It can be fun simple and it has to include a table of the content slide and a summary slide for the main points. It can include pictures, videos, symbols, and diagrams, charts to support the content and to get interested (The Editorial Team Resilient Educator, 2022). Normally, the main use of presentation is to explain the chapters of the main reference of the course or the related topics for the course description.

Reading Articles and Websites. Using extended reading with EFL student-teachers trains them to develop themselves professionally and search continuously to pick up new trends and techniques in TEFL. Usually, they depend on reading the main reference to develop the needed pedagogical knowledge but throughout further reading articles and websites they can expand their knowledge and know the famous writers and experts of TEFL science. In addition, specific clear purposeful activity should be presented with each reading task and to be followed with the instructor for feedback and discussion or presentation. Some of the reading activities are: summarizing the whole idea, drawing a mind map or any other graphic organizer, completing the KWL (know, want to know, learn) table, preparing themselves for hot seating, mentioning interesting points and saying why, to answer during reading questions about finding specific details, or to prepare five minutes presentation or to complete the material by suggested related subtopics.

Scenario-based Tasks and Practical Studies. Classroom scenarios provide EFL student-teachers with the opportunity to imagine the whole situation of practice teaching in a real classroom in schools. Besides, it enables them to reflect on others' work and figure out the most significant practices and the weaknesses. Scenarios of real classroom situations motivate learners to participate in an interactive teaching classroom environment. This method is a teaching way using virtual, interactive, problem-based contexts. This strategy involved learners working their way through a problem and they tend to find a solution (Scenario-based Learning, 2019). Such a learning situation helps TEFL student-teachers promote critical thinking and problem-based or case-based learning and presents real-world contexts that facilitate good learning for classroom practices (Abou Shaaban and Shaat 2019, p. 12). Moreover, it "fills the gap between theory and practice in the learning and teaching environment" (Taneri Ahu, 2018, p. 57).

Practice Teaching Videos for Complete/Part Lessons. Using videos in enhancing teaching practices is so much useful and offers a unique teaching/learning technique as reported by experienced educators. Using videos and watching the complete classroom situation "is incumbent upon teacher education students to develop the capacity to make sense of the events that occur in the classroom" (Rosaen et al., 2008). In addition, it motivates student-teachers to analyze its components, trains them to notice what is occurring in the classroom, develops classroom management skills, and enhances reflection skills. Furthermore, it provides student-teachers with the appropriate background to "observe and reflect carefully on different issues of teaching and learning in action. This helps the student-teacher to avoid complacency which can act as a barrier to their growth as educators".

Reflection-Videos from Classroom Teachers. This strategy "originated in the 1960s at Stanford University, to train people in specific skills, following a modeling approach" (Santagata and Angelici, p.1, 2010). Video-based reflection or video-based instruction is an audiovisual effective and powerful learning tool that is recorded by the teacher him/herself or by another/unknown teacher during the teaching process in the classroom and viewed later to reflect on individually or in peers and it is used as a tool for professional development (Obid 2022, p.23, Woolfitt 2015, p.28, Sonmez & Can, 2012, p.142). At the same time, teachers analyze the strengths and weaknesses of performances and determine what is relevant in a classroom situation (Masats and Dooly 2011, pp. 1149–1150). In other meaning, the *video-based reflection* strategy presents an "example of authentic classrooms and teaching to supplement lectures and provide more exposure to real teachers in the act of teaching" (Fuller & Manning, 1973 as quoted in Newhouse, Lane and Brown 2007). Impedovo & Cheneval-Armand (2016, p.3) added that using video-based reflection enables teachers to relate "their university learning to their classroom methods, while also bridging the gap between theory and practice."

The Answer to the Second Question: What is the effect of using some Moodle activities in the TEFL course in developing student-teachers pedagogical knowledge and teaching practices? To find out the effect, means, standard division and percentages were counted. The results show that the instructor's presentation had a high mean for all items and the total responses. This means that it had an effect on developing EFL student-teachers pedagogical knowledge while reading articles and websites had an intermediate effect in the total degree and all items except the first item. This indicates that the effect of this activity on developing EFL student-teachers was intermediate. Scenario-based tasks and practical studies and practice teaching Videos for complete/part lessons had a high effect on developing EFL student-teachers teaching practices as the mean of responses indicated for both activities and each item except two items. But reflection videos from classroom teachers had an intermediate effect on developing EFL student-teachers teaching practices.

To test the first study hypothesis i.e. There are no statistically significant differences at (α ≤ 0.05) among EFL student-teachers in their responses due to gender (male and female), the researchers used the Independent samples T-test. The results show that the computed T (1.192) and it is lower than the tabulated T (0.239). besides. Hence, it can be stated that there were no statistically significant differences attributed to gender. In other words, the evaluation of the female EFL student-teachers equals those of the male EFL student-teachers.

To test of the second hypothesis i.e. There are statistically significant differences at (α ≤ 0.05) among EFL student-teachers in their responses due to accumulative average (60–69.9%,) accepted; (70–79.9%) good; (80–89.9%) very good; and (90–99.9%) excellent, One-Way ANOVA was used to analyze the data statistically. It is obtained that the value of calculated 'F' is (101.456) and it is significant at (0.000) because it is less than (0.05). This means that there were statistically significant differences due to the accumulative average among EFL student-teachers responses. To find out the differences in favor of which group, the Scheffe test was used to reveal that the significant differences were in favor of excellent accumulative achievement level which

means that the activities of TEFL course via Moodle platform developed excellent level EFL student-teachers pedagogical knowledge and teaching practices more than very good, good and acceptance EFL student-teachers' levels. In other words, there were statistically significant differences at ($\alpha \leq 0.05$) among EFL student-teachers in their responses due to accumulative in favor of excellent.

5   Discussion

This result can be attributed to the fact that EFL student-teachers feel that everything the instructor says is very important, so they only study and watch the instructor's presentations and pay attention to their details. This led to a significant effect on the development of pedagogical knowledge. In addition, it can be said that this is the method EFL student-teachers are accustomed to in face-to-face classes since they joined the university. Also, the presentations include summaries for the learning material and its main points and consider the sequence and coherence of what is contained in the main reference of the course.

While extended reading occupied the second rank in the development of pedagogical knowledge because EFL student-teachers do not prefer this type of activity very much. As they have to search for information themselves through the article or the website and consider it as additional work besides the main lectures of the course. So, they ignore doing it with the required accuracy. Also, they do not realize its importance in developing their knowledge and skills.

As the results indicated, the videos for classroom lessons have a significant effect on the development of teaching practices that is because they present lessons by unknown teachers. So, criticizing their performance in terms of praising it or highlighting weaknesses is considered comfortable and unashamed. The videos and activities attached with each video also contributed to focusing the attention of student-teachers on many of the pedagogical knowledge that was mentioned theoretically, and how it is practiced during the lesson in practice. Since the videos included lessons for the four language skills and different teachers, this was a factor in attracting the attention and interest of the student-teachers and generating an element of pleasure and focus while watching.

While the videos-reflection got intermediate responses from the student-teachers, this may be because the videos included feedback sessions between the supervisor and the teacher and presentations of some excerpts. This is a reason for the student-teachers to feel that this video is based on dialogues that present abstract information. In addition, the activities followed by video-reflection may be needed to be modified to encourage student-teachers to appreciate the role of these types of videos in developing teaching practices.

Gender realize the importance of developing their theoretical and practical aspects during TEFL course. So, there are no differences due to gender in their responses to the tool. In addition, they all know that they will take the same final assessment test so they work and pay efforts in learning and following the activities according to their desire and accumulative level. For this reason, it is noticeable that the excellent EFL student-teachers like all types of activities and appreciate the role of all of them in developing their pedagogical knowledge and teaching practices.

As is well known, students who receive excellent in accumulative level follow and study continuously and continuously, whether the learning and teaching process is face-to-face or online, in order to maintain their level. These reasons made the differences in favor of the students with excellent levels showed an effect of the activities on their pedagogical knowledge and teaching practices more than other levels. While the students with acceptance levels had intermediate responses on all survey activities and items.

6   Conclusion and Recommendations

The results of the study concluded that the instructor's presentation had a high mean for all items and the total responses, while Scenario-based tasks and practical studies and practice teaching Videos for complete/part lessons had a high effect on developing EFL student-teachers teaching practices as the mean of responses indicated for both activities and each item except two items. But reflection videos from classroom teachers had an intermediate effect on developing EFL student-teachers teaching practices. The results also revealed that there were no statistically significant differences attributed to gender, however, there were statistically significant differences due to the accumulative average among EFL student-teachers responses. The significant differences were in favor of an excellent accumulative achievement level.

Based on these results, the researchers recommend TEFL courses instructors to use multiple purposes activities to develop EFL student-teachers pedagogical knowledge and teaching practices, and to use clear tasks with amazing activities to involve EFL student-teachers to do the activities and get the benefit of it. TEFL instructors are also recommended to follow up the tasks with EFL student-teachers so that they take the activity seriously and do it successfully, besides giving EFL student-teachers the opportunity to suggest other types of activities that they feel they can share in developing pedagogical knowledge and teaching practices. Further research is still needed in this field like finding the effect of each type of activity on developing pedagogical and teaching practices. Suggesting different types of tasks followed by each type of them to help EFL student-teachers to get the benefits and achieve the target are still needed also. Moreover, different types of activities for TEFL courses via e-learning platforms to enhance pedagogical knowledge and teaching practices can be done in other research.

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Irrational Thoughts and Their Relationship to the Body Image Among An-Najah National University Students in Light of COVID-19 Pandemic

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Abstract. This study aimed to identify the level of irrational thought and its relationship with body image among Ann-Najah National University students in light of COVID-19 pandemic, the study sample consisted of (102) students. In order to collect the data, the irrational thought Scale Al-Rihani (1985) was used and The Body Image Scale which prepared by Abdel-Nabi (2010), The results showed that the arithmetic average for the study sample on the irrational thought scale was high, and the arithmetic average for the body image scale was average grade and it shows a statistically significant positive direct correlation between irrational thought and body image.

Keywords: Irrational thought · Body image · University students

1 Introduction and Theoretical Framework

In late 2019, the release of COVID-19 pandemic was linked to health systems crisis and emerging economies it often parallels with the world diffusion of conflicting information about COVID-19, which WHO must sit it as a pandemic (Munich Security Conference, 2021).

Perhaps thinking of it as the highest level of knowledge as its weight is a necessity for the existence and continuity of the individual's existence and not just a tool for measuring human progress only, in addition to the fact that thinking plays a fundamental and important role in helping individuals to agree with those who are around them (Al-Moalem & Miqdad, 2020).

Studies confirmed that all rational and cognitive theories in psychotherapy agree with the basic assumption that irrational operations are the causes of psychological problems, and the best way to get rid of these problems is to modify the thinking processes behind them. At the same time, Craig Head considers that both Ellis and Beck are the most important influencers in cognitive behavioural therapy, As for Corsini points for the importance of beliefs, irrational thoughts, and emotional disorders, (Yasin and Al-shawi 2016).

Irrational thought for the individuals linked with their behaviours and their psychological, social, and physical compatibility, The behaviour of individuals, whether negative or positive, is determined by these thoughts. Ellis has been selected eleven ideas that have been considered in his theory as Irrational, superstitious and meaningless thoughts. However, as he says, it is common and imprinted in people's minds, it inevitably leads to the spread of neurosis, all ideas begin with necessity or indicate idealism, and past experiences and events determine current behaviour, the influence of the past cannot be ignored or hidden, one should be upset or sad about the misfortunes that happen to the other. These thoughts affect the life of the individual and build his personality. It may also play a role in his psychological variables (Al-Madani 2018).

As for the body image, which drops within the psychological variables that play an important role in building the personality of individuals of different ages, and which are related to how the individual understands it, the body image is a mixture of several components and is formed through interaction among them, and these components are represented in three, the first is the cognitive component or the perceptual, which is related to how much the individual's appreciation the size and shape of his body, and the second component is the sentimental (emotional), which expresses our feelings, thoughts and attitudes about our bodies, and the third component is the (behavioural) component, which refers to repeated interactions and behaviours that express a desire to repeat situations that make us feel comfortable around our bodies, or avoiding those that make us feel uncomfortable around our bodies (Al-Qadi 2009).

This is related to the concept of satisfaction with the body among individuals with their achievement, happiness in life in general, and their special way of thinking, that the image of the body is "the image or mental image that a person has about his own body while resting or in motion at any moment, and it is derived from subconscious sensations, changes in the body, contact with people and things outside, emotional experiences, fantasies and thoughts. (Abu Shaar, 2017:22)".

In other words, the body image is the mental image that the individual forms about his body, including the physical, functional and intellectual characteristics, and his attitude towards them, and the body image comes from conscious and unconscious sources, and constitutes an essential component in the individual's concept of himself, which constitutes several ideas about the body which reflected as behaviours, such as concerns about body weight and shape, especially among girls, and interest in losing weight and thinness, in addition to giving attention to body shape and consistency, clothes and general appearance, and how others see them. Such behaviours may turn into exaggeration and may lead to other problems (Al-Moallem and Miqdad, 2020).

From the above, it has been shown that the adopted ideas from the individual may affect his personality, his life in general and may play an important role in psychological and social aspects, and from these aspects the issue of body image Hence, this study came to reveal the relationship between irrational thoughts and body image among An-Najah National University students, since this age of group contemporary youth is clearly interested and pays more attention to the shape of the face and body in general, in line with what the century is witnessing of publishing pictures of celebrities, the impact of this group on them and their desire to reach what these personalities have achieved.

1.1   Study Statement

The Corona pandemic considers a great challenge to mental health, as this epidemic poses a threat to individual health and their loved ones, and it has a significant impact on important aspects of their lives such as the social and economic aspects, as the conditions of closure which imposed by the widespread of the emerging virus led to a change in the general way of thinking among the people, including university students, became more afraid and worried about their health, their lives and their general appearance if they were infected with the disease directly or indirectly.

This study brings to address an important issue related to psychological variables of importance to students, which is to identify the relationship between irrational thoughts and body image in light of the Corona pandemic, which may be of great importance at the university student phase. In light of the psychological tradition related to the study of irrational ideas adopted by the individual, irrational ideas may play an important and effective role in the individual's negative experience, including poor time management, especially in the university education stage. The problem of the study focuses on answering the main question of the following:

What is the relationship between irrational thoughts and body image among An-Najah National University students in light of the Corona pandemic?

The following sub-questions are derived from it:

1. What is the level of irrational thoughts among An-Najah National University students in light of the Corona pandemic?
2. What is the level of body image among An-Najah National University students in light of the Corona pandemic?

1.2   Terminology of Study

Irrational Thoughts: "Ellis" defines them as negative, illogical, and unrealistic thoughts that are characterized by the subjectivity that is affected by personal desires, based on false expectations and generalizations and a mixture of speculation, probability, and exaggeration, and do not agree with the individual's realistic capabilities (Kilani, 2021:19), The study defines irrational thoughts procedurally as the degree to which the respondent obtains on the scale of irrational thoughts which used in the study.

Body Image: It defined as "a person's thoughts, perception and attitude towards his personal appearance, which is how a person sees himself and how he feels about his body shape when looking in the mirror" (Al-Qadi 2009:17), The study defines Body image thoughts procedurally as the degree to which the respondent obtains on the scale of body image which used in the study.

Corona Pandemic (Covid-19): is a family of viruses that may cause illness in animals and humans and cause respiratory disease in humans, ranging in severity from a common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and severe acute respiratory syndrome (SARS). and is characterized by its rapid spread (WHO 2020).

2 Methods of the Study

The descriptive correlational approach was used in data collection, The study population consisted of all students enrolled in the first semester of the year 2022, which reach 23,000 male and female students, and the sample was chosen by the accessible method, consisting of 102 students.

2.1 Instruments of the Study

The scale of irrational thoughts, which was developed by Al-Rihani (1985), the Jordanian standardized version, and the scale consists of (52) paragraphs, which aims to measure the irrational thoughts of university students. The paragraphs' correlation coefficients with the total score of the scale ranged between (33.-72.), all items were statistically significant, and the stability of the scale was confirmed, as the value of the stability coefficient of Cronbach's alpha was acceptable in all dimensions of the scale, as it came in varying degrees between dimensions, and ranged between (0.60 - 0.70) For each dimension, which indicates the stability of the tool and its suitability for use.

The Body Image Scale was prepared by Abdel-Nabi (2010), and this scale consists of (27) paragraphs. The validity of the scale was verified by calculating the construction validity (the internal consistency of the scale), and the paragraphs that were deleted are (1/5/7/16/). 22/26/27) of the scale because it is not statistically significant to the total score of the scale, and Cronbach's alpha stability coefficient for the scale paragraphs was high and appropriate, which reached (0.904).

3 Results and Discussion

– "What is the relationship between irrational thoughts and body image among An-Najah National University students in the light of the Corona pandemic?"

To answer the question, the Pearson Correlation coefficient was elicitation to reveal the relationship or not between irrational thoughts and body image.

Table 1 shows that there is a direct, statistically significant, correlation at the significance level ($\alpha = 0.05$) between irrational thoughts and body image, and between some ideas and body image, where there was a relationship between the eighth irrational idea which states: "The person must be dependent on others/and there must be someone who is stronger than him in order to depend on him." And the body image, where the correlation coefficient was (0.360**) and this means that there is a statistically significant and positive directional correlation. The owners of this idea may tend not to carry out the tasks that required to them, which may push them not to carry out their responsibilities and rely on others (Al-Moallem and Miqdad, 2020). This may be due to the fact that individuals who have a high score about body image form a high image, and this may contribute to explaining the above result.

There is also a relationship between the ninth irrational idea, which states that "past experiences and events determine the present behaviour, and that the influence of the past cannot be ignored or erased" and the body image, where the correlation coefficient

Table 1. Pearson correlation to reveal the relationship between irrational thoughts and body image

	Body image	1	2	3	4	5	6	7	8	9	10	11	12	13
Body image	1.00													
1	−.111	1.00												
2	.108	.296	1.00											
3	−.086	.256	.425	1.00										
4	.057	.504	.190	.426	1.000									
5	.181	.198	.360	.390	.367	1.00								
6	.164	.161	.307	.480	.239	.444	1.00							
7	.125	.221	.258	.240	.396	.349	.243	1.00						
8	**.360***	.108	.159	.137	.202	.158	.256	.133	1.00					
9	**.296***	.252	.295	.236	.165	.334	.291	.218	.148	1.00				
10	.160	.265	.179	.223	.353	.273	.344	.370	.247	.193	1.00			
11	.024	.345	.248	.345	.338	.474	.517	.326	.143	.163	.396	1.00		
12	**.275***	.231	.187	.371	.291	.262	.406	.271	.207	.393	.396	.322	1.00	
13	**.218***	.111	.260	.040	.038	.314	.288	.226	.189	.140	.298	.306	.282	1.00

* at the significance level ($\alpha = 0.05$) ** at the significance level ($0.01 = \alpha$)

is (0.296**). Those who hold this idea believe that the past is an essential thing that can never be ignored, while individuals consider that the body image is cumulative and results from the past and the present, and is formed during all the stages that the individual goes through, as the past experiences that may relate to the social view and the experiences of the individual during the development and changing shape of the individual this may play a role in the body image, As the shape changes over time and according to age.

The results also showed a correlation between the twelfth idea, which states: "A person should be formal and serious in his dealings with others in order to have a value or a respectable position among people" and the body image, where the correlation coefficient reached (0.275**), and finally there is a positive relationship correlation between the thirteenth idea, which states: "There is no doubt that the men position is the most important in his relationship with the woman" and the body image, where the correlation coefficient between them is (0.213**). It is expected that this result is due to the nature of the intellectual formation of women and men and how to interpret the surrounding matters, and since the owners of this idea believe that males are more important, therefore, the source of this belief may be due to psychological, social and other factors and may also be related to the way they interpret the body image.

– "What is the level of spread of irrational thoughts among An-Najah National University students in light of the Corona pandemic?"

the mean, standard deviations, and ratios of the scale of irrational thoughts among the students of An-Najah National University were calculated. Table 2 shows this:

Table 2. t-test on one-sample test for the difference between the average sample and the average hypothetical community of irrational ideas (n = 102).

Irrational thoughts	M	%	SD	P	(T)	Degree
First	3.77	75.4%	.647	.000	12.1	high
Second	3.82	76.4%	.506	.000	16.5	high
Third	3.86	77.2%	.573	.000	15.2	high
Forth	3.74	75.0%	.659	.000	11.4	high
Fifth	3.77	75.4%	.559	.000	14.0	high
Sixth	3.75	75.0%	.514	.000	14.8	high
Seventh	3.74	75.0%	.558	.000	13.4	high
Eight	3.67	74.8%	.542	.000	12.5	high
Ninth	3.47	69.4%	.596	.000	7.97	high
Tenth	3.52	70.4%	.587	.000	9.02	high
Eleventh	3.79	75.8%	.578	.000	13.8	high
Twelfth	3.56	71.2%	.575	.000	9.89	high
Thirteenth	3.53	70.6%	.546	.000	9.91	high

* at the significance level ($\alpha = 0.05$) ** at the significance level ($\alpha = 0.01$)

The results showed that all irrational thoughts ranged between (3.47 to 3.86), as the third irrational **thought** was the highest degree among the irrational thoughts and came with an average higher than the hypothetical average and it was somewhat high and amounted to (3.86), followed by the second **thought** with an average of (3.82).), then the eleventh **thought** with an average of (3.79), then the fifth and the first, and the average for each of them was (3.77), and the seventh and fourth **thought** reached an average of (3.74), while the ninth **thought**, which averaged (3.47), was the lowest among the irrational thoughts, But it is also high, and this result can be explained by the fact that university students, especially during the current stage, and the difficult circumstances they have gone through as a result of all the difficulties that the world has been exposed to resulting from the Corona pandemic, such as quarantine, e-learning and other circumstances, has caused them a lack of self-confidence. Weakness in emotional stability. The current study agreed with a conclusion with the findings of each study: (Al-Anari 2018). While the results of the current study differed from the study of (Chan and Sun 2019; Abdullah and Hussein 2019; Al-Madani 2018; Al-Miqati and Shaheen 2019).

– "What is the level of body image concept among students of An-Najah National University?"

Table 3. One-sample t-test for body image (n = 102)

	M	%	SD	P	T	Degree
Body image	2.97	55.8%	.625	.000	−0.50	Medium

Table 3 showed that the level of body image among students of An-National University was statistically significant, at the level of significance (α = 0.05), for the overall level of body image concept level, where the value of the level of significance (0.00), and the average calculation of the responses of the sample members was average (2.97). Thus, the concept of body image in the sample was low. This may be because the concept of body image is a vital part of our sense of self, as it is linked to our self-esteem, social and family relationships, and affects many social factors. Under the light of quarantine conditions, as well as the lack of social relations, particularly among colleagues, university students have suffered from some of the social problems caused by the corona, which may play a role in explaining this result. This result agreed with the findings of each study (Al-Ashram, 2008; Al-Azzawi, 2005). While this result differed from the findings of a study (Karim and Khamis 2017).

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The Effect of Alternative Assessment in Scientific Thinking in Light of the Corona Pandemic Among Students of the Upper Basic Stage in Nablus Governorate

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Abstract. This study aimed to investigate the effect of using alternative assessment on scientific thinking in light of the Corona pandemic among students of the upper basic stage in UNRWA schools in Nablus Governorate. The study population consisted of (6087) male and female students; the randomly chosen study sample included (60) boy and girl eighth graders studying at Ghor Al-Far'a Elementary Mixed School. The participants were randomly distributed into two groups. The experimental group included (30) male and female students and was assessed using the alternative assessment method, while the control group (30) boy and girl students was assessed using traditional assessment techniques. The study tools were prepared including a scientific thinking test and a verbal scale. The results of the study showed that there were statistically significant differences between the performance averages of the members of the control and experimental study groups on the test of scientific thinking skills in favor of the experimental group. The study recommended that the Ministry of Education take alternative assessment into consideration when designing curricula.

Keywords: Assessment · Alternative assessment · Covid-19 · Scientific thinking · Science education

1 Introduction

Thinking plays an important role in the teaching/learning process; it is one of the higher cognitive mental processes that lead to the progress and improvement of human life; most of the scientific achievements made by humanity are based on the thinking process (Al-Ashkar 2015). There are many important types of thinking that educators seek to develop among students including scientific thinking which helps learners adapt to the surrounding developments and solve the problems they encounter (Mowafi 2003). One

of the most important duties of a science teacher is to train students in scientific thinking and help them organize and improve their ways of thinking by encouraging them to analyze, develop hypotheses, and collect evidence in order to generate new ideas. The idea of alternative assessment is based on the fact that student's learning and academic progress can be evaluated by works and tasks that require active attention such as research and investigation of complex problems and conducting field experiments. The intended method of evaluating students' performance reflects a remarkable development in the process of student (Al-Sarraf 2002).

Alternative assessment focuses on performance; it is authentic or realistic as it constitutes an alternative entrance to assess students in a more broad and dynamic way than what is included in traditional tests. Furthermore, it is not just a test measured by limited questions that mostly require paper and pencil; therefore, this type of has received wide attention due to the fact that the application of alternative assessment tools in educational systems has shown progress in the performance level of students, and enhanced learning by providing regular feedback and giving a comprehensive picture of all aspects of student growth (Allam 2009: 20).

The difficult and unprecedented time of the spread of the Corona virus (Covid-19) around the world, and the closure of schools and universities in accordance with preventive and precautionary measures to control has forced large numbers of students to stay at home; the majority of educational institutions headed towards distance learning as a more appropriate alternative to ensure continuity of the educational process using many platforms via the Internet, such as "Moodle" or "zoom" and others (Khalif et al. 2021). This crisis cast a shadow over the education sector; it raised great concerns among parents and those affiliated with educational institutions including teachers and students.

The idea of alternative assessment in improving the education process has attracted the attention of many researchers. For example, some studies aimed at knowing the impact of the use of alternative assessment in the development of the cognitive and skill aspects (Al-Ashkar 2015; Duda 2019). These studies have proved its effectiveness. Therefore, the current study came to investigate the degree of employing students' skills and knowledge within realistic contexts and their involvement in real tasks related to their lives in light of the Corona pandemic.

2   Statement of the Problem

Corona pandemic has cast its shadow on the educational process; it has resulted in closing schools and educational institutions in general. Criticism is also directed at the educational process which proved to be unable to use traditional assessment (pen and paper). Besides, the culture of self-assessment and peer assessment is not common in our educational institutions. Unlike alternative assessment that focuses on scientific thinking, traditional assessment focuses on remembering; therefore, it was necessary to investigate the impact of using alternative assessment methods in developing scientific thinking among students in light of the Corona pandemic. In light of the above, the study problem was identified in the following main question: "Is there an effect for using the alternative assessment on developing scientific thinking among students in light of the Corona pandemic in Nablus Governorate?".

3 Alternative Assessment Philosophy and Concept

The constructivist theory stands behind alternative assessment in that students must build knowledge by themselves, and the teacher must put them in events and situations that challenge them and provide an opportunity for them to search, investigate, interpret, discover and develop their thinking skills; this is approved by the modern trend in assessment (Al-Ghamdi 2012). The alternative assessment leads to deeper and more productive learning (Bosnakis 2019) and develops the quality of knowledge and skills (Al-Muzaini 2020). It is based on several basic principles including the necessity of diversifying the use of assessment tools and not considering paper and pen tests as the only assessment tools. Individual differences in measuring the attributes subject to measurement and comprehensiveness in the assessment process, i.e., everyone who participates in the assessment should participate in the assessment, must be taken into account. The student, the teacher, and the principal should participate to ensure the continuity of the assessment process. There is also the need to accept the role of the family in the process of follow-up and guidance for their children with the school to ensure that the learner is the focus of the educational process because knowledge is formed and built by the learner. The alternative assessment emphasizes the practical side, direct measurement and the use of realistic problems that encourage innovative thinking (Sulaiman and Abu Allam, 2010).

Asiri (2021) defines alternative assessment as an organized process for evaluating all aspects of the learner's personality and employing thinking skills to perform realistic tasks in various ways such as work files, class activities, research, reports, scientific experiments, homework, self and peer assessment, concept maps, and others. While Hariri (2008) defines it as a process that depends on the assumption that knowledge is formed and built by the learner because knowledge differs from one context to another; this type of assessment is based on the possibility of forming an integrated picture of the learner in the light of a set of alternatives (e.g., records cumulative). Stiggins (2001) states that it is the assessment that requires the learner to perform activities that demonstrate his ability to perform certain skills or create products that achieve certain quality levels, and this requires observing the learner during his/her performance or examining products and evaluating level of efficiency.

4 Objectives of the Alternative Assessment

Alternative assessment contributes to bringing about a fundamental change in the student's role; the student has become the focus of the educational process that makes him more active and effective, develops his ability to respond to learning tasks and life problems, and improve the student's ability to think mathematically (Al-Ashkar 2015). It also works to provide rich educational opportunities for students to develop their skills, in addition to changing the role of the teacher to be a mentor and guide for students; it measures higher-order thinking skills that the traditional assessment does not measure as it focuses on multiple dimensions of measurement instead of one; besides it provides feedback to the teacher and student, helps improve the educational process, and it works to evaluate collective projects in a real way based on clear standards. This makes the

students' vision more crystal clear and contributes to increasing the validity of the testing processes. Schools benefit from the results if the assessment is implemented alternatively on a large scale (Keh, and Champion 2017).

5   Characteristics of the Alternative Assessment

Alternative assessment aims to achieve distinct educational levels or specific educational outcomes of a broad scope that require highlighting the student's various skills within the framework of curricula based on thinking. Alternative assessment is based on realistic tasks that require responses that closely resemble the mental processes that the student uses in realistic problem solving; it is also based on direct assessment of the desired behavior or performance, i.e. in the context in which the performance was used (Allam, 2004). Alternative assessment leads to changing the ways in which the teacher teaches and students learn. It is necessary to improve teaching and increase the teachers' personal efficiency.

The development of teachers is based on practice (Keh, and Champion, 2017) and will even benefit students and teachers in developing self-efficacy in research (Al-Mazrou 2009). Thus, alternative assessment provides students with the opportunity to actively participate in activities instead of being only negative test respondents. It develops critical thinking skills. It also develops students' reading and writing skills (Bosnakis, 2014). In addition, alternative assessment changes the role of teachers (Abdel Hamid, 2002) and develops practical skills such as mapping skills.

6   Thinking and Scientific Thinking

Thinking is one of the most studied topics in the fields of educational psychology, and all philosophical, intellectual, educational and cognitive schools have been concerned with it in order to help the individual become more able to face the difficulties and problems that stand in his way in all different aspects of life (Al-Atoum 2012).

Thinking in its general sense is a mental activity which differs from sensation and perception and goes beyond both to abstract ideas (Al-Atoum 2012: 19). Tibi (2005) defines it as a holistic mental process that deals with sensory input and information to form ideas and judge them. The constructivist theory was concerned with scientific thinking among students through its interest in the cognitive processes of the learner and its focus on the need to create a learning environment to make the student build his/her knowledge by himself and not acquire it negatively from others. Many changes have resulted in making the curricula exciting for scientific thinking by creating the appropriate conditions for students to acquire scientific thinking skills, learning processes and solving problems that students face in their lives (Al-Marwani, 2010).

There are several basic skills for any logical thinking process including: the observation skill, the recall skill (remembering), classification skill, the comparison skill, and the summarizing skill (Al-Adly 2016). Thinking skills include: analysis, planning, assessment, conclusion, and making decisions, all of which represent the processes carried out by the individual in order to collect, preserve and store information (Wilson, 2002). The pattern of thinking is educated and developed, and the individual acquires it

through his/her response to the stimuli s/he faces and the repeated reinforced responses that constitute a pattern of thinking for him/her (Tibi 2005). There are several types of thinking: thinking by trial and error, inductive thinking, deductive thinking, thinking in a problem-solving style, while Al-Surour (2001) classifies the thinking patterns into: personal thinking, scientific thinking, reflective thinking, thinking about solving problems using foresight, predictive thinking, behavioral scientific thinking, and thinking through observational learning. Al-Jamal (2001) sees that the patterns of thinking are: imaginative, reflective, innovative, deductive, insightful, and associative thinking.

7 Scientific Thinking Skills

When facing a problem or wanting to think about something; there are steps that can be followed to think scientifically

* Feeling and sensing the problem.
* Defining the problem and formulating it in the form of a question or a statement.
* Collecting data and information. * Developing hypotheses.
* Testing the validity of the most probable hypotheses.
* Getting results and applying solutions.

8 Method and Procedures

The current study followed the experimental method with a quasi-experimental design; the study population consisted of all students (6087) of the upper basic stage in UNRWA schools in Nablus Governorate for the year (2020/2021). The study sample included (60) students from the eighth grade studying at Ghor Al-Fara' Mixed School: 30 students in the experimental group and 30 students in the control group. The study tools included a test of scientific thinking and a rubric scale for the lessons taken from the book of science and life for the eighth grade. The Scientific thinking test consists of 25 multiple-choice paragraphs; each paragraph has been formulated according to scientific thinking skills, namely (defining the problem, setting hypotheses, testing the validity of hypotheses, interpretation, and generalization). Validity of the test was verified and reliability was calculated using Kappa correlation coefficient it was (0.84). A rubric verbal scale was built for the lesson, and its apparent validity was verified and the correlation coefficient was calculated using Kappa coefficient which was (0.76).

9 Study Results and Discussion

The means and standard deviations of the students' scores on the pre and post scientific thinking test were and the results are shown in Table 1.

Table 1 shows that for all the skills post test means for experimental group are greater than that of control group; to see if we can generalize the results ANCOVA test was conducted. The significance level of the group variable in all scientific thinking skills was less than (0.05), and this means that there were significant differences between the

Table 1. Analysis of variance (ANCOVA) test for students' scores on the scientific thinking test according to the assessment method variable.

Skill	Group	Pre-test M	SD	Post-test M	SD	ANCOVA source	SS	Df	MS	F	P	η^2
Defining the problem	Con	3.2	1.32	3.22	1.63	groups	10.33	1	10.3	6.53	0.01	0.19
	Exp	2.73	1.27	3.73	0.79	error	42.73	27				
						Total	54.8	29				
Assignment mode	Con	2.66	1.04	2.5	1.23	groups	8.98	1	8.98	6.71	0.01	0.19
	Exp	2.86	1.12	3.46	1.06	error	36.11	27				
						Total	46.7	29				
Hypothesis validity test	Con	2.2	1.14	2	1.19	groups	13.46	1	13.4	10.6	0.00	0.28
	Exp	2.4	1.29	3.4	1.12	error	34.39	27				
						Total	52.3	29				
Interpretation	Con	3.06	0.78	3.06	1.03	groups	22.43	1	22.4	32.2	0.00	0.54
	Exp	2.4	1.35	3.66	0.72	error	18.8	27				
						Total	41.46	29				
circular	Con	2.66	1.39	2.5	1.33	groups	28.62	1	28.6	24.6	0.00	0.47
	Exp	3.13	1.12	4.13	1.06	error	31.43	27				
						Total	76.96	29				

members of the control and experimental group in the (defining the problem, setting hypotheses, examining hypotheses, interpretation and generalization) skills in favor of the experimental group which was evaluated using alternative assessment. The size of the effect of using the tools and alternative assessment on the scientific thinking skills of the experimental group was large as the η2 box for the skill of defining the problem was (0.19), the skill of setting hypotheses was (0.19), the skill of testing the validity of hypotheses was (0.28), the skill of interpretation was (0.54) and the skill of generalization was (0.47). This indicates the importance of this method and the effectiveness of its tools in helping students develop their scientific thinking skills compared to the traditional method and tools of assessment.

The experimental group proved to be better than the control group whose performance was evaluated by the traditional method. The rating scale during the study period indicates the active role of the learner during their practice of the process; the students who were given the opportunity to evaluate themselves began to record notes about the extent of their learning and to organize this data and link it to their previous experiences. When the student responded to the alternative assessment tool on a specific skill, s/he

was given the opportunity to find out her/his weaknesses in the skill, and this is equivalent to the skill of identifying the problem. This helps the learner to move from teacher- and subject-centered learning to learner-centered learning. When the student responds to the alternative assessment tool on a specific skill, s/he is allowed to know his/her weaknesses in the skill, and this is equivalent to the skill of identifying the problem.

Then the student makes plans and proposes solutions to address his/her weakness and this corresponds to the skill of setting hypotheses, then s/he begins to apply the proposed solutions and this corresponds to the skill of testing the validity of the hypotheses and then explains the reason for the existence of the previous weaknesses and then generalizes the above to his other educational problems and this corresponds to the skill of interpretation and the skill of generalization, and so it is a ladder Verbal estimation helps in developing the learner's scientific thinking skills. The evaluation practice works on developing self-efficacy in the research, and provides the learner with the opportunity to actively participate in the evaluation activities instead of being only passive respondents to the test.

These activities reveal hidden aspects in the student that are not highlighted by the traditional tests that reveal their weaknesses (Al-Mazrou' 2009), and they increase the student's self-confidence and relieve his test anxiety, as they can be modified in proportion to the individual differences of learners with different learning styles. Alternative assessment is characterized by its flexibility and the diversity of its strategies. It also helps in forming positive attitudes towards school and learning among students, and works on developing critical thinking skills, and developing reading, writing and speaking skills (Bosnakis, 2014). In addition, alternative assessment changes the role of teachers from indoctrination to guidance and direction. Focusing on teaching the learner how to learn, which helps learners to take responsibility for their own learning, through each student evaluating his own learning, and this was confirmed by the constructivist theory of learning.

In alternative assessment, students were informed of the criteria on which their performance will be evaluated. These criteria were presented in advance to the students before starting the assessment process and they were discussed with them; this helped them focus on those standards and directed their efforts towards them; it also allowed them to know the amount of the skills they were able to perform. Besides, it helped students benefit from each other's experiences through dialogue and discussion.

Alternative assessment is consistent with the principles of the constructivist theory in making the learner active in acquiring knowledge and linking it to the previous experience of adaptation so that the new knowledge becomes meaningful. The use of the verbal rating scale in students' assessment enabled them to identify the tools needed to conduct experiments and collect the materials needed to perform the tasks; it also helped students to become self-reliant and be in favor of taking initiatives. The results of this study were consistent with the results of Bani Odeh (2015), Al-Sharif (2019), Al-Ashkar (2015), Bosnakis (2019), Koh and Champan (2017), Al-Muzaini (2020) and Hamid (2013).

In the dimensional reflective thinking test, the results of this study were inconsistent with the results of Al-Saeed (2009), which concluded that there were no statistically significant differences between the experimental and control group in the achievement test for the concepts of scientific research.

10   Recommendations

In light of the results mentioned, the researchers recommend conducting studies on the impact of alternative assessment on other types of thinking. That the Ministry of Education should take alternative assessment methods into consideration when designing curricula.

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Effects of Using E-Learning on Students' Academic Performance in University College of Applied Sciences

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Abstract. In this research, the effect of e-learning on students' academic performance at the University College of Applied Sciences (UCAS) in Gaza, Palestine has been studied, from the students' perspective. The descriptive-analytical approach was used, where a questionnaire was prepared to collect data from a snowball and convenience sample of the UCAS students. The data was obtained from 308 students and analyzed using multiple regression analysis. The results showed that there is an effect of the elements of e-learning (synchronous e-learning systems, asynchronous e-learning systems, and e-learning tools and software) on the students' academic performance at UCAS. While this research builds on prior studies, it also provides results that could aid academics and practitioners in their pursuit of improving the academic performance of students.

Keywords: E-Learning · Academic performance · Palestine · University College of Applied Sciences

1 Introduction

One of the most important components of the economy is the educational sector. Within the education industry, a rivalry has intensified in recent years. As a result, academics and researchers are focusing more on the educational sector [1, 2]. Education is identified as a priority for each individual in this age of globalization and technological change. It plays a crucial role in the growth of human capital and is linked to people's prosperity and opportunities for a better life [3].

E-learning has become an integral aspect of the university curriculum. Some theories have been utilized to investigate the motivational and contextual aspects that impact involvement in instructional activities, such as reasoned action and planned behavior [4, 5]. Universities all across the world have adopted e-learning as a widespread method of delivering instructional resources in higher education, especially during the COVID 19 pandemic. As a result of these developments, there is a growing need for education that may be delivered in a variety of ways. This necessitates the use of distance learning. Even if distance learning was popular long before the internet, technical advancements

have allowed ICT to become a more important tool for various types of learning. The World Wide Web has long been used in education as a source of information and even as a learning tool [6]. All of these theories or approaches agree that motivating the learner is critical [7, 8].

Hoffmann [9] proposed that e-learning can take two forms: asynchronous and synchronous. Asynchronous e-learning is primarily self-initiated and takes place at the learner's leisure and their preferred location. It may be done alone using e-books or CD-ROM lessons, or it can be done with others via email, online bulletin boards, and discussion forums. Asynchronous e-learning is contrasted with synchronous e-learning, which involves one or even more learners and a learning facilitator conversing in actual time [10, 11]. The quality of students' learning outcomes is based on their past learning experiences, learning ideas, and study methodologies [12]. Face-to-face, instructor-centered learning is used by a larger percentage of learners in Palestine. The subject of whether the use of ICT in Palestinian education has a good influence on learners' experiences and learning results is being debated. Thus, the objective of this paper is to examine the effect of using e-learning on students' academic performance at UCAS.

2 Theoretical Framework

2.1 Academic Performance

Chang et al. [13] agreed on the same concept of academic performance, learning performance, academic accomplishment, and learning achievement, i.e. the learning outcomes of university students in many topics, or the long-term outcome of learning processes. Academic performance is defined as pupils obtaining information and abilities in universities through specific curricula and resources, which are often shown through examination performance or academic exams [14]. It is also defined as knowledge, understanding, and skills obtained via the professional curriculum and instructional design experience in special education, i.e. persons learning specific material and practicing skills [15]. As a result, learning achievement might be divided into two categories: specialized and generic [16]. Magal-Royo and Lopez [17] classified students' learning records, such as assignments, quizzes, mid-term examinations, and final exams, as generic academic performance. Subject-specific learning performance or the total mean performance of topics was characterized by Chen and Wang [18] as specialized academic performance. Academic performance was, without a doubt, student achievement on the increase of life adaption and physical and mental growth via learning, according to the true meaning of education [18].

2.2 E-Learning System

Asynchronous and synchronous e-learning are the two forms of e-learning. Synchronous e-learning demands the simultaneous participation of all students and teachers in many locations. It attributes to any real-time learning event that incorporates instantaneous two-way contact between participants and is presented to remote learners. As a result, synchronous e-learning is the provision of learning on a set timetable. Learners and instructors do not have to participate in asynchronous e-learning at the same time. It refers to any type of learning that isn't done in real-time [19].

2.2.1   Asynchronous E-learning System

Asynchronous e-learning is a sort of e-learning in which information is supplied as soon as it is needed, giving learners a lot of control over learning time, procedure, and material. Since they are easier to put up and less expensive than synchronous e-learning approaches, many current e-learning systems include asynchronous learning environments [20]. Furthermore, synchronous e-Learning does not provide for schedule flexibility. In comparison to traditional classroom learning, extensive research has demonstrated that e-learning provides significant advantages for learners [21]. Exam marks and student satisfaction have been used in several studies to show that e-learning is effective as of successful as traditional classroom learning [22]. While the majority of the literature stresses the advantages of e-learning, several studies have also highlighted its disadvantages, such as dissatisfaction, misunderstanding, and a loss of interest in the subject matter [23].

Multimedia material delivered over ever-increasing network bandwidth has a substantial influence on learning processes and outcomes. It generates a multi-sensory learning atmosphere that may aid learners to recall more information [24], and urge them to draw attention to a task by presenting information more colorfully and richly [25]. Many students choose online courses due to their asynchronous character, which must be considered. Synchronous e-learning using media such as video conferencing, text messages, and chat, as well as the organization of face-to-face meetings as a supplement, could be required for students to get to meet one another and organize the activities at hand for the discussion of complex subjects. However, asynchronous e-learning using media such as e-mail, discussion forums, and blogging is preferred for discussing tough concepts that take time for consideration [26]. Asynchronous communication allows students to study at their own speed. This communication does not need learners to be present at the same moment to perform teaching and learning activities. Learners in an asynchronous communication environment can participate in a conversation that allows them to access the conference or teaching at various times. As a result, learners may work when and where they choose, at their own pace, giving them extra time thinking about their own ideas and encouraging them to think critically [27]. Based on the aforementioned, we propose the following hypothesis:

H1: Students' academic performance is positively influenced by synchronous e-learning systems.

2.2.2   Synchronous E-learning System

Synchronous e-learning uses several digital technologies and materials, including phone calls and videoconferencing, as well as voice over internet protocol and internet video streaming [28]. Some synchronous e-learning solutions, such as video conferencing and Live Virtual Classrooms, combine two or more synchronous technologies to give a solution with many communication channels [29]. For example, video-conferencing combines video and voice to shorten the time it takes to communicate with people face-to-face, and it is utilized to expedite meetings in businesses and industries, as well as for educational purposes [30]. Live Virtual Classrooms similarly combine video and audio, but they're designed specifically for web-based teaching and education. Therefore, they

contain a variety of different tools, such as collaborative whiteboards, and instruments of resource categorization, as well as contributor response tools, that are designed to enhance interaction and remote learning. Because of technological advancements, e-learning communities may now be developed as either synchronous or asynchronous [31]. Thus, the following hypothesis can be stated:

H2: Students' academic performance is positively influenced by asynchronous e-learning systems.

2.2.3   E-learning Tools and Software

In general, it can be said that e-learning has some tools and software that can only be done through it, namely:

- Computers: An electrical device capable of receiving data and processing it into useful information. It also saves them on various storage media and can often share the findings and information with other devices that are compatible. Operating systems are pieces of software that operate on computers. The computer would be a stiff component without them. Operating systems instruct a computer on how to conduct tasks and frequently provide a platform for programmers to create applications [32].
- LCD, DVD electronic display devices: popularly known as screens are display devices used to display images, texts, and videos transmitted electronically, without permanently recording them. Electronic display devices include televisions, computer monitors, and digital panels, as well as projectors. Electronic displays are also prevalent in all mobile computing applications such as tablets, smartphones, and information devices [33].
- The smartboard: It is a touch-sensitive white electronic display (panel) that is connected to a computer and a data display device and displays and interacts with various computer applications stored on the computer or the Internet, either directly or remotely, using the sense of touch (with a finger, digital ink pens, or any pointing tool). [34].
- Application software and content viewers: It's a type of computer program that takes advantage of the computer's capabilities to carry out the tasks specified by the user. System software, on the other hand, integrates a computer's various capabilities but does not utilize them to carry out user tasks [35].

We suggest the following hypothesis based on the foregoing:

H3: Students' academic performance is positively influenced by e-learning tools and software.

The conceptual framework of the study is depicted in Fig. 1. (1). The independent variables (synchronous e-learning systems, asynchronous e-learning systems, and e-learning tools and software) are linked to the dependent variable in this model (and the UCAS students' academic performance).
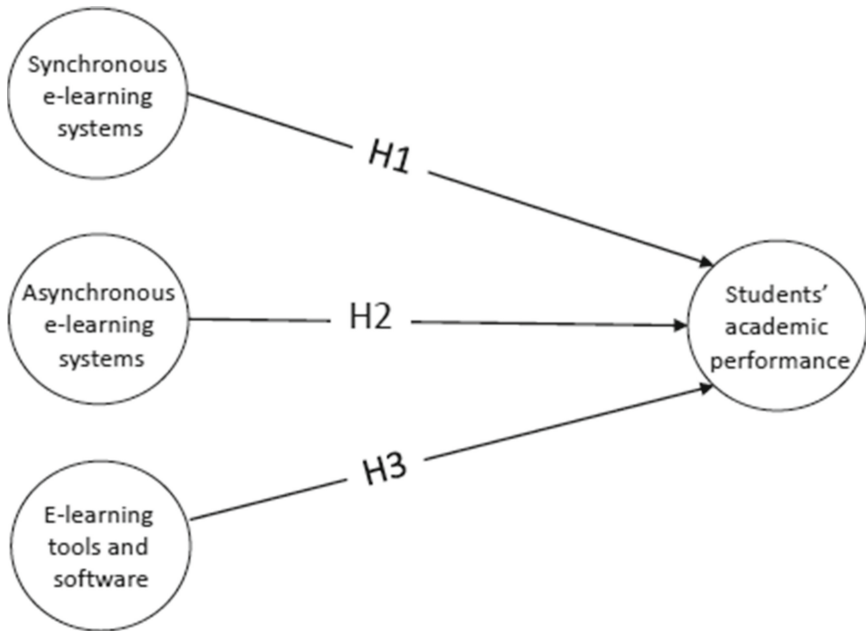
Fig. 1. The research framework

3 Methodology

3.1 Participants

The questionnaire was completed and returned by 308 students in total as shown in Table 1. Males account for 102 of the respondents, while females account for 206. In addition, the table shows the participants' specialty and academic levels.

3.2 Procedures

UCAS students were approached via the researchers' social media networks, where a questionnaire was posted for four weeks. Respondents were invited to share the survey with their colleagues at UCAS. The questionnaire was designed specifically for this study, using Google Form, to collect primary data and test the hypotheses of the current study. As a result, the study's population includes all students at UCAS. For this study, 308 responses were received and analyzed.

3.3 Measures

The survey was conducted using a 5-point Likert scale questionnaire (1 = strongly disagree, 2 = disagree, 3 = no opinion/neutral, 4 = agree, and 5 = strongly agree), and it has four domains. The first domain, designed in reference to Lin and Gao [31], Ogbonna, et al., [19], uses eight items to assess synchronous e-learning. For the second

Table 1. Profiles of the respondents ($n = 308$)

Variables	Groupings	No. of respondents	%
Gender	Male	102	33.1
	Female	206	66.9
Specialization	Technology Management	71	23.1
	Applied Accounting	50	16.2
	Media and Communication Technology	44	14.3
	Nursing	54	17.5
	First Basic Education	43	14.0
	Multimedia	46	14.9
Academic level	First	49	15.9
	Second	75	24.4
	Third	83	26.9
	Fourth	101	32.8

domains, asynchronous e-learning was investigated, seven items were created in line with Lin and Gao [31], Ogbonna, et al., [19], and Hadullo et al., [26]. The third domain included eight items to look at e-learning tools and software [32–34]. The fourth domain evaluated students' academic performance using fifteen items collected from Hanham et al., [35], Rasheed et al., [1], and Liu [16].

4   Results

4.1   Factor Analysis

The KMO and Bartlett's tests were used to determine whether the factor analysis is appropriate for the study purpose. The results of the reliability test should be more than 0.7. Bartlett's Sphericity test findings should likewise be less than 0.05. KMO is 0.758, which is greater than the acceptable threshold of 0.000, suggesting that this analysis is sufficient for the research.

To construct the factor score coefficient matrix produced using principal components analysis [36–38], one principal factor is rotated using the varimax normalization, as shown in Table 2. There are 38 variables in the factor. The research suggests that a loading value of 0.30 is the lowest threshold for item loadings on various scales [39–44]. Table 2 demonstrates that all of the loadings are greater than 0.30, showing that the scales' construct validity is preserved.

4.2   Hypotheses Testing

The relationship between the independent variables (synchronous e-learning systems, asynchronous e-learning systems, and e-learning tools and software) and the dependent

Table 2. Reliability and factor loading of the constructs.

Construct	Item	MV	SD	FL	Cronbach's α
Synchronous e-learning	1	3.97	0.80	.702	.768
	2	3.88	0.91	.647	
	3	3.88	0.87	.629	
	4	3.81	0.83	.626	
	5	3.85	0.96	.653	
	6	3.82	0.96	.592	
	7	4.00	0.84	.704	
	8	3.70	0.86	.637	
Asynchronous e-learning	1	3.76	0.93	.621	.799
	2	4.14	0.72	.636	
	3	3.91	0.82	.618	
	4	3.59	0.97	.735	
	5	3.85	0.90	.5.73	
	6	3.76	0.85	.637	
	7	3.61	0.97	.536	
E-learning tools and software	1	3.98	0.79	.583	.783
	2	3.77	0.98	.641	
	3	3.68	0.93	.584	
	4	3.82	0.79	.672	
	5	3.94	0.79	.683	
	6	3.66	0.93	.648	
	7	3.99	0.74	.573	
	8	3.70	0.96	.538	
Students' academic performance	1	3.46	1.13	.664	.816
	2	3.48	1.08	.695	
	3	3.69	1.02	.573	
	4	3.71	0.87	.579	
	5	3.81	0.90	.595	
	6	3.70	0.88	.673	
	7	3.66	0.95	.703	
	8	3.40	1.15	.682	
	9	3.75	0.85	.688	

(*continued*)

Table 2. (*continued*)

Construct	Item	MV	SD	FL	Cronbach's α
	10	3.92	0.73	.651	
	11	3.79	0.88	.528	
	12	3.41	1.12	.573	
	13	3.66	1.02	.648	
	14	3.67	0.89	.579	
	15	3.64	0.93	.668	

variable (i.e. students' academic performance) was determined using multiple regression analysis. The purpose of the multiple regression analysis was to determine how using e-learning influences students' academic performance.

According to Table 3, the adjusted R2 = 0.518 indicates that the independent factors explain 51.8% of the overall variation in students' academic performance. The model's quality was confirmed since the F value was significant at 0.000. Further research found that synchronous e-learning systems (t = 5.583, p 0.000), asynchronous e-learning systems (t = 2.898, p 0.004), and e-learning tools and software (t = 3.985, p 0.000) were all positively connected to students' academic performance. As a consequence, H1, H2, and H3 were found to be sufficiently supported by the data.

Table 3. Results of multiple regression analysis.

Model		Unstandardized coefficients		Standardized coefficients	T	Sig.
		B	Std. error	Beta		
1	(Constant)	0.097	0.200		0.483	0.629
	Synchronous e-learning systems	0.407	0.073	0.345	5.583	0.000
	Asynchronous e-learning systems	0.200	0.069	0.173	2.898	0.004
	E-learning tools and software	0.318	0.080	0.278	3.985	0.000

Notes: Dependent variable: students' academic performance; adjusted R2 = .518, F = 108.992, and sig. = 0.000

5   Discussion

5.1   Discussion of Findings

The relationship between (synchronous e-learning systems, asynchronous e-learning systems, and e-learning tools and software) and the UCAS students' academic performance is investigated in this study. This was accomplished using the above-mentioned approach and a reliable and validated statistical analysis of the collected data.

The findings show that synchronous e-learning systems have a favorable and significant impact on the students' academic performance. Students may study at their own speed via asynchronous communication. To execute teaching and learning activities, learners do not need to be present at the same time with this communication [26]. In an asynchronous communication environment, learners can take part in a dialogue that allows them to attend the conference or instruction at different times. As a result, students may work whenever and wherever they choose, at their own pace, allowing them more time to think about their own ideas and promoting critical thinking [27].

In addition, the findings identified a relationship between synchronous e-learning systems and the students' academic performance. Live Virtual Classrooms similarly combine video and audio, but they're particularly developed for web-conferencing training and education [29]. As a result, they include a range of tools for enhancing engagement and distance learning, such as collaborative whiteboards, analysis, and resource grouping instruments, and contributor response tools [31].

The findings also indicate that e-learning tools and software have a positive association with the students' academic performance. According to the literature, e-learning has some tools and software that can only be done through it such as computers, LCD, DVD electronic display devices, smart board, and Application software and content viewers. It is difficult to succeed in e-learning without those tools and software [32–35].

5.2   Limitations and Further Research

Contextual and application limitations were among the study's empirical findings. Our findings are based on responses from Gaza-based UCAS students. As a result, it's hard to make broad generalizations across the country's higher education institutions. Even if the findings apply to developing economies with comparable cultural contexts, they may not be suitable for areas with different cultural contexts, such as Palestine. Second, the study was performed in the higher education sector, which limits the results' capacity to be applied to other sectors.

In terms of future research, the researchers recommend that the model could be re-examined in different contexts or cultures. Furthermore, the model may be supplemented by include moderating variables such as students' prior experience to aid in the comprehension of the links and mechanisms underlying the issue at hand. Furthermore, future research should include both professors and students from various universities in the sample.

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An Analysis of Course Evaluation Questionnaire on UCAS Students' Academic Performance by Using Data Clustering

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Abstract. Course evaluation by questionnaire is the most popular assessment tool used by various universities. However, they use traditional statistical methods such as average for analyzing the questionnaires. Thereby, such questionnaires have not been sufficiently utilized. In this paper, we address this issue by employing machine learning techniques for improving effectiveness of course evaluation. Specifically, we use data clustering for dividing students into groups according to their responses. This work will help higher education institutes to improve performance of course evaluation. As a case study, we employed the presented technique to evaluate Entrepreneurship course that is pursued by the University College of Applied Sciences (UCAS). Our findings show that the grading system used with the selected course needs more improvement. Moreover, the outcome of this work supports the UCAS by facilitating process of applying Universal Design for Learning (UDL).

Keywords: Course evaluation · Data clustering · Students' academic performance · Machine learning · Universal Design for Learning

1 Introduction

Nowadays, the focus has been shifted to present advanced learning strategies that improve quality of higher education. These strategies are based on improving course content and teacher characteristics [1]. One of these strategies, which is referred to as Universal Design for Learning (UDL) [2], is based on preparing a suitable environment for diverse learners in a variety of settings.

Recently, the University College of Applied Sciences (UCAS) has adopted UDL strategy for improving its education system. Additionally, it participated in the first Arabic conference of Universal Design for Learning[1]. As a result of this, UCAS is currently working on evaluating some courses by distributing questionnaires. The questionnaires are used to gather feedback from students since analyzing their sentiments [3] is a very important task in evaluating academic performance. Entrepreneurship course is one of the courses that are selected by curriculum developers in UCAS. This course gets a lot

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[1] http://www.qu.edu.qa/ar/conference/udlc.

of attention for introducing new solutions that may decrease effect of unemployment and the severe economic situation in Gaza Strip.

Based on previous discussion, curriculum developers need large amount of details and analyses for making Entrepreneurship course fits UDL strategy. Analysis of specific questionnaires will be beneficial for achieving this task. Whereas, using traditional statistical methods such as average will not provide sufficient analysis. Thereby, more advance tools should be used in this direction.

In this paper, we address this issue by employing machine learning technique for efficiently analyzing questionnaires that support course evaluation. We specifically use data clustering methods [4] for analyzing UCAS students' academic performance. Data clustering is used for dividing students into groups according to their learning feedback. Then, each group (cluster) can be individually analyzed for making the course suitable for diverse students.

The remaining sections of the paper are organized as follows. The literature review is presented in Sect. 2. Section 3 goes into the methodology. The study's findings are presented in Sect. 4, followed by a conclusion in Sect. 5.

2 Literature Review

Academic performance is an important metric used by higher education institutes for measuring student achievement. Many studies have been conducted for introducing tools that support higher education institutes in this direction. For example, Chang et al. [5] presented a study to employ mobile augmented reality for addressing higher education goals. Another example, Chen and Wang [6] supported this direction by employing emotion recognition for measuring learning.

From the other side, some research works have been done for measuring effect of e-learning on the academic performance. The e-learning environment is broadly used nowadays in higher education. It is based on learner-centered approach rather than a teacher-centered approach for designing the course [7, 8]. Thus, the course content should be compatible with e-learning environment [9, 10]. In our study, we address this issue by including relevant questions in the course evaluation questionnaire.

Recently, numerous studies have been conducted for evaluating effect of UDL on learners and academic performance. For example, Craig et al. [11] evaluated effects of applying a professional development program along with employing UDL framework. While, Rossi [12] reported many challenges that have begun to consider during last year with Covid-19 pandemic.

Most of previous studies are based on analyzing course evaluation questionnaires by using traditional statistical tools. Thus, their results were limited with specific perspectives. This issue encouraged researches to present advance techniques for analyzing the questionnaire. One of the proposed approaches is based on employing artificial inelegance (e.g. data mining [13], machine learning [14]) in this research direction.

There are two directions for employing machine learning with analyzing question-naires. The first one is based on employing supervised learning techniques [15] for analyzing survey responses and predicting future perspectives. Our work is inspired by the second direction which is based on employing data clustering for analyzing responses collected from questionnaires. For example, Brown et al. [16] used two-step cluster analysis with statistical tools for dividing learners into three groups (clusters): High Achievers, Standard Achievers, and Low Achievers.

Campagni et al. [17] used K-means algorithm [18] for employing data clustering with evaluating courses. While, Gu and Zheng [19] used Fuzzy K-Modes algorithm for analyzing students' evaluation of teaching. Similarly, Centoni and Maruotti [20] used Multiple Correspondence Analysis (MCA) along with hierarchical clustering for visualizing data collected from course evaluation questionnaires. Whereas, Zhou as well [21] used hierarchical clustering for analyzing course evaluation questionnaires. In the same context, Pasina et al. [22] used algorithm of Average Linkage Clustering for dividing learners into groups based on their learning style.

3   Methodology

In this section, we describe the experiment environment used for conducting our work. We also describe the dataset collected for analyzing performance of Entrepreneurship course delivered by UCAS.

3.1   Dataset

We collected a data for evaluating Entrepreneurship course by disseminating a ques-tionnaire to UCAS students. The survey, which was conducted by using a Google form, is mainly used for collecting study's feedback. The questionnaire was translated into Arabic to fit local language constraints. Two native Arabic speakers reviewed it for improving the accuracy.

The questionnaire contains 37 questions for evaluating academic performance of Entrepreneurship course. Each answer consists of five-point scales: 1- Strongly Disagree, 2- Disagree, 3- Neutral, 4- Agree and 5- Strongly Agree. The questions cover course content and characteristics of 11 teachers along with using e-learning environment. The survey was completed by 117 participants, as shown in Table 1. The demographic variables' results are displayed in the table.

Table 1. Profiles of the respondents (n = 117)

Variables	Grouping	No. of respondents	%
Gender	Male	69	59.0
	Female	48	41.0
Academic level	Diploma	86	73.50
	Bachelor	31	26.50
Learning environment	Electronic	25	21.37
	Physical	92	78.63

3.2 Experiment Setup

Our work is based on applying data clustering for dividing UCAS students according to their responses to the questionnaire. To apply data clustering, we use K-means [18] and Mean Shift [23] algorithms. All experiments were conducted by using Python language though Google Colab environment[2]. Table 2 shows all packages used for conducting experiment work.

Table 2. Packages used for conducting experiment work

Libraries/Packages	Function
Numpy and Pandas	Used for data manipulation
Scikit_learn	Implementing models for machine learning
Matplotlib	Visualizing data and plot figures
Scipy	Plotting the hierarchical clustering as a dendrogram
Seaborn	Plotting graphs

4 Experiment Results

Various experiments have been conducted for analyzing academic performance of Entrepreneurship course. In this section, we reported some results provided by our experiment work. We used cluster analysis for grouping student responses and analyzing their academic performance.

To find the optimum number of clusters, we used an evaluation measure entitled Elbow. We calculated WCSS (Within-Cluster Sum of Square) for each number of clusters (K). Where, K is varying from 1 to 7. WCSS is the sum of squared distance between each point in the dataset and the cluster centroid. Figure 1 shows that the optimal number of clusters is 2 since Elbow point is located at this value. Thereby, there are two groups of students based on their responses.

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[2] https://research.google.com/colaboratory/.
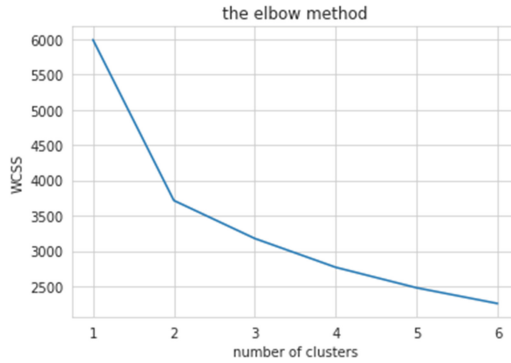
Fig. 1. Results of the elbow measure

To visualize results of cluster analysis, we used principle component analysis (PCA) [24] to convert the data into two dimensions. Then, we applied K-means algorithm to the 2 dimensional data. Figure 2 shows clearly the two clusters (groups) that are resulted from applying data clustering. The reported results show that the first cluster includes 87 samples. While, the second one includes 30 samples.
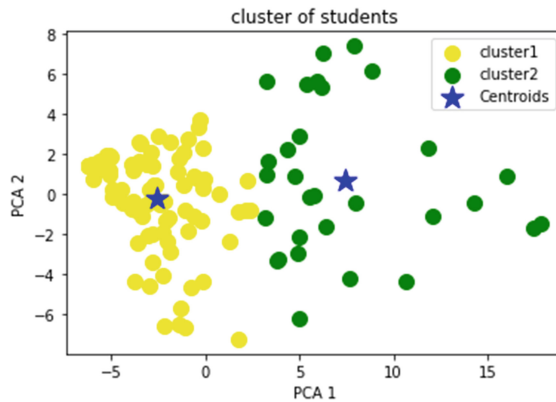
Fig. 2. Results of applying K-means with PCA

After selecting samples from each cluster, we observed that the first cluster is belonged to High Achievers since their responses are above neutral (Agree/Strongly Agree). While, the second cluster represents responses with neutral or lower (Disagree/Strongly Disagree). This means that about 74% of respondents received highly benefits from Entrepreneurship course. Whereas, the rest of students recorded that this course did not reach to their ambition. Thereby, we can say that this course needs more improvement to fit approach of UDL.

We analyzed each group (High/Low Achievers) by showing percentage of variables reported in Table 1. It is worth to mention here that the percentage is calculated by dividing number of samples for each variable type in each cluster over number of all samples in the dataset (117). All results are shown in Fig. 3. We can note clearly that the distribution of diverse students is compatible with the statistics reported in Table 1.
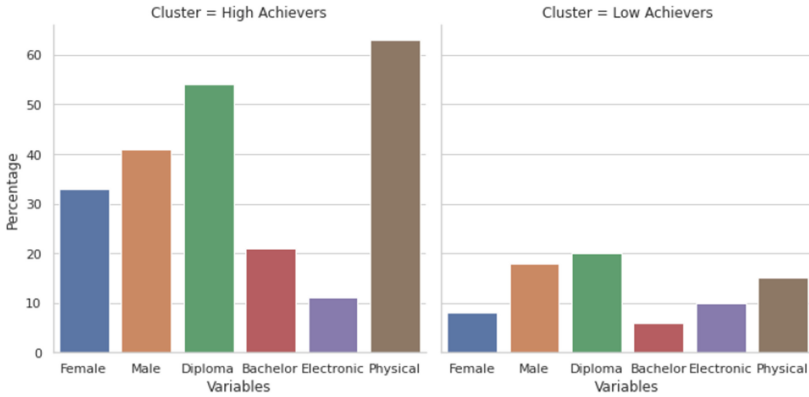
Fig. 3. Cluster analysis with selected variables

Based on our experiment results, we noticed that the results of data analysis are mainly based on academic performance reported by student responses. Whereas, demographic variety of students does not affect on the results and there is no bias in this direction.

To provide more details, we used more data clustering techniques for deeply analyzing academic performance of Entrepreneurship course. We used hierarchal clustering Dendrogram as shown in Fig. 4 to illustrate all linkages located between student responses. This figure shows that there are two main large clusters (Low/High Achievers). Whereas, we can divide each cluster into smaller ones for presenting more analyses. As a result of this, we have been encouraged to apply a second phase of data clustering for deeply analyzing the cluster of Low Achievers. This analysis provides more details for exploring limitations with current version of Entrepreneurship course.

To deeply analyze cluster of Low Achievers, we applied second phase of data clustering by using Mean Shift algorithm. We used this clustering algorithm to avoid tuning optimum number of clusters. As a result of this experiment, the cluster of Low Achievers has been divided into three smaller ones. The distributions of resulted clusters are 1, 6 and 23 samples. Thus, we discarded the first one since it is outlier. Figure 5 and Fig. 6 illustrate data of second and third clusters respectively. We used Violin plots to analyze these clusters by showing data distribution toward five-point scales.

We can note that Fig. 5 does not present significant information since selected responses lead to a negative opinion (Strongly disagree) with all questions. Thus, the rest of our analysis is based on the results that are shown in Fig. 6. The experiment results show that the questions which are received the lowest assessment referred to two points. The first one shows that the students do not prefer the current assessment tools
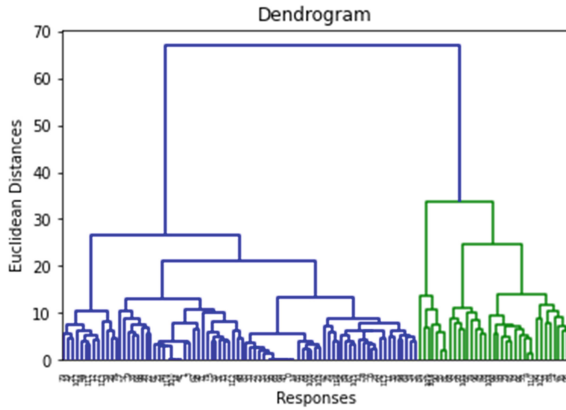
Fig. 4. Hierarchal clustering dendrogram

(such as assignments, quizzes, mid-term exams, and final exams) used for evaluating student learning. They also requested (through the second point) to motivate teachers to submit exam solutions and enable students to discuss their answers before recording final grades. As a result of this, we can note that Entrepreneurship course needs more improvement toward the grading system.
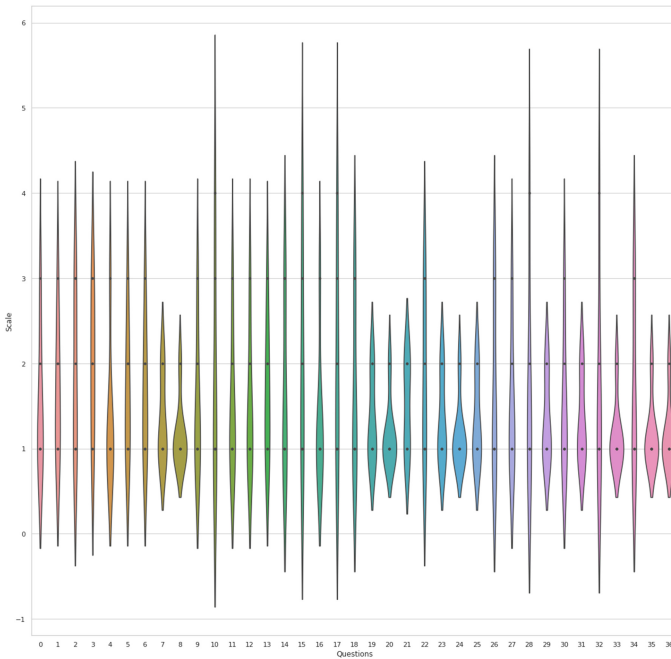
Fig. 5. Analysis 6 samples of low achievers
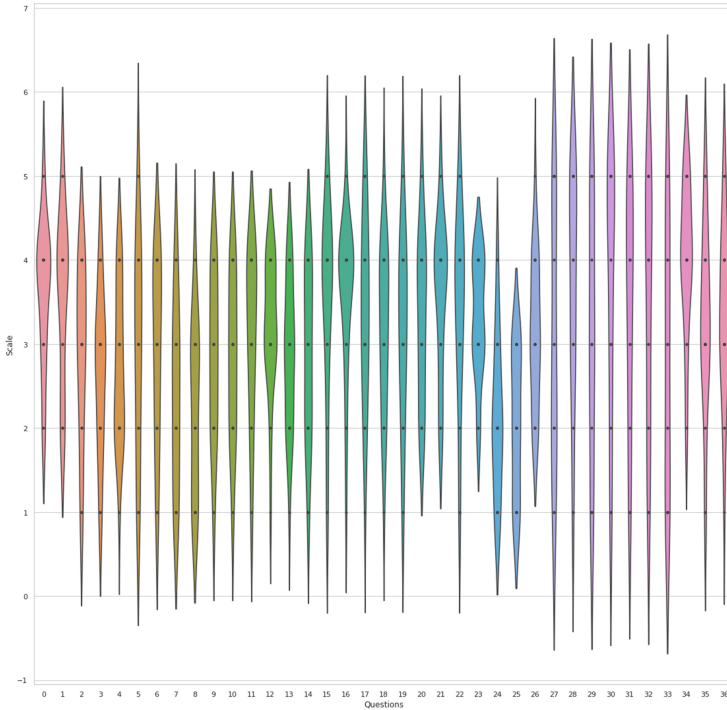
Fig. 6. Analysis 23 samples of low achievers

5   Conclusion and Future Work

Cluster analysis is applied in this work for evaluating academic performance of courses. As a case study, we evaluated performance of Entrepreneurship course that is pursued by UCAS. The evaluation is based on analyzing student opinions through disseminating specific questionnaire. This study opens the door to develop selected courses for fitting UDL strategy. Our findings show that the grading system used with Entrepreneurship course should be revisited. The suggested improvement will make the course suitable to diverse learners.

It is not conclusive that applying the presented technique to other datasets with different distributions would result in the same clustering results. Additionally, our experiments revealed that results are sensitive to initial values of centroids that are used when applying K-means method.

This work can be extended in different directions. It is worth to investigate academic performance of courses delivered to deaf students for including them efficiently in education system. Additionally, it would be interested to evaluate performance of more machine learning techniques with large dataset. Moreover, it is worth to evaluate effect of modifying the design of questionnaire by including more questions with different perspectives.

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Use of Augmented Reality Application in E-learning System During COVID-19 Pandemic

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Abstract. During the COVID-19 pandemic, several educational institutions face critical challenges in conducting online classes. E-learning system through augmented reality application has several dynamic features that would enhance teachers' and students' intention to learn during the COVID-19 pandemic. Nevertheless, the implementation of augmented reality applications in e-learning systems relies on the advancement of technologies, technical training, educating teachers and students on how to use the novel technology in the online class environment. Thus, lack of agreement about the core challenges and factors that shape the successful implementation of augmented reality applications in the e-learning system environment during the COVID-19 pandemic. An empirical gap has been identified in developing the knowledge on the challenges and indicators on implementing augmented reality applications in e-learning systems during the COVID-19 pandemic. However, the current study explores the influence of augmented reality applications in the e-learning system environment during the COVID-19 pandemic. It investigates the key challenges and factors that create barriers to implementing augmented reality applications. A qualitative research method was applied to obtain the aim of this study. We employed the interview method using thematic analysis through NVivo software. We conducted ten interviews with faculty members in the University of Business and Technology, Jeddah, Saudi Arabia. The respondents were selected based on their previous experience in the e-learning system. Overall, the findings of the current paper offer dynamic recommendations for educators, policymakers, developers, and researchers, which will significantly enable them to understand more about the usage of augmented reality applications in e-learning systems with the key indicators during the COVID-19 pandemic.

Keywords: Augmented reality · E-learning · COVID-19 · Educational institutions

1 Introduction

As we can observe in the world today, the spread of COVID-19 is increasing worldwide, restricting social, economic, educational, religious, and cultural events. The educational Institutions are mainly affected by the COVID-19 outbreak (Yezli and Khan, 2020; Bisri, 2020; Saleem et al., 2021a. As a result of the epidemic, all educational institutions such as universities, schools, training centers, and colleges are forced to adapt e-learning (remote learning) approaches to continue educational activities (Saleem et al., 2021a). Thus, different academic institutions in different countries adapted several distance learning approaches to communicate students with their teachers to fulfill their learning activities (Mseleku, 2020). COVID-19, on the other hand, has reignited the urge to investigate online teaching and learning alternatives.

According to a recent report published by UNESCO, the closure of educational institutions has several negative implications for teachers and students, including disrupted learning, which deprives students and youth of possibilities for growth and development (UNESCO, 2020). Therefore, several studies reported that educational institutions are still implementing traditional techniques such as; Skype and uploading lecture videos notes on YouTube (Alzahrani, 2020). Considering these traditional approaches (Jin et al., 2021) found that the traditional e-learning approaches negatively affect students' behavior and attitude to enhance learning approaches. In this regard, (Patra et al., 2021) suggested that educational institutions should understand and implement a modern educational system such as augmented reality.

The concept of augmented reality got more familiar in the last decade (Saleem et al., 2021a). Initially, augmented reality was established as one of the most promising applications for the entertainment industry (Saleem et al., 2021b), and after that, some retailers such are; Ray-Ban, Timberland, IKEA, and Nike developed their personal augmented reality applications to educate maximum consumers about their products (de Amorim et al., 2022; Kazmi et al., 2021). A recent study by Sulisworo et al. (2020) highlighted that e-learning through augmented reality applications significantly enhances students' learning intention. Similarly, (Saleem et al., 2021a) emphasized that the augmented reality application revolution academics by creating new disseminating tools, knowledge, and learning structures. Fitriyah et al. (2022) illustrate that the use of augmented reality in e-learning offers portable, stress-free, promising, and low-cost solutions for application in a range of academic settings that have been overlooked. Therefore, prior studies reported that during the COVID-19 pandemic, several teachers and students faced numerous challenges associated with the implementation of e-learning through traditional techniques (Saleem et al., 2021a; Fitriyah et al., 2022; Ong and Nordin, 2021). Usability issues and a lack of knowledge with the technology involved, and Alzahrani (2020) stated several issues related to the conflict between students and teachers, information overload, and usability.

Therefore, the current study explores teachers' intention towards e-learning through augmented reality applications through a qualitative research approach. Recently, (Saleem et al., 2021a) suggested that the future researcher investigate and know the teachers' intention towards implementing augmented reality in an e-learning system. Further, research questions are discussed below:

1. What main factors support implementing augmented reality applications in e-learning systems during the COVID-19 pandemic?
2. What are the critical challenges and factors that affect the implementation of augmented reality applications in e-learning during the COVID-19 pandemic?

2   Augmented Reality Application in E-Learning

During the COVID-19 pandemic, e-Learning approaches and perspectives underwent a massive transformation. With the ongoing rise of the internet and related technologies, new pedagogical techniques focused on the experience of time and place in knowledge utilization have been introduced. Thus, in the era of e-learning, astute instructors are looking for the right blend of cutting-edge teaching techniques and approaches to enhance the effectiveness of their courses. Augmented reality application was developed and implemented for this reason (Fitriyah et al., 2022). This ground-breaking technology allows e-learning teachers and students to get maximum coursework knowledge that integrates virtual and real-world environments (Sulisworo et al., 2021).

The novel medium of augmented reality integrates various indicators from social computing to tangible and ubiquitous computing. According to Alzahrani (2020), "augmented reality (especially game-based AR) brings to the e-learning segment the unique affordances and benefits of adaptive learning, including enhancement of student motivation, engagement, involvement, and comprehension" (p.3). With dynamic technological innovation, such as augmented reality, know educational institutions now have a flexible and robust e-learning environment that serves teachers and students with improved personalization and dynamicity (Son, 2021). Risdianto et al. (2021) concluded that during the COVID-19 pandemic, augmented reality applications positively contributed to visually communicating students with teachers. (Saleem et al., 2021b) discussed that augmented reality is a comprehensive application that encourages "kinesthetic and 3D perspectives." Such benefits enable students in an e-learning environment that trouble visualizing phenomena to imagine in the actual world, even in the most complex settings. Son (2021) pointed out that augmented reality in e-learning context implies integration of digital information within and real-world environment where the course materials are supplemented or augmented via computer-created sensory may involve "sound, videos, graphics, and visualizations.

3   Research Methodology

The framework of the research methodology of the current study contains three primary main phases. In phase one, e-learning challenges faced by the educational institutions during the COVID-19 pandemic were discussed with the support of recent empirical studies. In phase two, a thematic analysis approach was obtained to recognize and classify the factors and challenges those educational institutions faced during e-learning through augmented reality application during the COVID-19 pandemic. Thematic analysis was used to explore the qualitative data collected and analyzed the interviews using the NVivo software. To conduct the study's theme analysis, five steps were identified according to Alzahrani (2020) "familiarization with data, generating initial codes, searching for

themes, defining and naming themes, and producing the final report" (p.5256). Finally, the third phase discusses and determines the core factors and challenges of e-learning through augmented reality applications.

Thus, considering the novelty of augmented reality applications in e-learning systems, we developed some basic qualifying questions shown in Table 1—the aim of developing such qualifying questions is to confirm how respondents are familiar with augmented reality applications.

Table 1. Qualifying questions

Do you know about augmented reality?		
Yes	9	90
No	1	10
Have you ever used augmented reality apps or devices?		
Yes	3	30
No	7	70
Have you ever used augmented reality apps or devices in higher education institutions?		
No	10	100
Please mention the augmented reality app or device name you have ever used		
No used	8	80
DEVAR AR	1	10
Smart glass for entertainment	1	10

3.1   Context of the Current Study

This study was conducted at the University of Business and Technology (UBT) Jeddah, Saudi Arabia. A total of 10 interviews were conducted with different faculty members. UBT implemented several modern e-learning methods to deliver online courses during the COVID-19 pandemic. The questions for the interview were designed to gather primary data from teachers who were using the e-learning system in UBT.

4   Interview Thematic Analysis

Figure 1. highlights the severe challenges those educational face while implementing augmented reality applications in e-learning systems during the COVID-19 pandemic.

However, challenges to developing and using augmented reality applications in e-learning systems during the COVID-19 pandemic are presented in Table 2.
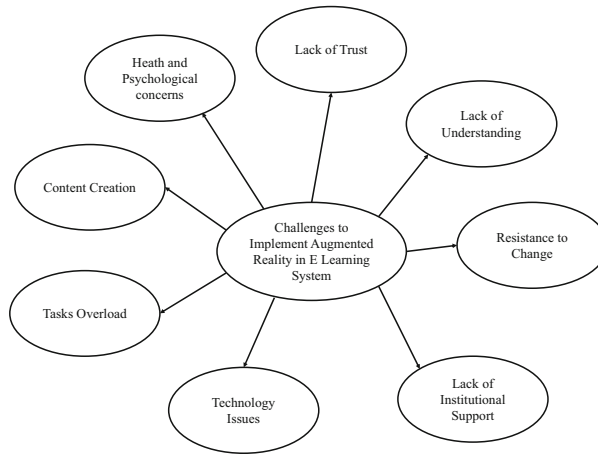
Fig. 1. Critical challenges in implementation of augmented reality application in e-learning

Table 2. Thematic analysis of critical challenges

Theme	Sub-theme	Selected quotes stated from interviewees
Barriers to adopting AR	Lack of understanding	*As for the teachers updating and adjusting all the teaching materials to incorporate the new teaching method, though, it is double. Moreover, the training they must take to apply it effectively in their classes* *Lack of educational experiences… Lack of understanding about how to use it* *Lack of educational /technical experience- lack of conceptual foundation… Lack of experience in practice*
	Resistance to change	*Resistance to change will be one of the challenges that universities will face, either through lecturers or students* *to change their current way of teaching and learning* *Resistance to change is expected but can be managed through early engagement of teachers in the process and discussing the expected benefits. Learning always requires effort and getting out of one comfort zone* *Introducing this kind of technology and implementing it in the right way*
	lack of institutional support	*lack of institutional support*

Table 2. (*continued*)

Theme	Sub-theme	Selected quotes stated from interviewees
	Technology issues	*Develop additional software and hardware 3: implementation issues… Laboratory operation and maintenance requirements* *Augmented reality needs a strong network infrastructure. This might not happen in remote areas* *To afford to have accessibility to the system, developing it, and maintaining it. As technology is changing rapidly and its cost is high*
	lack of trust	*lack of trust in new technology implementation*
	tasks overload	*tasks overload (lack of time)*
	heath and psychological concerns	*There are some health and psychological concerns*
	Content creation	*Create teaching contents*

4.1 Adoption of Augmented Reality Application in E-learning System

As noted by interviewees, they expressed a positive attitude and perception about implementing augmented reality applications in e-learning, mainly during the COVID-19 pandemic. The interviewees outlined as:

"*It would be great to understand how to engage with students in a different manner that will attract and help them learn something new … It is fascinating to learn about and connect with students in a classroom that could help them be more ready for the real market. I would be delighted to use a technology that will increase student engagement and encourage students to learn … I'll seek methods to incorporate it into my instructional practices.*"

"*It's fascinating to study and understand how to communicate with pupils in a classroom setting … In a way that would be intriguing and appealing to them. I'll be there. I'm excited to employ a technology that will increase student engagement and participation … I'm curious how this technology could assist me in my teaching. I'll search for ways to incorporate it into my teaching methods.*"

"*It would be interesting to learn and know how to interact with students in a way that would be interesting for them … I will be happy to use a tool that would make students more engaged and motivated to learn … I will be interested to know how this tool would help me in teaching. I will look for ways to integrate it within my teaching strategies.*"

Focusing on exploring the student's perception, the educators were asked to estimate the students' reaction to augmented reality applications if implemented in e-learning. All the participants agreed that the students would welcome the idea, and the acceptance would be high.

4.2   The Importance of AR for Higher Education

Attempting to understand the importance of augmented reality applications in e-learning and why to use this technology, seven subthemes have emerged: learning enhancement, motivating students, increasing students' commitment and engagement, improving communication, gaining competitive advantage technology adoption, and creativity. The following chart (Fig. 2) illustrates the priority of the subthemes based on the subscription by participants.
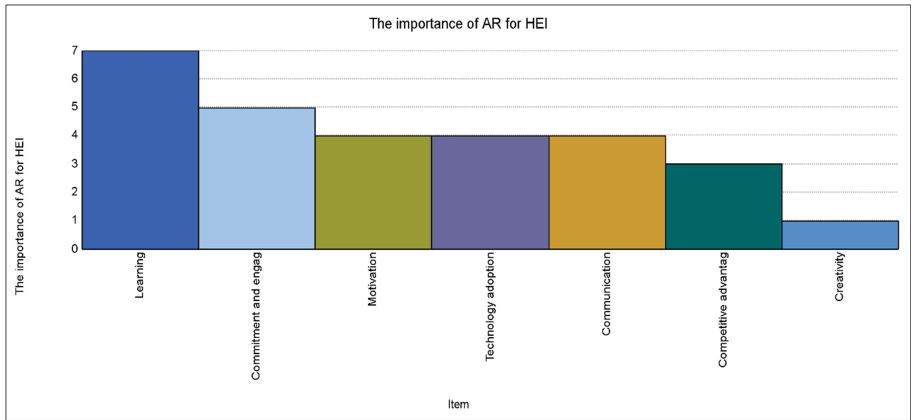
Fig. 2. Subtheme categories

The first reason educators found augmented reality as an essential technology is because it creates new and exciting opportunities for learning. As stated by the interviewees:

> "It will create new and exciting learning opportunities for teachers to help students grasp abstract concepts ... Enhance a student's environment, allowing them to visualize and interact with a concept that is otherwise inaccessible or difficult to comprehend ... Students can build and retain knowledge by applying additional sensory skills ... augmented reality offers its unique advantages for virtual learning in higher education."

It is also believed the adoption of augmented reality will contribute to the engagement and commitment of students. Some interviewees believed that augmented reality should be used in higher education in order to keep up with the updated technology. Therefore, technology adoption is not a choice anymore, and it is mandatory for all the institutions who want to use the latest technologies.

> "Because is it mandatory for courses that require applications such as science and IT. This kind of technique would visualize concepts more."

Competitive advantage is also mentioned as one of the reasons to use augmented reality applications in e-learning during the COVID-19 pandemic.

4.3   The Current Trends of Augmented Reality in E-Learning System

Due to the novelty of augmented reality applications in e-learning, many participants did not know the trends of augmented reality. As per the current evidence, the COVID-19 pandemic accelerated virtual classes worldwide. In this regard, the higher educational institutions in Saudi Arabia are eager to implement recent technologies, but it is still in the early stages. In this regard, an interviewee answered as;

> *"Coronavirus pandemic has accelerated using virtual techniques and developing virtual infrastructure. Although KSA is yet advanced, they are at the early stage of education. They used barcodes for each lesson so students can find links easily for references."*

4.4   Acceptance of Augmented Reality in Higher Education Institutions

Due to the novelty, most educators think augmented reality will be complex for the students and teachers. Another point raised was that the teachers could not deliver maximum information of the course using traditional techniques. Thus, we found that most institutions believed that they welcomed this new technology. It could enhance the students' and teachers' learning intention more effectively. On the other hand, the implementation of augmented reality can significantly enhance the learning intention of the students. On that question, interviewees outlined as,

> *"Yes, because it is always looking into new and innovative ways of learning."*

> *"Yes, since it is constantly seeking new and unique methods to educate students."*

> *"It all depends on how to sell the idea and to promote for the benefits coming out of it. As we all know, it is imperative to think ahead of the future, and as this is part of what is coming ahead, it would be wise of the management in any institute to pitch for this new learning practice."*

4.5   Awareness and Training Program for Augmented Reality in E-Learning System

It is quoted that higher education institutions first need to raise awareness of all stakeholders before implementation of augmented reality application in the e-learning environment, mainly during the COVID-19 pandemic. After enhancing awareness among organizational members and students, the next step would be educating and training in order to make sure they would be able to use the new technology. The training needs to target all the members involved in augmented reality application adoption and usage, i.e., admins, workers, and students, as is stated by different participants.

4.6   Supporting Factors to Implementing Augmented Reality in E-Learning

The supporting factors are investigated from two perspectives: supporting factors for higher education institutions and how teachers/students can implement augmented reality applications in an e-learning system. Four sub-themes have emerged regarding the

factors that would support higher education institutes in adopting this new technology: financial support, managerial support, technical support, and training. Some participants acknowledged that training and raising awareness are supporting factors while higher education institutions develop augmented reality applications.

"A workshop must be conducted to study the needs of teaching and learning techniques ... there should be full awareness between faculty, top management, and student."

It is also to have full support from the top management for augmented reality adoption in higher education institutions. On the other side, teachers and students can support augmented reality applications by creating content, giving feedback, and putting effort into learning it.

"Students and teachers must be involved in the creation of best practices of augmented reality learning."

"Teachers and students may support AR adoption by taking it seriously and learning how to function it."

5   Conclusion

The current study contributes in several terms by identifying the core challenges and factors that influence the implementation of augmented reality applications for e-learning systems during the COVID-19 pandemic. Such process described the critical factors of augmented reality application and e-learning system that limited studies examined previously; however, the findings of the current paper characterize a novel contribution for educational institutions policymakers to review and implement augmented reality applications to ensure the successful usage in an e-learning system.

Overall, the main findings of this paper are based on observations from respondents and empirical evidence, which recognizes the main indicators that support the implementation and usage of augmented reality application in e-learning systems, and acknowledge other researchers' by analyzing and understanding the critical challenges facing the educational institutions are facing in current e-learning system, mainly during COVID-19 pandemic.

Additionally, the critical challenges of implementing augmented reality in e-learning systems are presented in Fig. 1. The policymakers, designers, and developers in educational institutions can benefit from the critical findings of the current study, which potentially provide an accurate picture about the present e-learning system and could be taken as a fundamental guideline to implement augmented reality application in e-learning systems during COVID-19 pandemic. In the current paper, we applied the interview approach using thematic analysis approaches via NVivo software to answer the research questions. The interview was conducted with on-duty faculty members working in UBT, Jeddah, Saudi Arabia. We structured the findings around the two main themes: the implementation of augmented reality application in e-learning systems and the critical challenges that the e-learning system faces during the COVID-19 pandemic.

Based on the above findings, the respondents noted that the main factors affecting the implementation of augmented reality applications in the e-learning system of higher educational institutions should take them into future plans. (a) raising awareness, (b) training, (c) job description, (d) piloting, (e) technology accessibility, (f) support center, (d) evaluation. Furthermore, the results indicated that eight critical challenges impede the implementation of augmented reality application in e-learning systems during the COVID-19 pandemic, namely, (a) lack of trust, (b) heat and phycological concerns, (c) content creation, (d) tasks overload, (e) technology issues, (f) lack of institutional support, (g) resistance to change (h) lack of understanding.

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The Impact of the Application of Electronic Systems on the Satisfaction of University College Students

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Abstract. The impact of electronic systems on the satisfaction of University College of Applied Sciences "UCAS" students is investigated in this study. To collect data from all UCAS students, a questionnaire was constructed utilizing a descriptive-analytical technique. Multiple regression analysis was used to examine the data from 463 respondents. The findings revealed that independent elements (i.e. electronic services, and e-learning systems) influenced the satisfaction of UCAS students. While this study builds on previous research, it also gives information that academics and practitioners can utilize to improve student satisfaction.

Keywords: Electronic services · e-learning systems · UCAS students' satisfaction · Palestine

1 Introduction

The world has a radical changes and transformations that have led to increased growth and significant changes in various areas of life [1]. This has changed the nature of economic, administrative and social activities. Updated services and products have become an opportunity that no institution can ignore, as these technologies have changed the job and attitudes of individuals. It worked on developing new phenomena, such as: e-business and e-commerce, which created new ways of providing services, and which have a close relationship with information and communication technology [2].

The concept of electronic systems is a modern concept compared to other concepts and has great importance, especially in the rapid developments in information and communication technologies, as a concept that includes the use of information and communication technologies through interaction between individuals and organizations and the contribution of individuals in the decision-making process, finding ways to access information, and increasing transparency [3]. The emergence of the concept of electronic systems and their applications has led to an increase in efficiency and effectiveness, a reduction in routine work [4]. It is required of these systems, and perhaps one of the most

prominent administrative aspects affected by the application of electronic management [5].

Most universities have sought to implement electronic systems and provide their services to students electronically, in order to improve the level of services provided. The benefits of systems are not limited the administrative activities, but rather extends to the economic and social aspects of the university, which made its study and study of its effects one of the important topics that must be shed light on [6].

The University College has endeavored steadily towards encouraging and supporting projects for the application of electronic management systems [7]. Obviously, the size of competition in the Gaza Strip compared to its geographical area and population, which forces them to find creative solutions to confront these limitations, and perhaps the most important of these solutions is to continuously improve their performance [8].

The importance of this study comes from its subject. More precisely, the research derives its importance from the fact that it deals with a vital and modern topic of management issues. Many universities pay great attention to the electronic systems. They dedicate great resources to its development in order to contribute to improving the quality of their services, and its various tools. The electronic systems are one of the most important systems which support the development of the performance of universities as an administrative strategy in general, and its application in particular in educational institutions. This research carries its importance from the scientific and practical perspectives.

The remainder of the paper are organized as follows: the research model and research hypotheses are then constructed in Sect. 2 by merging earlier students' satisfaction research. Section 3 introduces the methodology. Section 4 discusses the study's findings, and Sect. 5 wraps things up with a discussion of the findings, limitations, and future research.

2 Theoretical Background

2.1 Students' Satisfaction

Customer satisfaction in general is a complex concept, because satisfaction differs from one person to another, and customer satisfaction refers to the product of comparing the customer's feeling before using the product or service with the actual performance of the product or service. [9]. As customer satisfaction is a function of the perceived and expected service performance, in the event that the service performance fails to meet the customer's expectations, the customer will be satisfied and satisfied, and in this case the customer remains closely associated with this organization. Hope, and leaves dealing with the organization in the future, in the event that the service matches the expectations of the customer, the customer feels satisfied and comfortable, and if the performance of the service exceeds the expectations of the customer in this case, the customer is closely linked to this organization [10].

Given the importance of student satisfaction, universities should be careful and work to achieve this satisfaction, so that the university can acquire and maintain the largest number of students, which leads to its development and growth in various academic fields. Therefore, measuring student satisfaction objectively determines the extent to which students are satisfied with the educational and administrative services provided

by the university, and allows the appropriate decisions to be taken to close the gap between student satisfaction and the quality of education [11].

2.2 The Concept of Electronic Systems

Electronic systems differ in their nature from paper systems in terms of the degree of diversity in the quantity and quality of information available in each system [12]. The revolution of information and communication technology has invaded most areas of life, and the learning process has become much easier through the use of many virtual application programs that can be used over the Internet [13]. Sadeh [14] defines electronic management systems as an integrated electronic system that aims to transform normal administrative work. While Kvon [15] defines it as a system in which each of the functional sub-systems in the database shares, so that any function is performed on the master file.

2.2.1 Electronic Services

It is the effective integrative use of all information technologies and communications to carry out all work related to services with the aim of facilitating and accelerating these services, which are provided by organizations. Within the organizations themselves, or between them and those that link them to individuals, auditors or sectors. Business, and the major electronic services [16].

The electronic services require the synergy of all sections and parts of organizations, as a continuous coordination between the departments to remove obstacles within the organization bodies, as well as the administrative, educational and technical ones that confront the implementation of electronic services, as there are main principles that must be taken into account when planning.

So, electronic services are to transform the normal administrative work from the manual pattern into an integrated digital system that aims to electronically, by relying on powerful information systems that help in introducing services as quickly as possible and at the lowest costs. An integrated electronic service that relies on communication and information technologies to transform manual administrative work into a system. Works carried out by modern digital technologies by eliminating paper transactions and replace the electronic services through the widespread use of technology [17].

This section regarding the electronic services has been divided into two parts:

A. Electronic payment system

Electronic payment methods achieve great and multiple benefits for the economy, as electronic payment methods are considered as the entry to the banking system, which works on the circulation of money, which enhances transparency and increases trust and participation [18].

B.   Admission and registration system

The University's Admission and Registration Department seeks to maintain speed in achievement. Students are the focus of the educational process. Universities provide a system that informs the student of all administrative and academic cadres present to serve him, so that this system works to solve the problems that guide students and remedy them as soon as possible according to the directives of the university president, through the application of the latest technologies in administrative and academic work through harmony with Students' aspirations and desires. [19].

Based on the above, we expect the following hypothesis:

H1: UCAS students' satisfaction is positively influenced by electronic services.

2.2.2   E-learning Systems

In light of the technological developments and the spread of epidemics globally, the new challenge for universities is to develop effective e-learning environments and tools suitable for distance learning. E-learning that takes into account service considerations includes mixed methods on current e-learning environments to determine how to improve their quality.

The aim is to develop e-learning features to become more useful and accessible. A number of problems have emerged as a result of introducing the new e-learning environment within the framework of university education. It was found that the success of the current e-learning systems depends largely on the level of system functionality and the pattern of interaction. System complexity and user difficulties in using current e-learning systems can be resolved or fixed by providing easier interaction between students and teachers.

By examining the design and implementation of high-quality e-learning services in educational environments for the use of information systems, levels of interaction and cooperation between users are evaluated to determine the key attributes of success in an e-learning system [20].

E-learning systems have been divided into two parts as follows:

A.   Moodle System

It is an open-source system (Open-Source Software) to automate educational activities, as it was developed by Martin Dougiamas in 1999 and was previously known as "MOOCH", and was launched in 2002 as a platform, and this platform was known as a global success, as it was translated into thirty languages, many programmers are spread across the world and work in coordination with the Australian company that produced this platform to make full updates and introduce new functions to it [21]. It is considered one of the e-learning platforms and headquarters management systems, [22], and the interface of a Moodle is somewhat similar to Internet portals in the entry mechanism of the platform. It is used by universities, educational institutions and even commercial companies to produce courses for the development of educational activities [23].

B. Classroom

Electronic classrooms create new opportunities for teaching and learning by integrating computer, multimedia, audio-visual and networking technologies [24] and Qasim [25] define Google Classroom as a simple and easy-to-use tool that helps teachers manage training course tasks. The primary purpose of Google Classroom is to simplify the process of sharing files between teachers and students. As Goh & Wen [26] pointed out, it is a computerized internet-based system that integrates G Suite educational applications with all other services and applications, and allows its users to e-learning and manage its operations.

We formulate the following hypothesis based on the above:

H2: UCAS students' satisfaction is positively influenced by the e-learning systems.

Figure 1 illustrates the study's conceptual structure. In this model, the dependent variable (i.e. UCAS students' satisfaction) is linked to the independent variables (i.e. electronic services, and e-learning systems).
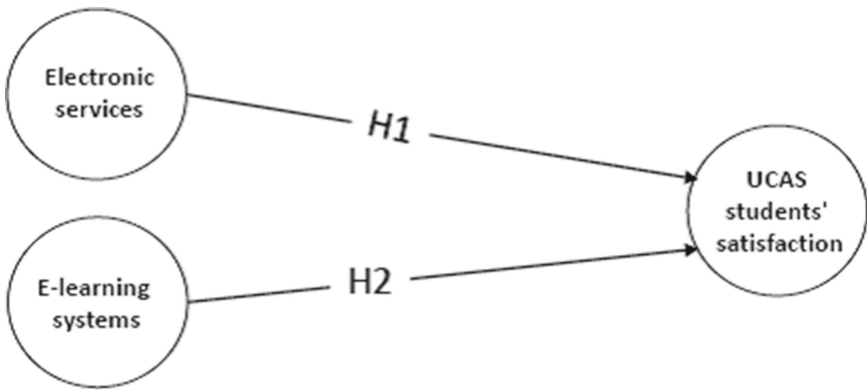
Fig. 1. The research framework

3 Methodology

3.1 Participants

As stated in Table 1, 463 respondents completed the questionnaire and returned it. In the table, the results of the demographic variables were shown.

Table 1. Profile of respondents ($n = 463$)

Variables	Groupings	No. of respondents	%
Gender	Male	252	54.4
	Female	211	45.6
Department	Business and finance management	118	25.5
	Educational sciences	54	11.7
	Education sciences	40	8.6
	Nursing and health sciences	61	13.2
	Engineering professions	51	11.0
	Information technology	42	9.1
	Computer technology and industrial professions	37	8.0
	Information engineering	21	4.5
	Humanities and media studies	39	8.4
Education level	The first	104	22.5
	The second	112	24.2
	The third	122	26.3
	The fourth	125	27.0
Governorate	North Gaza	74	16.0
	Gaza	227	49.0
	Central	70	15.1
	Khan Younes	56	12.1
	Rafah	36	7.8

3.2 Procedures

The descriptive technique was used to explain the existing situation and to respond to crucial questions on the impact of the application of electronic systems on the UCAS students' satisfaction. As a result, the major approach for this study was a survey, with data collected via a Google form. The URL to the Google form was circulated on social media (Facebook, WhatsApp, and emails). To comply with local language norms, the original questionnaire was properly translated into Arabic. It was then reviewed and pilot tested for correctness by two native Arabic speakers. All UCAS students were given the questionnaire. IBM SPSS software version 21 was used for statistical analysis.

3.3 Measures

The survey was conducted using a 5-point Likert scale ($1 =$ strongly disagree, $2 =$ disagree, $3 =$ no opinion/neutral, $4 =$ agree, and $5 =$ strongly agree). There were three parts to the survey. The electronic services are evaluated using nine questions in the first part,

which is based on [16–19]. In the second part, Limongelli et al., [21], Kerimbayev et al., [24], Qasim et al., [21], and Goh and Wen [26] were used to research e-learning systems, and eight items were produced based on their findings. Gong, [9], and Shauchenka and Busłowska [11] provide eight questions to measure UCAS students' satisfaction in the third part.

4   Results

4.1   Factor Analysis

To see if the factor analysis was appropriate for the research, the KMO and Bartlett's tests were utilized. The reliability test results should be more than 0.7. The results of the Bartlett's Sphericity test should also be less than 0.05. The KMO value of 0.742 above the acceptable threshold of 0.000, implying that this analysis is adequate for the research.

One principle factor is rotated using the varimax normalization to build the factor score coefficient matrix created by principal components analysis [27–29], as illustrated in Table 2. The factor has 25 items. According to the research, the lowest loading threshold for factor loadings on various scales is 0.30 [30–35]. Table 2 shows that all of the loadings are more than 0.30, indicating that the scales' construct validity is preserved.

Table 2. Reliability and factor loading of the constructs.

Construct	Item	MV	SD	FL	Cronbach's α
Electronic services	1	3.49	.867	.734	.764
	2	3.61	.982	.746	
	3	3.76	1.124	.761	
	4	3.34	1.135	.722	
	5	3.48	1.022	.734	
	6	3.31	1.016	.745	
	7	3.26	1.054	.763	
	8	3.47	1.065	.782	
	9	3.52	1.087	.724	
E-learning systems	1	3.64	.842	.765	.752
	2	3.56	.763	.717	
	3	3.57	1.120	.737	
	4	3.45	1.061	.709	

Table 2. (*continued*)

Construct	Item	MV	SD	FL	Cronbach's α
	5	3.53	.846	.769	
	6	3.42	1.026	.783	
	7	3.63	.842	.726	
	8	3.59	.954	.755	
UCAS students' satisfaction	1	3.48	.953	.772	.818
	2	3.56	1.016	.783	
	3	3.63	1.125	.762	
	4	3.67	1.027	.739	
	5	3.54	1.056	.752	
	6	3.61	.846	.741	
	7	3.72	.983	.752	
	8	3.55	.985	.738	

4.2 Hypotheses Testing

Multiple regression analysis was used to investigate the relationship between the independent variables (i.e. electronic services, and e-learning systems) and the dependent variable (i.e. UCAS students' satisfaction). The objective of the multiple regression analysis was to see how the independent variables influenced the UCAS students' satisfaction.

Table 3 demonstrates that independent factors account for 58.4% of the variation in UCAS student satisfaction (adjusted R2 = 0. 584). Because the F value was substantial at 0.000, the model's quality was confirmed. Electronic services (t = 5.041, p 0.000) and e-learning systems (t = 6.021, p 0.000) were both positively connected to UCAS students' satisfaction, as shown in Table 3. As a result, the data suggested that H1, and H2, respectively, were strongly supported by the data.

Table 3. Results of multiple regression analysis.

Model		Unstandardized coefficients		Standardized coefficients	T	Sig.
		B	Std. error	Beta		
1	(Constant)	.386	.059		3.047	.002
	Electronic services	.209	.041	.203	5.041	.000
	E-learning systems	.276	.039	.248	6.021	.000

Notes: Dependent variable: UCAS students' satisfaction; adjusted R^2 = .584, F = 130.590, and sig. = 0.000

5   Discussion

5.1   Discussion of Findings

This study investigates the link between the independent factors (i.e. electronic services, and e-learning systems) and the dependent variable (i.e. UCAS students' satisfaction). The electronic services have a favorable impact on the UCAS students' satisfaction. This could be attributed to the following: the electronic student services at the UCAS are efficient; the procedures for registering courses through the Student Services System are easy and clear; the UCAS provides brochures and/or indicative electronic training courses that explain the mechanism of using the student services system; services system allows students to easily access study schedules and exam dates at any time; the electronic payment system is very convenient compared to the traditional payment methods; the electronic payment system helps students to pay tuition fees easily and at any time; the instructions and procedures for paying university fees electronically are clear, organized and announced; the electronic payment system reminds the fees owed by students; the admission and registration system provides a form for registering study subjects with ease; the admission and registration system is suitable and easy to access; and the UCAS provides students with the appropriate technical assistance in the event of a problem in the admission and registration system. This result is in consistency with previous studies [1, 18, 24, 26] which proved that the students use the admission and registration system and the electronic payment system comfortably compared to the traditional payment methods.

The findings also indicated a link between e-learning systems and UCAS students' satisfaction. This could be attributed to the following: there was a gradual transition from traditional education to e-learning by the UCAS; the Moodle system helps students to complete assignments faster than the traditional method; instructors possess sufficient skills to design and produce effective electronic content for the courses; the model system is flexible and students can deal with it easily; tests and evaluation of students via the model is flexible and effective; instructors provide interactive materials throughout the Classroom; students have the competence and skill to deal with Classroom; there is ease in direct communication with instructors or students through the Classroom technology;

using Google Docs to create, edit and share documents and documents with colleagues via Classroom; and students can ask any questions and inquiries through the Classroom and they are answered by the instructors. This result is in line with previous studies [21–26] where they found a considerable level of students' satisfaction towards using the Classroom technology, Google Docs, and Moodle.

Based on the above, it is logical to see a high level of UCAS students' satisfaction. This is due to the following: students are satisfied with the electronic systems available at the UCAS; there is a continuous improvement of electronic services in the UCAS; students are satisfied with the quality of electronic services and the facilities for educational activities; the electronic systems used in the UCAS help students to understand the scientific material in a clear and smooth manner; the UCAS is working on following up on complaints and suggestions submitted by students regarding the applied electronic systems; the UCAS overcomes the obstacles that students face while dealing with electronic services; the systems are secure; and the systems are flexible and quick to deal with and can be worked on from college or home efficiently. This result is in consistency with previous studies [9–11].

5.2 Limitations and Further Research

The study's empirical findings included contextual and applicability limitations. Our findings are based on UCAS student answers. As a result, it's impossible to make broad generalizations regarding Palestinian colleges and universities.

The researchers suggest that the model be re-examined in different universities as part of future research. In addition, the model may include moderating and/or mediating factors to aid in the understanding of the relationships and mechanisms that support the current situation.

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Effects of Online Course Content, and Instructor Characteristics on UCAS Students' Academic Performance During the COVID-19 Pandemic

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Abstract. The COVID-19 pandemic has impacted the entire education system, especially universities, ushering in a new age of education termed as "e-learning.". E-learning is described as learning aided by electronic technology, such as virtual classes and portals that enable learners to utilize lectures outside of the classroom. The purpose of this study was to see how two independent factors, course content and instructor characteristics, influenced the University College of Applied Sciences "UCAS" students' academic performance during the COVID-19 pandemic. To acquire primary data, an empirical study was conducted using 412 questionnaires from UCAS students. According to the study's findings, there is a link between independent variables (course content and instructor characteristics) and the dependent variable (UCAS students' academic performance) for a number of reasons that were investigated throughout the research.

Keywords: Course content · Instructor characteristics · Students' academic performance · Palestine

1 Introduction

Because of digital technologies and mobile applications, the education system has been transformed from a traditional structure to a modern way of teaching. Teachers' self-efficacy in terms of technology, subject knowledge, and content advances have an impact on students' attitudes toward them [1]. The face of education has changed as a result of technological advancements in the creation of learning possibilities. By enhancing content delivering and making the classroom more entertaining, technology in education benefits not just students but also lecturers [2]. Furthermore, developments in educational technology have extended outside of the classroom, providing that learning is accessible at any time. Educational technology aids electronic learning and mobile learning. Furthermore, educational technology enables professors to connect with students at any time and across geographical borders. Online education is used by many educational organizations, such as universities, colleges, and training centers, to create a digital classroom. However, if they work full-time, digital learning encourages students to explore courses in their free time [3].

COVID-19 has influenced education throughout the world. For the time being, universities and colleges have stayed closed [4]. As a result, e-learning is becoming more prevalent across the educational system [5]. Although e - learning is beneficial for learning and teaching during a pandemic, an effective e-learning system requires a well-planned and organized e - learning system. Several universities have already made significant headway toward e-learning during the outbreak. Administrators, instructors, and students faced a challenge throughout this worldwide epidemic, figuring out how to meet the institutions' and individuals' overall goals. ZOOM, Google Classroom, Moodle, and Blackboard are among of the most popular online classroom software, and they all play an important part in the shift from face-to-face classrooms to e-learning systems [6].

The higher education industry must enhance its technical infrastructure on a frequent basis. to stay up with changing patterns. Two independent factors are examined in this study: course material [7] and teacher characteristics [7]. As a result, the study's purpose is to emphasize the need of high-quality e-learning in higher education, particularly during the COVID-19 pandemic. Furthermore, the purpose of this study was to highlight the importance of technology in meeting the needs of high-quality education and student expectations. The study's importance stemmed from its goal of determining the quality of e-learning in higher education institutions from the perspective of students.

The remainder of the research are organized as follows. The conceptual framework as well as the hypotheses are described in Sect. 2. Section 3 goes into the methodology. The study's findings are presented in Sect. 4, followed by a discussion in Sect. 5.

2 Theoretical Framework

2.1 Academic Performance

Academic performance, learning performance, academic accomplishment, and learning success are all terms used by Chang et al. [8] to describe university students' learning outcomes in a range of domains, or the long-term consequences of learning processes. Academic performance is described as students gaining knowledge and skills at universities through specialized curriculum and resources, which are commonly shown through test performance or academic exams [9]. It's also characterized as knowledge, understanding, and abilities acquired via special education's professional curriculum and instructional design experience, i.e. people acquiring specialized information and practicing skills [10]. As a result, learning achievement may be classified as either specialized or generic [11]. Chang et al. [9] considered students' learning records, such as assignments, quizzes, mid-term examinations, and final exams, as general academic performance. Specified academic performance was defined by Chen and Wang [12] as subject-specific learning performance or the overall mean performance of topics. Academic success was without a doubt student achievement on the increase of life adaptability and physical and mental progress via learning, according to the essential purpose of education [12].

2.2   Course Content

In higher education, pedagogy and course design are based on the student rather than the instructor [13]. Effective course content in e-learning would stress dynamic learning and student involvement [14]. The quality of e-learning depends heavily on the development of appropriate course material [15]. E-learning is made up of learning and support materials that students may access over the internet. The content of an online course might be framed with assignments, quizzes, and projects. This function helps students improve their analytical, critical thinking, and problem-solving skills [16]. As a result, it is proposed that:

H1: There is a favorable relationship between course content and UCAS students' academic performance.

2.3   Instructor Characteristics

In order to assist students to learn more successfully during the COVID-19 curfew time, lecturers should take the appropriate efforts to increase the quality of e-learning [17]. Lecturers' capacity to produce, shape, and combine numerous ideas and practices into the creation of online course content helps to e-efficacy learning's in higher education [18]. According to Ellis and Goodyear [19], the instructor should provide timely feedback to the pupils. As a result of this strategy, the quality of e-learning in higher education increases. Because the teacher is such an important part of education, evaluating instructor performance and satisfaction through peer evaluation and completing a satisfaction survey is essential to enhancing the quality of e-learning [20]. Taha et al. [21] presented guidelines for building a working team that comprises professionals from the curriculum committee, instructional material committee, faculty development committee, and continuous quality improvement committee to plan, execute, monitor, and analyze the transition to e-learning. Furthermore, assessment evaluation procedures play an important part in the teaching-learning process when it comes to ICT [22]. As a result, it is proposed that:

H2: There is a favorable relationship between instructor characteristics and UCAS students' academic performance.

The conceptual model of this study is displayed in Fig. 1. The dependent variable (UCAS students' academic performance) is connected to the independent factors in this model (course content, and instructor characteristics).
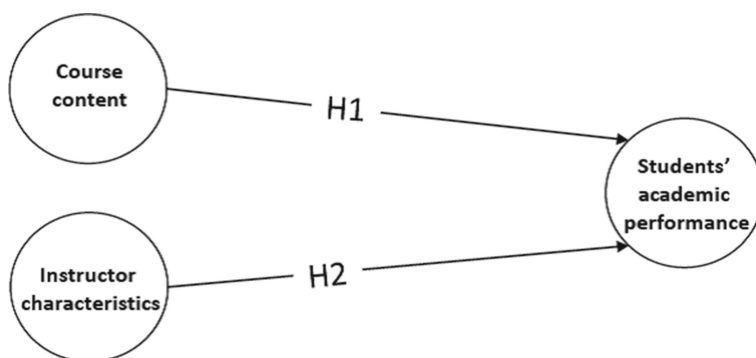
Fig. 1. The research framework

3 Methodology

3.1 Participants

The survey was completed and submitted by 412 participants, as shown in Table 1. The demographic variables' results were displayed in the table.

Table 1. Profiles of the respondents ($n = 412$)

Variables	Groupings	No. of respondents	%
Gender	Male	178	43.2
	Female	234	56.8
Academic level	First	71	17.3
	Second	110	26.7
	Third	116	28.1
	Fourth	115	27.9

3.2 Procedures

The descriptive method was used to identify the existing situation and respond to the primary challenges associated with effects of online course content, and instructor characteristics on UCAS students' academic performance during the COVID-19 pandemic. As a result, the survey, which was conducted using a Google form, became the study's primary data collection approach. The Google form's URL was widely disseminated over social media (Facebook, WhatsApp, and emails). The original questionnaire was properly translated into Arabic to comply with local language constraints. Two native Arabic speakers were then asked to review and pilot test it for accuracy. IBM SPSS software version 22 was used for statistical analysis.

In this research, a simple random sample was employed. The equation was used to get the sample size for the questionnaire:

$$N = \frac{NP}{1 + (NP \times e^2)}$$

N: Sample size, NP: population size, e: the errors term $= 0.05$.

At a confidence level of 95%, a sample of 384 was generated, giving the researchers a margin error of only 5%. This study's sample size is more than the required quantity, increasing the degree of assurance.

3.3 Measures

The survey used a 5-point Likert scale, with 1 representing strong disagreement, 2 representing disagreement, 3 representing no opinion/neutral, 4 representing agreement, and 5 representing strong agreement. Three sections made up the survey. In the first section, eleven questions based on Debattista, [13], Ashwin and McVitty, [14], and Little and Knihova, [15] are used to evaluate the course content. In the second section, sixteen items based on Abbasi et al., [17], and Kebritchi et al., [18] were used to evaluate instructor characteristics. The third section uses six items from Chang et al., [8], and Liu [11] to describe students' academic performance.

4 Results

4.1 Factor Analysis

The KMO and Bartlett's tests were used to see if the factor analysis was appropriate for the study. A score of at least 0.7 on the reliability test is required. In most circumstances, the Bartlett's Sphericity test values should be less than 0.05. The KMO value of 0.746 is greater than the acceptable threshold of 0.000, implying that this analysis is sufficient for the study.

To build the factor score coefficient matrix generated by principal components analysis [23–26], one principle factor is rotated using the varimax normalization. A total of 33 items make up the factor. The lowest factor loading threshold for several scales, according to the study, is 0.30 [27–30]. All of the loadings in Table 2 are more than 0.30, revealing that the scales' construct validity has been preserved.

4.2 Hypotheses Testing

The relation between the independent factors (course content, and instructor characteristics) and the dependent variable (UCAS students' academic performance) was investigated using multiple regression analysis. The researchers aimed to see how independent factors affected UCAS students' academic performance by using a multiple regression.

Table 3 shows that independent factors account for 48.6% of the variation in UCAS students' academic performance ($R^2 = 0.486$). The model's quality was proven because the F value was substantial at 0.000. As indicated in Table 3, course content (t $= 2.618$, p 0.009), and instructor characteristics (t $= 7.292$, p 0.000) are all positively associated with UCAS students' academic performance. As a result, the data revealed that the analysis had a significant amount of support for H1, and H2 correspondingly.

Table 2. Reliability and factor loading of the constructs.

Construct	Item	MV	SD	FL	Cronbach's α
Course content	1	4.13	.953	.701	.826
	2	3.87	1.116	.650	
	3	3.87	1.141	.726	
	4	3.83	1.129	.691	
	5	3.99	1.182	.671	
	6	3.93	1.130	.730	
	7	3.83	1.284	.792	
	8	3.62	1.225	.849	
	9	3.86	1.209	.879	
	10	3.89	1.171	.878	
	11	4.11	1.137	.770	
Instructor characteristics	1	4.19	1.047	.788	0.834
	2	4.08	1.065	.716	
	3	4.10	1.131	.792	
	4	4.24	.978	.608	
	5	4.27	1.037	.824	
	6	4.14	1.052	.591	
	7	4.16	1.049	.808	
	8	4.14	1.138	.791	
	9	4.11	1.117	.835	
	10	4.20	.974	.779	
	11	4.15	1.019	.696	
	12	4.11	1.097	.763	
	13	3.73	1.288	.724	
	14	3.45	1.281	.560	
	15	4.00	1.141	.669	
	16	3.59	1.381	.802	
UCAS students' academic performance	1	3.85	1.281	.736	.818
	2	3.65	1.342	.825	
	3	3.74	1.297	.778	
	4	3.75	1.247	.820	
	5	3.82	1.319	.827	
	6	3.63	1.275	.751	

Table 3. Results of multiple regression analysis.

Model		Unstandardized coefficients		Standardized coefficients	T	Sig.
		B	Std. error	Beta		
1	(Constant)	1.322	.231		5.730	.000
	Course content	.285	.109	.244	2.618	.009
	Instructor characteristics	.873	.120	.680	7.292	.000

Notes: Dependent variable: UCAS students' academic performance; adjusted R2 = .478, F = 97.440, and sig. = 0.000

5   Discussion

5.1   Discussion of Findings

independent variables (course content, and instructor characteristics) and the de-pendent variable (UCAS students' academic performance).

The relationship between the independent variables (course content, and instructor characteristics) and the dependent variable (UCAS students' academic performance) is investigated in this study. Course content influences the UCAS students' academic performance. This could be due to the following: At the beginning of the semester, the content of the course, the teaching technique, and the evaluation system were all supplied. The course's goals and objectives were outlined clearly at the start of the period; The course was worth the credit it was given; The syllabus was announced on the first day of class, and the course was taught accordingly. Class talks, homework assignments, applications, and studies all went well. The textbook and other course materials were adequate and current; Fieldwork, applications, laboratory, debate, and other studies were all allowed in the course. Quizzes, assignments, projects, and tests all played a role in assisting and learning. The students appreciated the session and were keen to engage actively during the lectures. At the end of the period or year, students' initial expectations for the course were met. And the course was relevant and valuable to my professional development. This result is consistent with prior research [13–16].

Besides, the findings indicated that there is a relationship between instructor characteristics and UCAS students' academic performance. This could be as a result of the following: The instructor's expertise was up to date and relevant. The lecturer arrived at class ready to teach; The lecturer followed the lesson plan that had been announced; The lecturer was enthusiastic about the course and easy to understand. For courses, the lecturer was on time; The instructor's delivery/speech is smooth and easy to follow. The instructor made good use of class time. The instructor gave a thorough explanation of the course and was ready to assist pupils; The lecturer had a pleasant attitude toward the students. The lecturer was open to students' opinions regarding the course and listened to them respectfully. The instructor promoted class involvement, provided pertinent homework assignments/projects, and assisted/guided students. Inside and outside of class, the lecturer answered to inquiries concerning the course. The course objectives were

properly measured through the instructor's evaluation method (midterm and final questions, projects, assignments, etc.). Exam solutions were provided by the lecturer, who also discussed them with the pupils. And the instructor was fair and objective in his treatment of all students. This finding is consistent with past researches [17–21].

5.2 Limitations and Further Research

Contextual and application limitations were among the study's empirical findings. Our findings are based on replies from UCAS students in the Gaza Strip. As a result, it's impossible to make broad generalizations about university students in Palestine. Despite the fact that the findings apply to rising economies with similar cultural roots, such as Palestine, they may not be suitable for regions with different cultural situations.

Future studies could re-examine the model in different contexts or cultures. Additionally, to increase knowledge of the links and mechanisms underlying the problem at hand, moderating and/or mediating elements could be added to the model. Future studies should also include both students and instructors.

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Obstacles and Solutions of Implementing E-Learning in Palestine: Teachers' Perspective During the COVID19 Pandemic

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Abstract. The study investigated the obstacles facing the application of e-learning and ways to overcome them in Palestine from the teachers' point of view during the COVID 19 pandemic. The study adopted the descriptive-analytical approach, and the researchers prepared a questionnaire which was conducted on a sample of (182) teachers from the North Gaza Governorate in Palestine. The results showed that teachers' consensus on the obstacles of implementing e-learning is 76.55%, while they agreed on the ways of overcoming those obstacles with a percentage of 96.44%. The results also presented that there are no statistically significant differences between the average of the teachers' attitudes in the North Governorate concerning the obstacles of implementing e-learning due to the gender variable, however, there are statistically significant differences in the averages of teachers' attitudes due to the variable years of work in favor of teachers with less than 5 years of experience besides those with only11–15 years of experience. Finally, the findings showed statistically significant differences between the average of North Governorate teachers' attitudes in terms of the e-learning obstacles due to the educational qualification variable. In light of these results, the study recommends the need to develop a plan for education during emergencies, and to equip classrooms with computers connected to the Internet. The study also invites the educational authorities to train school administrations, students and teachers to deal with the e-learning tools.

Keywords: Obstacles · Solutions · Application of e-learning · COVID19 Pandemic

1 Introduction

The abrupt outbreak of COVID-19 has massively disrupted most of the industries around the world including the educational system; it has forced the lockdown of educational institutions so as to reduce the transmission of the disease. The school's lockdown has affected more than 1.9 billion students from 190 countries across the globe (UNESCO, 2020). During this quarantine time e-learning has served the solution for the ongoing learning process (Mahyoob, 2020 and Khan et al., 2021). Before this ongoing pandemic

that pushed the world to resort to digital solutions, e-learning had been used as a nonformal mode of education. However, the Covid-19 has compelled the formal institutions to adopt e-learning, as maintaining social distance is of utmost value (Siddiquei & Kathpal, 2021). The teachers were aware of using technology for enhanced learning but they were not prepared for such a radical shift (Siddiquei & Kathpal, 2021). Teachers and students are in the process of adapting to this new teaching and learning mode as this e-learning wave is newly merged and entirely imposed, (Khan et al., 2021; Hodges et al., 2020 in Khlaif and Salha, 2020).

Similarly, with the arrival of COVID-19 to Palestine, the Ministry of Education launched its National COVID-19 Response Plan, where e-learning was recognized as an alternative solution to cope with the challenges posed by Covid-19 and ensure the continuation of learning to their students. Such type of emergencies is unplanned and necessitate the competency of using technology to teach remotely (Khlaif & Salha, 2020, Affouneh et al., 2020, Joshi et al., 2018 and Rush et al., 2016). The new scenario was attempted to be managed by educational leaders, but teachers and students have confronted major obstacles as a result of the overnight shift from a brick-and-mortar to a click-and-learn style of education and learning (Affouneh et al., 2020, Farrah & Al-Bakry, 2020, Adnan & Anwar, 2020; Bdair, 2021). Against this background, investigating the obstacles posed by the pandemic will help adapt more effectively to the new circumstances and ensure that education continues. It will also assist in minimizing disruptions in the event of an emergency. Therefore, the present study aims at revealing the obstacles to applying e-learning in Palestine from the teachers' perspective during the COVID-19 pandemic, reaching out some possible suggestions to overcome the obstacles to applying e-learning in Palestine from the teachers' perspective during the COVID-19 pandemic, and identifying the existence of statistically significant differences at the level ($a \leq 0.05$) between the averages of Palestinian teachers' responses about the obstacles to applying e-learning during the Covid19 pandemic due to the study variables: (gender, years of experience, educational qualification).

In Sect. 2, the researchers reviewed the literature related mainly to the obstacles and challenges to applying e-learning during the covid-19 pandemic, while in Sect. 3, the researchers presented a description of the research methodology including the overall process of the tool validity and reliability, data collection and analysis. Section 4 relates to the interpretation of the results obtained, and in Sect. 5, the researchers concluded with a comprehensive discussion and offered some recommendations.

2 Literature Review

2.1 E-Learning: Definitions, Features and Challenges

Based on reviewing the related literature, there is a variety of definitions for the term e-learning. Commonly, e-learning is defined as flexible, interactive, self-paced, and elaborate pedagogical methods through using a variety of online platforms (Zarei & Mohammadi, 2021). According to Karim and Hashim (2004), e-learning is a type of synchronous or asynchronous learning assisted by electronic hardware and software. In another definition given by Horton (2006), "e-learning is the use of information and computer technologies to create learning experiences" (P.39). Boyinbode & Akintola

(2009) pointed out that e-learning has made a significant breakthrough in education with its features such as providing independence from time and place, being economical, allowing each student to learn at their own pace, providing the chance to repeat and revisit as much as required, and reducing education costs. In addition to the advantages described above, Bilen, (2021) indicates that e-learning has many other advantages over traditional learning, such as being a modern model, student-centered, and encouraging lifelong learning. It is considered as a tool that provides supporting equitable opportunities in education for marginalized and disadvantaged students, as well as those who are physically, socially, or economically unable to attend classes (Appana, 2008, Bilen, 2021, and Watson et al., 2004).

In the COVID-19 pandemic, e-learning was a system that has assisted teachers in carrying out the learning process but, as Fauzi et al., (2020) argued, this doest not necessarily indicate its effectiveness because of various obstacles experienced when doing online learning during emergencies (COVID- 19 pandemic). While it has many benefits, the e-learning approach faces many challenges (Shraim & Khlaif, 2010). Boothe (2021) stated that numerous challenges exist with younger students learning online. Parents, who are tired of working with their children at home or who are under financial stress, have become less responsive to requests from the school and the technology needs of young children. Young students struggle to participate online, despite the fact that socializing and engagement are important aspects of early childhood education. Too much screen time can cause impatience and dissatisfaction. Poverty-stricken pupils are at a higher risk of receiving their distance education as they frequently lack access to the digital resources that other students take for granted. Many teachers are inadequately prepared to adapt their classrooms to meet the demands of the digital age.

According to Boothe (2021), the unanticipated impact of the COVID-19 pandemic on classrooms has resulted in a quick transformation into connected, adaptable, and collaborative virtual learning environments. However, when defining the goals and outcomes of online education, it must be taken into account a wide range of student backgrounds and readiness. Fauzi et al., (2020) asserted that teachers, students, and parents must be well-prepared for the success of online education and must be able to collaborate effectively. Boulton (2008) emphasized that learners need to acquire a variety of new skills, including managing their own learning pace, becoming autonomous learners, and taking greater responsibility for their own learning.

Furthermore, some research showed that one of the challenges of online learning is that students feel cut off from their classmates and instructor (Henrie et al., 2015, Gray & DiLoreto, 2016, Chang, 2013 and Hazzan, 2002). Because of the distance between teachers and students, it is difficult for them to communicate effectively, making it difficult for them to engage in online learning on a constant and efficient basis. As a result, students are found unable to participate in online learning (Peng, 2017). Abdulmonem et al., (2021) stated that the passive learning attitude, perhaps when a student passively receives information, is not sufficient in e-learning. His point of view matches with Moore (1989) who argued that some e-learning designs are entirely content-based with an absence of interaction.

At public schools in Palestine generally, many motivated and talented teachers are using a variety of e-practices, from PowerPoint presentations in class to animated video

presentations, but these practices promote e-teaching rather than e-learning. Most Palestinian educators are unfamiliar with learner-centered education. (Shraim & Khlaif, 2010). It is worth noting that the e-learning paradigm is not being employed by students and teachers as a replacement for traditional face-to-face teaching methods, but rather as a supplement to help students learn more effectively (Shraim & Khlaif, 2010).

2.2   Previous Studies

In response to the dramatic sudden shift to online education in the time of the COVID-19 pandemic, researchers from different countries, including Palestine, conducted studies from various perspectives towards e-learning.

Khlaif & Salha (2020) explored the challenges in emergency remote teaching in developing countries including Palestine, Libya, and Afghanistan, as reported by students, parents, and teachers. The findings revealed numerous challenges, including the learning environment, quality of digital content, digital inequity, and the violation/invasion of digital privacy. The findings confirmed that these challenges were the primary determinants affecting students' motivation and engagement in online classes.

Further investigation was carried out by Kamal & Illiyan (2021) so as to examine teachers' perspectives of online teaching and the obstacles they face in online teaching during the Covid-19 pandemic. The study's findings show that, on average, have a positive perception about virtual teaching amid COVID-19 for bridging the learning gap and shaping pupils' future throughout the crisis. Nonetheless, they faced a number of challenges in online teaching, including technological issues as well as difficulty with online exams and assessments. The researchers indicated that the outcomes of their study would convince educational institutions and policymakers to improve the quality of online teaching by incorporating the most up-to-date instructional methodologies and providing teachers with ongoing training.

Wang et al. (2021) aimed to find out the underlying challenges and possible solutions for improving online education in China. The biggest challenge of learning online was the lagging platform. Nonetheless, as time passed, the most major challenge became maintaining learning motivation. The majority of students believed it was necessary to re-teach face-to-face after online education, whereas the majority of teachers disagreed. The study recommended that the construction of infrastructure should come first for schools that intended to promote online education. If the infrastructure was in place, learning motivation would be the main obstacle for online education.

Aiming at determining the perspectives of elementary school teachers about online learning in a COVID-19 pandemic in Indonesia, Fauzi et al., (2020) revealed that teachers are aware of the context of e-learning. The study results indicated that the implementation of e-learning in elementary schools during emergencies (COVID19 pandemic) has become ineffective due to various obstacles. So, these obstacles were anticipated and solutions found. In the same way, Al-Domour (2020) aimed to reveal the physical and administrative obstacles facing female teachers in their use of e-learning in the elementary and secondary schools in Al-Ruk District. The findings showed that the total degree of obstacles obtained a total average of (96.3). At the level of the two domains, the mean of the administrative obstacle's domain was (82.4), followed by the physical obstacles' domain with a mean of (79.3); both of which are high.

A study by (Mahyoob, 2020) was undertaken to find out what challenges and obstacles faced by English language learners (EFL) in Science and Arts College, Alula, Taibah University, Saudi Arabia, during transitioning to online learning due to the COVID-19 pandemic. According to the findings, the key issues that influenced online EFL learning during COVID-19 are related to technological, academic, and communication challenges. The results also demonstrate that the majority of EFL students were dissatisfied with their online learning since they were not making the expected progress in language learning and could not properly communicate with teachers during virtual classes of English language skills. The findings reveal that barriers have been identified on a personal, professional, institutional, and contextual level. professional barriers received much higher rankings than other types of barriers and the university academic discipline has the most perceived impediments according to the teachers' perception. Another study conducted by El Firdoussi et al., (2020) to discover the constraints of e-learning platforms at Moroccan universities during the coronavirus lockdown, surveyed 3037 students and 231 professors enrolled in different stages of higher education programs. Based on the findings, both professors and students agreed that online learning is not more interesting than traditional learning due to a lack of digital skills and lack of training on the use of tools applied in distance education.

Bhuana, (2021) intended to find out the teachers' barriers and supports in conducting online learning. Twenty-one teachers from suburban areas in Cimahi and Bandung in Indonesia were selected as the participants. The findings highlighted three concerns that are posing difficulties for teachers: technology, course content, and students. The first issue dealt with internet access, which is a common concern in online learning. The second issue was that the teachers were having difficulty making changes to the design and delivery of the materials. Finally, there was the question of student participation as well as technology accessibility. In terms of support, the teachers found cooperation from the government, the school, and the parents in conducting online learning. Unfortunately, during online learning, not every student has access to a smartphone to assist their learning.

El-Harsh, et al. (2010) aimed to reveal the obstacles to using the e-learning system from the secondary school teachers' point of view in Koura District. The results showed that the obstacles related to teachers were ranked first, followed by the obstacles related to administration, then the obstacles related to infrastructure and basic equipment, and finally the obstacles related to students. The results also indicated that there were statistically significant differences due to the gender variable in the field of infrastructure-related obstacles. In a study conducted by Shraim & Khlaif (2010), they investigated the opportunities and challenges of e-learning for secondary education in Palestine. Findings revealed that there are numerous obstacles to e-learning implementation in Palestine, including the digital divide and network technical constraints, a lack of e-learning competence, a lack of autonomy, poor time management, workload pressure, and language.

Based on reviewing the literature, it is noted that the related previous studies underlined the role of e-learning in education and revealed its challenges, particularly during the Covid-19 pandemic. Significantly, the previous research helped the researchers of the current study in choosing the research method, developing the research tool i.e. the

questionnaire's domains and items. Apparently, there is a paucity of research on challenges and obstacles of online teaching associated with the COVID-19 pandemic at the school level in Palestine; hence the rationale for the present study. Besides, the shifting process differed from one country to another; no one was fully prepared, but the difficulty of shifting varied according to each country's technical capabilities (Farrah & Al-Bakry, 2020). Nevertheless, today's students will be entering this new digitalized workplace, and schools have an essential role to play in preparing them (Howell, 2005).

Thus, it is necessary to cater to such a growing demand and investigate the obstacles hindering e-learning in the Palestinian schools from the teachers' perspective during the COVID-19 pandemic. The research questions are: 1) What are the obstacles to applying e-learning in Palestine from the teachers' perspective during the COVID-19 pandemic? and 2) What are the suggestions to overcome the obstacles to e-learning in Palestine from the teachers' perspective during the COVID-19 pandemic?

3   The Study Methodology

To achieve the objectives of the study, the researchers followed the descriptive-analytical approach.

3.1   The Study Sample

The Piloting study sample consisted of (30) teachers who were randomly selected for the purpose of verifying the validity of the study tool to be used among the original sample, while the actual study sample consisted of (182) teachers who were chosen randomly from the North Gaza Governorate in Palestine.

3.2   The Study Tool

The questionnaire consisted of two main domains, for the purpose of collecting the data. The first domain is Obstacles to applying e-learning, as it consists of 13 items. The second domain is the suggestions of teachers of the North Gaza Governorate in Palestine to overcome the obstacles to applying e-learning during the Covid19 pandemic, as it consists of 13 items too.

The Validity and Reliability of the Study Tool. The validity of the current study's scale was confirmed by the external and internal validity; thus, the questionnaire is valid to what was set to be measured. The reliability of the study tool was verified by two methods, namely, the Split Half Method and Cronbach's alpha reliability coefficient. Thus, the researchers have confirmed the reliability of the scale, as it indicates that the stability is high and statistically significant.

4 The Results of the Study

4.1 Descriptive Statistics

Analysis of the Characteristics of the Study Sample. In order to identify the characteristics and features of the study sample, the researchers analyzed the data of the first part of the questionnaire, which constitutes the general and personal data of the participants, and the results were as illustrated in the Table 1. Below:

Table 1. Distribution of the sample according to gender and years of experience

Variables	Gender	Frequency	Percentage
Gender	Male	53	29.1%
	female	129	70.9%
Years of experience	5 years or less	13	7.1%
	6–10 years	40	22.0%
	11–15 years	74	40.7%
	More than 15 years	55	30.2%
Total		182	100%

Table 1 shows that 29.1% of the total sample were males, while 70.9% of the total sample were females. Additionally, it shows that 7.1% of the total sample had 5 years of experience or less, while 22% had 6 to 10 years of experience. The same table shows that 40.7% of the total sample had between 11 and 15 years of experience, while 30.2% had 16 or more years of experience.

Table 2. Distribution of the sample according to their educational qualification

Qualification	Frequencies	Percentage
Diploma	3	1.6%
Bachelor	150	82.4%
Master's	27	14.8%
PhD	2	1.1%
Total	182	100%

According to Table 2, it is clear that 1.6% of the total sample had a diploma, while 82.4% had a bachelor's degree. It is also shown that 14.8% had a master's degree, while 1.1% of the sample had a Ph.D.

The first question of the study i.e. "**What are the obstacles to the application of e-learning in Palestine from the point of view of teachers during the COVID-19**

pandemic?" was answered by running the One-Sample T-Test to find out whether the average answers on the domain of e-learning obstacles during the Covid-19 pandemic differs from neutrality or not? The results show that the value of the T-test is statistically significant, where the mean value was 3.95 which is higher than the degree of neutrality. This indicates that all the items of the obstacle domain were considered real obstacles from the respondents' point of view to apply the e-learning during the Covid-19 pandemic.

The second question i.e. "**What are the suggestions to overcome the obstacles to e-learning in Palestine from the point of view of teachers during the COVID-19 pandemic?**" was answered by running the One-Sample T-Test to find out that the mean value is 4.47. This indicates that the average of the answers on the suggestion domain was higher than 3. Accordingly, all the items of the suggestion domain were considered effective suggestions from the respondents' point of view in facing the obstacles to applying e-learning during the Covid-19 pandemic.

4.2 Hypotheses Testing

The first hypothesis i.e. "**there are statistically significant differences at the level of significance (a ≤ 0.05) between the averages of Palestinian teachers' attitudes about e-learning obstacles during the COVID-19 pandemic due to the gender variable**" was tested to show that there are no statistically significant differences at the level of (a ≤ 0.05) between the averages of Palestinian teachers' attitudes about e-learning obstacles during the Covid-19 pandemic due to the gender variable. The researchers explain the previous results that there is no difference in the opinions of the study sample due to the gender variable about the obstacles they faced in applying e-learning.

The second hypothesis i.e. "**there are statistically significant differences at the level (a ≤ 0.05) between the averages of Palestinian teachers' attitudes about e-learning obstacles during the COVID-19 pandemic due to the variable of years of experience**" was tested to show that there are statistically significant differences at the level (a ≤ 0.05) between the averages of Palestinian teachers' attitudes about e-learning obstacles during Covid-19 pandemic due to the years of experience variable. To clarify the differences among the respondents due to the years of experience variable, Scheffe Test was used. Based on Scheffe's dimensional comparison test, the differences in the teachers' opinions according to years of experience were between those with less than 5 years of experience and those with 11–15 years of experience only, where the difference was statistically significant, as the value of the sig level was 0.017 which is less than 0.05.

The third hypothesis i.e. "**There are statistically significant differences at the level (a ≤ 0.05) between the averages of Palestinian teachers' attitudes about e-learning obstacles during the COVID-19 pandemic due to the educational qualification variable**" was tested to find out that the educational qualification variable takes the values of (diploma, bachelor's, master's, and doctorate). In this regard, there are statistically significant differences between the average of teachers' attitudes in the North Governorate due to the educational qualification variable, since the researchers conducted a one-way analysis of variance (one-way ANOVA). The results show that there are no statistically significant differences between the averages of the Palestinian teachers' attitudes about

e-learning obstacles during the Covid-19 pandemic due to the educational qualification variable, where the significance level was 0.728. That is, there are no real differences in the opinions of the respondents about the obstacles to e-learning due to the educational qualification variable.

5 Conclusion and Recommendations

The results showed that:

1. Respondents have an "agree" opinion on the domain of obstacles to the application of e-learning, as this was supported by 76.55% (the percentage of those who agree and strongly agree).
2. All items of the obstacles' domain were considered real obstacles from the respondents' point of view in facing the application of e-learning during the Covid19 pandemic.
3. All items of the suggestions' domain were considered effective suggestions from the respondents' point of view in facing the obstacles to applying e-learning during the Covid19 pandemic.
4. There are no statistically significant differences between the average scores of the teachers' attitudes regarding the obstacles of e-learning during the Covid19 pandemic due to the gender variable.
5. There are statistically significant differences between the average scores of the teachers' attitudes about the obstacles of e-learning during the Covid19 pandemic due to the years of experience variable, where the differences in opinions were between teachers whose experience is less than 5 years and teachers whose experience ranges between 11–15 years only.
6. There are no statistically significant differences between the average scores of teachers' attitudes regarding the obstacles of e-learning during the Covid19 pandemic due to the educational qualification variable.

The researchers **recommend** developing a strategic plan for education during emergencies including constructing the necessary infrastructure and equipping classrooms with computers connected to the Internet with up-to-date software. The study also invites the educational authorities to provide training to school administrations, teachers, and students on how to deal with the e-learning tools. Most significantly, teachers must be sufficiently qualified to provide proper digital distance learning, to innovate in their pedagogical approaches, and to use a variety of interactive software to increase student engagement in online learning. Also, parents should help teachers control, support, and monitor their children as much as possible.

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Coaching as a Tool for Adaptive Personnel Management of Modern Companies

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Abstract. The purpose of the investigation is to reveal the content and characteristics of coaching as a modern tool for professional staff training, given the need to use adaptive management in the practice of domestic companies.

The research is based on the dialectical method of cognition of processes and phenomena, in particular, the monographic method (in identifying current trends and research of scientific achievements of domestic and foreign science and practice of personnel training), comparative (in assessing costs and forms of personnel training), abstract-logical method (theoretical and methodological generalizations, substantiation of conclusions), which were used in determining the essential features and role of coaching in the HR-management system.

The essence and characteristic features of coaching are studied; the size and forms of training of the personnel of the companies of the USA and Ukraine are analyzed. It was found that in foreign practice coaching is used as an effective tool for adaptive management of company personnel and a tool for gaining strategic competitive advantages of companies in the market. The types of coaching, the set of socio-economic and psychological factors on which modern coaching technologies are based are studied, the set of professional competencies of coaches is determined.

The author's vision of the key principles of coaching training is substantiated, a number of rules of effective coaching are recommended in order to increase the effectiveness of adaptive personnel management of the company. The author's model of implementation of coaching on conditions of adaptive management of the company is suggested.

The obtained results of the research allow improving the personnel policy of domestic companies on the basis of using the forms, principles and advantages of coaching as a promising method of staff training.

Keywords: Staff · Teaching · Coaching · Adaptive management · HR · Efficiency

Formulation of the Problem. The complexity and dynamism of the factors of the modern business environment, which are complemented by the emergence of a significant number of new challenges and threats to the activities of economic entities require the implementation in the practice of management adaptive tools for business management. Adaptive management should include not only effective methods, levers and functions, the entire management system should be ready for changes in external and internal factors, including corporate organizational culture, management processes, resources, staff. Adaptive management system should be focused on rapid response to changes in the business environment of the company, organizational structure of management and production should be flexible, resources - sufficient, however, the effectiveness of adaptive change is determined primarily by the degree of readiness of staff to such changes. competence, skill and responsibility of employees, a high level of organization and ability to make non-standard solutions. The formation of such quality indicators of the organization's staff is possible only if the ongoing process of training and use in the practice of training employees innovative methods, forms and tools of training practice, one of which is coaching.

Analysis of the newest investigations and publications. Scientific and practical issues of training and education of the organization's staff for a long time comes to the attention of well-known domestic and foreign scientists, theoretical, methodological and practical basis of scientific works which form a powerful framework for solving this complex and urgent problem. Among the scientists who have made a powerful contribution to the development of this problem, the following should be noted: Babich D.V., Zamlynskyi V.A., Kirichenko T.V., Nezhinskaya O.O., Landsberg M., Malik M.Y., Marmaza O.I., Pukhovskaya L.P., Svidersky V.P., Shpikulyak O.G., Atkinson M., Besser-Sigmund K., Downey M., Leonard T.J., Hawkins P., Reynolds M., Simen P., J. K. Start, Whitmore J., Whitworth L. and others.

At the same time, the actualization of staff as a key factor in the success of the company, the need to address sustainable socio-economic development, modern realities of high dynamics of working conditions objectively form the need for continuous improvement of professionalism, competence, activity of staff. today it is impossible without constant learning and the use of innovative training technologies.

One of the most significant developments in the field of organization in recent times is the increasing importance given to human resources. More and more attention is being paid to motivational aspects of human personality, particularly the need for self-esteem, group belonging, and self-actualization. This new awakening of humanism and humanization all over the world has in fact enlarged the scope of applying principles of human resource management in organizations. The development of people, their competencies, and the process development of the total organization are the main concerns of human resource management (Pareek and Rao, 1992).

Elite sport coaches are often compared to corporate executives in how they lead a team (Ball, 1975; Chelladurai and Saleh, 1980; Charbonneau, Rogers and Kelloway, 2001). In his Taxonomy of Leadership Behavior, Yukl (2012) defined four categories of behaviors employed by successful business leaders: (a) Task-Oriented (planning, scheduling), (b) Relations-Oriented (attitude, relationship building), (c) External Leadership (communication, networking) and (d) Change-Oriented.

We can integrate coaching into strategy, processes, with an emphasis on improving employee performance. Coaching then becomes a natural part of how you do what you do, part of how you do your business. Being coached (or mentored) is not a punishment, but a daily routine. The result of such a process is that employees are willing to share their experience and knowledge, take responsibility for themselves and their teams, give and receive feedback, and ultimately grow personally (Seemann P., Stofkova Z., Binasova V., 2019).

The elements needed to create a coaching culture are consistent use of different types of coaching across the organization, a formalized process, provision of appropriate training and resources, the involvement of top management, transparency of benefits, and the alignment with organizational values such as ownership, empowerment, collaboration, and respect (Milner J., Milner T., McCarthy G., 2020).

The purpose of the article is to reveal the content and characteristics of coaching as a modern tool for professional staff training, given the need to use adaptive management in the practice of domestic companies.

Main Results of the Investigation. In modern practice of domestic and global companies, staff is one of the most effective tools of target-management (target management), which allows to achieve strategic goals of the company. Employers today have a clear idea of the value of staff, their place and role in ensuring the success of the firm. Managers and business owners understand that the company's success in the market is a permanent and dynamic state, which can be consolidated and extended only through constant innovative changes (technological, product, marketing, social, etc.), the source of which is staff.

Under modern conditions, staff is an asset that shapes the value and cost of a company and business. Owners and HR managers understand that increasing the value and cost of business is possible primarily by increasing the value of staff, which can only be achieved through training and the formation of favorable socio-economic and psychological factors of staff participation in the company. Global trends are the realization of a set of professional and personal goals, focusing on creating a professional team environment, capacity building and involvement of each employee. Effective personnel management requires an understanding of each employee's overall vision of the company, its brand and reputation component, diagnostics and increasing the productivity of each team member on the principle of «support – return».

In most companies, HR managers work as team leaders, but with varying efficiency, as evidenced by staff turnover, achievement of strategic plans, communication problems in creating a friendly and stimulating environment, team conflicts. It is necessary to ensure growth, invent and implement elements of best practices in personnel management, tools for conflict management, stimulating creative and innovative activities, creating coaching teams. Unfortunately, the strategies of many companies do not have a system for introducing coaching technology. Problematic aspects include: lack of understanding of the specifics of coaching, unwillingness to invest in the development of its staff, low level of communicative interaction with subordinates. There is a need to develop an implementation roadmap, a number of motivating factors, the employee's career benefits, and financial and economic performance.

Today, personnel training programs are one of the main items of expenditure on personnel of companies that focus on tactical and strategic business success. In the United States, the company's cost of training per employee is about 1111 dollars. USD per year and varies greatly depending on the scale and financial potential of companies: small companies with a staff of 100 to 1,000 employees spend 1678 dollars per employee per year, medium-sized companies with a staff of 1,000 to 10,000 - 581 dollars. USD per employee, large companies with a staff of 10,000 or more - $ 924. per employee. Despite the external challenges and threats posed by the business environment over the past two years, including the Covid-19 pandemic, the average cost of training the staff of major US companies in 2019–2020. increased from 17.7 million dollars. up to $ 22 million (by 24.3%). at the same time, there is a reduction in training costs in medium-sized companies (up to 808 thousand dollars per year) and an increase in small enterprises (up to 506 thousand dollars per year). Such data indicate that the management of companies perceives the process of staff training as one of the most effective tools for competitiveness in the market. In particular, this has become typical for small companies, which are experiencing increasing competition and facing significant difficulties in the business environment, forced to seek more active forms and methods of maintaining market share, the implementation of which is determined by training, creativity and initiative (Table. 1).

Table 1. Business costs for training one employee per year

Groups of companies by size	2018	2019	2020	2020р. до 2018р., %
USA, dollars (without salary)				
Small companies (number of staff to 999 people)	1096	1511	1678	153,1
Medium companies (1000–9999 people)	858	829	581	67,7
Big companies (10000 and more people)	1046	1544	924	88,3
Ukraine, dollars USA				
Staff costs that are not part of the payroll (including staff training), UAH	198	193	187	94,4
Staff costs that are not part of the payroll (including staff training), dollars USA	7,5	7,4	6,9	92,0

Source: compiled by authors by (Business Coaching: Official website of the international coaching federation; Nezhinskaya OO, Timenko VM, 2017).

A survey of American companies showed a significant interest of management in training and improving the professional competencies of staff. The most popular means and forms of training in modern Western practice are: evaluation and analysis of testing the results of staff training; products and systems for audio and web conferencing;

improving business skills through coaching and consulting; certification of staff skills; updating and updating the design of course programs; mobile and online learning tools; talent management tools and systems.

On average, each employee of American companies spent 55 h a year on training (at the expense of employers). At the same time, in the structure of training services provided to company staff, about 25% were services from managers, executives and leading specialists of companies that provided professional advice, assistance and guidance to staff in the range of their professional tasks. That is, about a quarter of the educational content provided by American companies were forms and tools of coaching. The least common forms of staff training today in world practice are still methods based on artificial intelligence, virtual and augmented reality (Augmented reality) (Fig. 1).
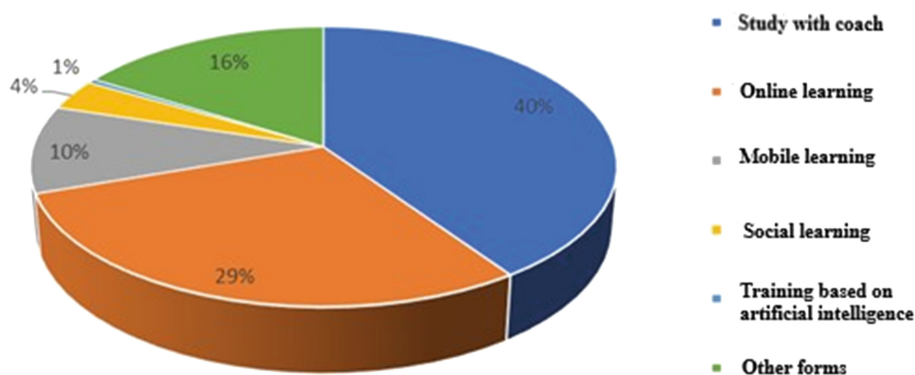
Fig. 1. The main forms of training of personnel of American companies, 2020. Source: Compiled by the authors based on Business Coaching: Official website of the international coaching federation; Labor of Ukraine: Article Coll. State Statistics Service of Ukraine, Kyiv (2020)

In Ukraine, the amount of training costs for company staff varies significantly depending on the size of the company and the level of corporate culture. Large business companies carry out activities aimed at training and education of staff in the framework of approved programs and projects of sustainable development. Metinvest International Company in 2020 invested about $ 3 million. USD (in 2019 - USD 66) for the development of the company's staff.

Yes, the main training programs are: training based on the electronic system «Eduson», face-to-face and distance training, the creation of technical academies of personnel training, training facilities, career programs, such as «Young Leaders».

Numerous personnel training programs have been implemented in the practice of HR management of other major Ukrainian companies: competency training models and leadership programs, implementation of the OKR program (goals and key results of personnel management), training involving experts from global business schools, corporate agro-industrial skills development programs. MHP holding (120 h of training per employee of the company in 2020), training programs for the company's staff and students of bulk institutions, appointment and payment of nominal scholarships, current programs and funds to support leadership, business training and coaching at PJSC

«Zaporizhstal», own system of distance education «Click», professional training, career programs and professional development at PJSC Ukrnafta and other examples.

Recently, companies have been using various forms of webinars, professional development, online platforms for professional training and professional development of employees. However, such measures are typical of large and medium-sized companies. In most small businesses in Ukraine, staff costs are limited to the cost of wages and mandatory social protection, and measures to improve the professional competencies of staff are implemented for the financial resources of employees (Babych D.V., Svidersky V.P., Cherverikova A.V., 2018). At the same time, the traditional concept of resources in Ukrainian management practice is replaced by the concept of «human capital» and staff values not as a resource but as an asset that has a socio-economic nature and forms the greatest benefit to business, society, national economy and country. as a whole (Malik MI, Shpikulyak OG, 2005).

Technologies of combining forms, methods and tools of training in a single system of personnel training (LMS) are quite popular in foreign practice. The system of personnel training methods includes a set of various methods and tools focused on its active development and active implementation in the process of finding, developing, implementing and implementing management decisions. Coaching is one of the most popular and effective tools for personal learning. Based on psychological management technologies, coaching is now used as a tool of socio-psychological and professional mentoring by the employer (leading specialist), which helps employees achieve their goals by revealing the creative and professional potential of the employee, his ability and desire to generate and implement new ideas. to the mission and development strategy of the organization.

The International Coaching Federation (ICF) provides the following definition: «… a partnership process that stimulates the thinking and creativity of the client, in which he with the help of a coach maximizes his personal and professional potential.» It is an ongoing collaboration that helps clients achieve real results in their personal and professional lives. From the standpoint of partnership technology in vocational training, coaching is also considered by J. K. Start, 2004.

Erickson International Coaching University complements this definition with the following content: «It is a professional partnership with a client focused on creative support and implementation of special, significant changes in his life in personal and (or) professional environment.»

Today's realities of rapid change in the business environment expand the possibilities of coaching as a tool of adaptive management, opening up alternative opportunities and the ability to create innovative products (processes, assets, solutions) that are necessary to ensure leadership and competitiveness in the market. Coaching contributes to the formation of new skills of adaptive personnel management, which form the prerequisites for effective teamwork, partnership, improving the organizational efficiency of the company and personal satisfaction with their own work. According to international experts, companies that have used coaching in their practice have been better prepared for rapid adaptation to market conditions, strategic organizational change and management of personnel priorities (Downey M., 2017). The International Coaching Federation and the World Institute of Human Capital have identified the following characteristics of modern coaching culture: its value to staff and managers; using the help of professional coaches;

availability of a separate article in the company's budget to finance coaching activities; equal access of the company's staff to coaching; unity of the coaching system (internal, external, personnel management system of the organization).

Among the types of coaching are: life-coaching (work of a coach with a person to solve his personal problems and tasks), executive-coaching (managerial coaching) (Nezhinskaya OO, Timenko VM, 2017), internal corporate coaching (use expert from the staff of the company), career coaching (career coaching), coaching in the workplace (Britton J., 2015); freestyle coaching (Whitworth L., Kimsey-House H., Sandahl. P., 2007), procedural coaching (behavioral coaching, development coaching, transformational coaching), individual and team coaching, family coaching, existential coaching (Hawkins P. Smith N., 2015).

In modern theory and practice, the content of coaching is revealed from different positions: 1) as a means of qualitative change and human growth (Atkinson M., Chois Rae T., 2009); 2) as psychological support and counseling of the employee by helping to ask questions that focus on professional success, career realization and self-development (Whitmore J., Lisa A., 2012); 3) as a means of finding new constructive ideas, increasing the level of employee responsibility (Zamlynskyi V., Livinskyi A., Zakharkiv I., Korneeva T., 2021); 4) as a tool for managing personnel policy, company staff and business efficiency; 5) as a means of unlocking the potential and self-realization of the employee (staff in general) (Kirichenko T., 2019); 6) as a modern style and HR-technology of company management (Pukhovskaya LP, Vornachev AO, Leu SO, 2015).

The basis of the coaching model (GROW) is the interaction of four interrelated blocks: G - goal setting (what is expected from learning?); R - reality (actual state); O - options (alternative solutions); W - future steps and actions (Whitmore and A. Lisa, 2009).

Modern coaching technologies are based on a combination of socio-economic and psychological methods of influencing staff, according to which the basic principles for assisting in solving professional problems of employees are the starting points: 1) the worker has all the necessary opportunities and resources to successfully achieve goals: 2) the employee has incentives for self-development and self-realization, clearly identify and outline which helps the coach; 3) the company's staff strives for a comfortable relationship in the workplace, the psychological microclimate is based on the desire for positive change and trends needed by each employee; 4) conditions and factors of labor activity are constantly changing, becoming more complicated, the pace and intensity of labor activity is significantly increasing, which requires a clear understanding of actions and effective use of all available human resources.

Coaching provides an opportunity to understand and assess their own limitations and capabilities, allows them to analyze behavior and attitudes, which helps to see ways to improve the effectiveness of their activities (Seemann R., Stofkova Z., Binasova V., 2019). Systematization of theories, methods and forms of modern practice of coaching practice allowed to identify its key characteristics (Fig. 2).
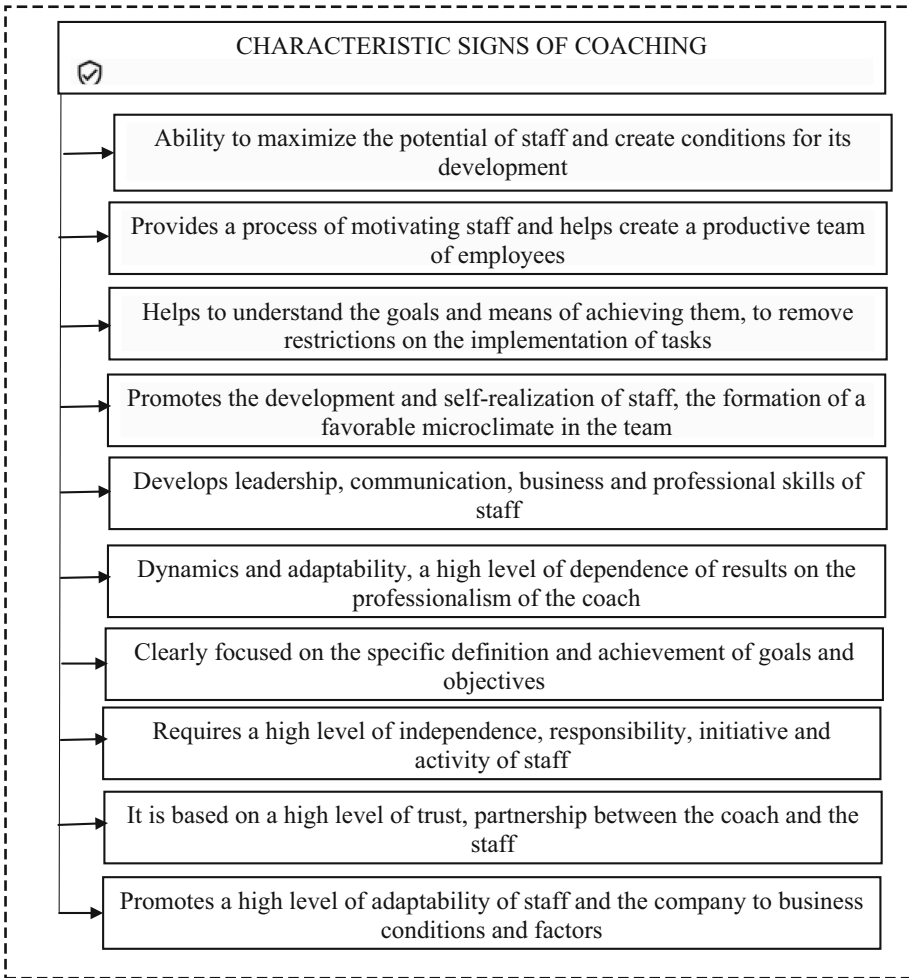
Fig. 2. Characteristic features of coaching. Source: Compiled by the authors based on their own research

Based on the essential features and content of coaching, its main purpose is to determine the orientation of employees to effectively perform tasks and improve productivity, promote the company's development goals in terms of individual and collective labor potential of the company's staff. The driving force of coaching is an organic and harmonious combination of company goals and personal goals of self-development of the individual employee and the staff as a whole, which creates the conditions for ensuring an effective mechanism of social and labor relations, improving management and business.

Today, staff is not a resource for business, staff is the main driving force of competitiveness, a source of formation and implementation of successful ideas and projects, a link between economic, social and innovative factors of production, the main element of

strategic development. At the same time, in modern practice there are trends in which the main business processes that take place as a result of economic activity of the company in modern conditions, form resources for self-development and self-realization of the employee, which gives a powerful synergy effect and useful for all participants social and labor relations and business.

Today, coaching is an active type of business activity, which is aimed at creating a range of specific services for employers, companies, management, employees needed to solve individual, collective and corporate problems. Over the last 15 years in Ukraine, coaching has emerged as a professional activity with a wide range of services. The coach does not provide ready-made answers to the client's questions. Its main task is to consider alternative solutions to the existing problem, create conditions to remove existing limitations in its subjective perception, stimulate the process of finding opportunities for prospects for client development, help in understanding the desired results and effective motives to achieve them. The implementation of this task is based on the use of coaching a number of principles, the key of which P. Hawkins and N. Smith (2015) include: the principle of responsibility; unity and interconnectedness (impact of the result on other areas of the client's activity); pendulum principle (assessment of the dependence of constraints and results); principle of equality (system of partnerships in the coaching space); equality (problems and limitations, awareness, aspirations and motives correspond to the level of personality development).

Coaching, as a modern type of adaptive personnel management, focused on revealing the creative and professional potential of the employee, is based on the following key principles:

– goal orientation and focus on future success (analytical assessment of past experience, mistakes in the simultaneous direction of successful solution of future goals and objectives);
– systematic approach (taking into account the individual characteristics of the worker, the holistic picture of his personality, all life positions that affect the professional development and realization of goals);
– resourcefulness (the coach is based on the statement that the client has all the necessary resources and opportunities to achieve goals);
– complex socio-psychological and professional orientation (changes in views, ideas, perceptions cause changes in real actions, decisions, behavior of the client);
– development of personal, business and professional consciousness, which forms the basis for further self-development and self-realization as a person as a whole and within professional activities;
– use of the principle of partnership, which encourages clients to maximize the disclosure of personal and professional potential.

From the standpoint of coaching as an innovative tool for staff training, adaptive management is a synergistic combination of styles, technologies, levers, forms and methods of management that focus on maximizing changes in the business environment of the company. At the same time, adaptive management is a structured process of managerial decision-making, which by its essential features is broader, large-scale and complex than simply monitoring changes and trends that occur in the external and internal business

environment. Modern adaptive management is aimed at finding and justifying alternative ways to achieve goals and choosing the optimal management solution. Based on the architecture of the process approach, adaptive management includes several main stages: 1) problem identification; 2) a comprehensive in-depth assessment of the current state of the object of management; 3) constant monitoring of changes, search for a range of alternatives to its future state (forecasting); 4) justification of relevant management decisions; 5) the process of adjusting management decisions; 6) control over their implementation and results. Adaptive management provides a basis for making effective management decisions in conditions of uncertainty and increased risk of business.

Adaptive management requires a much higher level of professionalism of managers, skills and abilities that include the ability to predict, systems thinking, strategic vision, unconventional views and thinking, rapid response to change, dynamism and openness to the constant search for alternative solutions.

One of the ways to prepare managers to perform these tasks is coaching, which in its content is a process that focuses the abilities and skills of man to adapt to a particular situation and achieve goals.

From the standpoint of the use of adaptive management technologies, the model of implementation of coaching in the practice of managing the company's activities will be as follows (Fig. 3).

Taking into account the dynamics of business environment factors, the process of adaptive management is constant, systematic and cyclical. However, coaching as a tool for adaptive management is not necessarily permanent. If the process of improving the professional competencies of staff today must be continuous, the results of coaching, which form the plane of psychological perception of opportunities and prospects for personal development, is long-term.

Acquired skills of creativity, initiative, creativity and activity in professional activities, accompanied by professional and personal success of the employee, trigger the motivating mechanism of his self-development, improvement, appreciation of self-realization and self-perception, which has a strategic vector.

Under such conditions, coaching becomes a strategic tool of adaptive management, which by combining personal goals of the employee and corporate goals, taking into account changes in the business environment, timely response to its challenges and threats, contributes to effective development in the long run.

In order for the coaching process in the company to ensure the achievement of the goals of staff development and contribute to the ongoing process of improving the effectiveness of adaptive management in general, it must follow a number of rules:

1) the presence of constant and effective feedback from employees (evaluation of staff results and achievements, constructive advice and incentives, gratitude and recognition of success, contribution to the common cause, the needs and importance of the work of employees);
2) formation and development of corporate culture, feedback culture on 3600;
3) definition and constant system of evaluation of experience, professionalism, business skills of employees, identification of trends of their change and improvement, expansion of professional responsibility and authority of employees, which allows them to reach a new level of tasks and show abilities and realize their potential;

Identification and awareness of the existing problem

Identification and assessment of factors influencing use and staff efficiency

Formulation of goals and objectives of coaching

Choice of coaching technology (types, techniques, tools)

System approach to training the company's staff:

Types of coaching: Life-coaching, career - coaching, Leadership-coaching, Personal-coaching. Team-coaching, Of-Job-coaching, Executive-coaching	**Coaching techniques:** «Balance wheel», model «GROW», Dilts pyramid, scaling. Disney Strategy	**Coaching techniques:** Associative cards, technique «Cartesian questions», «SMART», «Funnel of questions»

Expected coaching effect:

Achieving the effect of of synergy from interaction coach and staff	Achieving personal and corporate goals	Improving the level of corporate culture	Combination of personal and corporate interests of staff

Expected results of coaching use:

Improving the level of professionalism of staff	Improving efficiency HP management	Adaptation of staff to constant changes	Increasing creativity, initiate of staff

Increasing the intellectual potential of the company

Formation of prerequisites for the implementation of adaptive management

Successful implementation of strategic and tactical goal of the company

Fig. 3. Model of coaching implementation under the conditions of adaptive management of the company. Source: Compiled by the authors based on their own research

4) a high level of openness to staff, creating opportunities for employees to convey their views to managers, responding to the vision of solving professional problems by the company's staff, implementing the principles of respect for personal opinion of employees in solving tasks and prospects for achieving goals (branches/companies);

5) an effective system of personal and corporate motivation to participate in the learning process (retraining, advanced training, professional development and competencies) within a single inclusive socio-corporate culture of the company;
6) providing assistance, counseling, counseling, psychological and professional orientation to solve problems, outlining possible paths to success, which will create opportunities for the employee to solve problems;
7) maintaining a positive and clear vector for productive work in terms of identifying errors and failures, assistance in analyzing situations and identifying opportunities necessary for the successful achievement of goals;
8) taking into account the personal goals and motives of staff, assistance in the visualization of personal interests, incentives and prospects for self-development of the employee, which should become part of a single system for success of the company and business development in general.

Modern theories and practices of coaching are formed under the influence of a significant number of dynamic factors of social life, professional activities of staff, behavioral theories of management, business environment and other factors that actively change perceptions and human behavior. The adoption of a team conflict dynamics model increases the likelihood of the success of a project by tackling every single aspect that contributes to this success in the first place. It addresses how and which individuals have selected for the team, the skills, and competencies that the team leader has, the processes that should observe throughout the project and the things to look out for to avoid team conflict as time progresses (Zamlynskyi et al. 2020)

The processes of transformation of public consciousness, self-recognition, formation of values of employees today form challenges for HR management and professionals who accompany the process of training, education and professional adaptation of company staff. Coaching, as a tool for company personnel management, should focus on future trends, changes and requirements. Prospects and constant development of tools, tools and levers of coaching today is a necessary condition for the professional activities of coaches. Certified coaches in modern practice use a large number of tools, the main of which are: single, double and triple loop, shotgun K. Argiris, declared theory of action, 16 basic desires for Rice, system of basic questions, methods of communication («strong questions», direct communication), methods of facilitating learning and obtaining relevant results (stimulating consciousness, designing actions, setting goals, managing progress and responsibility), etc. All of them are aimed at achieving a performance indicator in the form of disclosure and maximum realization of personal and professional potential of the employee.

One of the main goals of coaching in the personnel management system is to organize the work process so that the subordinate approaches the manager with possible options for solving problems, was proactive, involved and motivated. Due to the production needs of the company change the requirements for the competencies of employees, which also involves changing the managerial competencies of the head, including the use of basic coaching skills. The set of key professional competencies of coaches include the following (Fig. 4).
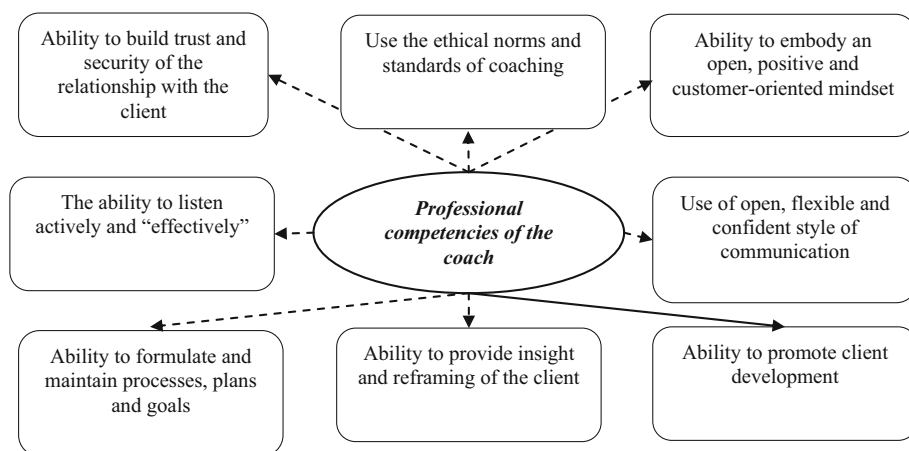
Fig. 4. Professional competencies of the coach. Source: Compiled by the authors on the basis of their own research

Given the fact that modern coaching management practices relate to one of its styles (technologies), there is a fundamental difference in the nature of its process. If the manager must clearly and concretely convey to the performer the content of the task and the algorithm of its implementation, the coach, using a set of specific methods and tools, promotes self-awareness of the employee's actions and basic steps to achieve goals. Coaching promotes a clear vision of professional (personal) problems, strategic thinking, within the company's personnel management contributes to the creation of a unified system of corporate values, interests and priorities, provides management and employees with creative tools to optimize development strategy and find optimal solutions to individual and corporate problems.

Conclusions

Coaching as a form of education and training of the company's staff is an innovative tool for adaptive management and HR management. Coaching is a modern means of communication with a new generation of employees, a new tool for understanding the work environment and personnel management, based on openness, mutual respect, mentoring.

In modern conditions, the personnel management system requires dynamism, constant accumulation of intellectual capital, so coaching is aimed at creating conditions for the development of personal and professional potential of the employee, forms the preconditions for increasing the level of independence, responsibility and initiative of the organization's staff, helps to successfully perform current and strategic tasks, achieve goals. Coaching is a tool of corporate management culture, which is based on the principles of trust, partnership, teamwork, creative thinking, individual and joint professional success of the company's staff.

Through the use of a set of moral, socially responsible, reputational, psycholinguistic and innovative management methods, tools and technologies, coaching in the personnel management system of companies provides the following results: 1) develops the ability of staff to work for results; 2) forms a strong personal and professional individual and

collective labor potential of the company; 3) provides an effective system of motivation and commitment to the corporate culture of the organization on the basis of common values; 4) provides assistance in the professional and career growth of employees; 5) promotes the formation of a single team, the development of socio-professional ties of the team; 6) forms the prerequisites for personal growth, professional growth, balance of individual and working life of the employee, beyond real and potential limitations, improving the quality of life based on achieving a harmonious state of man and team within the organic solution of personal and professional life problems.

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The Status of Using E-learning Platforms Among the University College of Applied Sciences Students to Enhance Their Soft Skills

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Abstract. The study aimed at exploring the degree to which the University College (UCAS) students use e-learning platforms to enhance their soft skills. The researchers used the descriptive approach, on a random sample of (350) students. The researchers designed a questionnaire with five domains (communication, time, teamwork, planning, problem solving). The study revealed that there are no differences in the estimation of UCAS students for the use of e-learning platforms in enhancing their soft skills due to the variables of gender and university specialization. It also showed that there are differences in the estimation of UCAS students in using e-learning platforms to enhance their soft skills in favor of the second-level students compared to first-level students. Accordingly, the researchers recommend motivating the UCAS faculty members to employ e-learning platforms in the educational process, and training students through some specialized courses on the use of e-platforms for academic and freelance purposes.

Keywords: E-learning platforms · Soft skills · Students of the University College of Applied Sciences · E-learning

1 Introduction

E-learning is one of the most important modern technological implications in the educational sector, as it represents a new model that changes the form of education and contributes to continuing education and university education. For this reason, many educators consider e-learning as a modern revolution in new techniques and methods of learning, starting from the use of various tech tools in the educational process to reach the virtual classrooms that enable learners to attend and interact with lectures and lessons anywhere in the world. Through the Internet and technological applications, e-learning may be synchronous or asynchronous. (Baroudi, 2015).

In this context, e-learning platforms are on top of the second-generation technologies, which have been increasingly used by faculty members; due to its vitality and engagement during the teaching-learning process. Implementing technologies in learning and teaching motivates the learner to interact with the presented content, as well as with peers and teachers, in addition to engaging the learners in a number of tasks that develop their skills (Juhani 2016).

The importance of the educational platforms in teaching and learning is derived from the significant services they provide to students and teachers, the most important of which are: they combine social networks to help them exchange opinions and ideas, and enable the teachers to create virtual classes to discuss individuals and groups of the students. These programs and applications are easily downloaded to smartphones and other devices. Thus, using technologies in the educational environment encourages communication between teachers and students from around the world (Al-Anizi, 2017). Therefore, the university student today needs a set of skills that guarantee good chances of getting a job and to perform effectively and efficiently in their career. These skills go beyond the academic training and specialization to broader fields, so they are called soft skills, and they have been imposed by the ongoing needs of the labor market. Universities in developed countries seek to focus on training those soft skills, as higher education programs and policies in the world evolve according to the development of the labor market needs and requirements. Recently, soft skills are introduced as a term that refers to human communication capabilities and linking relationships and other skills with others. These skills are gaining increasing interest from employers who require them to be available in their employees in addition to the basic technical hard skills provided by an academic degree.

Some previous studies were concerned with soft skills, such as the study of Al-Zahrani (2021) which aimed to know the role of student activities in developing some soft skills among secondary school students from their teachers' point of view. The results showed an average level in developing soft skills, however, after implementing the training program, the percentage of soft skills increased. Another study by Thabet (2020), aimed to measure the effectiveness of a proposed training program for developing soft skills among the administrative bodies of student unions et al.-Aqsa University. The results revealed the existence of a statistically significant relationship between soft skills and entrepreneurial attitudes among college students in Gaza governorates. That is why many countries have sought to develop e-learning and formulate realistic plans to implement it according to the available capabilities. In this regard, the Arab efforts come much later than the global efforts, and they have not yet determined their future vision regarding the educational process and the role of e-learning. Therefore, they must set a clear vision in a consistent manner with its material, human and cultural capabilities, and not to rush blindly after all new technologies without considering their own contexts and circumstances (Al-Taher and Attia, 2012).

Therefore, employing modern technology in education is an important means to enable the educational sector to overcome the negative effects of the COVID-19 crisis. In other words, e-learning represented an important source for delivering educational material to various students while they are in their homes, regardless of the place and time in which they are, and this is necessarily related to the e-learning features and facilities, which contributes to overcoming the challenges and obstacles related to time and place (Amira et al. 2019). Therefore, we will try, through this study, to identify the extent to which students of the University College of Applied Sciences (UCAS) use e-learning platforms to enhance their soft skills. Accordingly, this study aims to (1) identify the degree to which UCAS use e-learning platforms to enhance their soft skills. (2) Detect the existence of any statistically significant differences in the UCAS students degree

of use to the e-learning platforms due to the study variables (gender - specialization - academic level). Finally, the current study aims to shed light on the obstacles to using e-learning platforms from the UCAS students' point of view.

2   Theoretical Framework

The successful chance of students graduating from any university, regardless of their academic major, is not limited to their academic achievement, but through their possession of certain skills that contribute to their success to compete in the labor market.

2.1   The Soft Skills

Investopedia (2020) defines the soft skills as the personal qualities and skills that characterize a person's relationship with others in the workplace, and soft skills are a complement to hard skills, which refer to a person's professional knowledge and skills. Other researchers define soft skills as the capabilities required in the workplace to achieve professional success. Rao (2012) added that soft skills are the ideal way to present oneself to others, as soft skills are highly relevant to a person's personality, behavior and actions in the situations s/he is going through. Moreover, in Parsons' definition, soft skills refer to individual qualities that enhance personal interactions, and job performance, and career prospects (Parsons, 2008). On the other hand, Tropin (2006) defined it as the traits and the ability to act in situations and behavior, not specialized technical knowledge or competence. Perreault (2004) defined soft skills as the personal and behavioral traits, and the level of commitment of a person that distinguishes her\him from other people who have Similar experiences.

According to Al-Jamri (2015), soft skills are a term that has become increasingly frequent in recent years, especially in the world of management and human resources, as it means the skills necessary to make a person able to deal with others and market one's ideas in a convincing manner, as well as enable the person to communicate effectively with others, in addition to making this person initiator…etc.). The researchers define soft skills, operationally in this study, as the personal characteristics that must be available in the UCAS graduates to succeed in the work environment, not just for their integration into the society, including communication, initiative, teamwork, planning, time management, leadership, and problem solving.

2.2   The Educational Platforms

There are many types of electronic educational platforms, some of which are free and open source platforms, while some are closed source and paid platforms. According to Al-Shawarbeh (2019:16) the most important of these English platforms is the Khan Academy platform, which provides more than (250) video for those who are looking to increase their knowledge in engineering, mathematics and other sciences. Also, the EdX platform, which is a free initiative from the University of California, Harvard University, and the Massachusetts Institute of Technology, which offers free lectures and is concerned with programming, arts and applied sciences, and Edunao, which is

A European educational site containing university lectures in various fields of political science, philosophy, criminology and innovation.

Among the most prominent Arab electronic educational platforms mentioned by Alsabhi (2016:36) is the Edraak platform, which is an Arab platform for open source group courses. This platform came as one of the initiatives of the Queen Rania Foundation for Education and Development. The platform provides the opportunity for students to participate in courses offered by the best international universities such as Harvard and the Massachusetts Institute of Technology, and students can obtain certificates upon the completion of those online training courses. Additionally, Rawaq platform is an electronic educational platform that provides free of charge and in Arabic study materials in various fields and specializations by academics from all over the Arab world.

2.3   Benefits of the Electronic Educational Platform for a Student

The benefit of Edmodo (educational platform) for the student, as he sees by Sulaiman (2016: 9) are shown below:

- Quick and immediate access to homework, school notices, view homework, and teacher comments on homework so that they are accessible to students.
- The home page of the educational platform is a tool available to help students manage their studies.
- Helps students complete their assignments, especially absent students, where the assignment is on the platform, as well as the calendar, which helps to organize important thoughts and schedule appointments.
- There is also a table of dates that the student can look at whenever they want to know the important dates: from the due dates of assignments, exams, important future events and any other information related to the content.

2.4   Importance of Soft Skills

Although both soft and hard skills are necessary to get a job and succeed in the professional life, according to Investopedia (2020) hard skills are the reason for reaching the interview, while soft skills are the reason for getting a job. Since employers are looking for employees who are good at completing tasks, Crews and Hemby (2009) states that graduates should strive to possess those soft skills that employers are looking for. It is worth mentioning that this conclusion is confirmed by Glenn (2008), as he reported that employers stick to employees who have soft skills over others to maintain a competitive advantage provided by the institution or company. Thus, the importance of the soft skills for students and graduates appears, as Kawthar Kojk (2008) emphasizes the need to refine the learners' personality with these skills to guarantee that university graduates are in a healthy and sound environment, enabling them to coexist successfully and with flexibility in their society and to perform their tasks at work effectively and efficiently.

2.5   How to Acquire Soft Skills

Upon explaining the concept of skills, they can be taught and learned in their direct sense within an appropriate environment, but after addressing the concept of soft skills,

it seems obvious that they are unique skills and differ from other skills that we observe around us such as swimming and riding a bike or what we teach our children in school like the skill of writing and reading. Accordingly, it could be stated that it is difficult to teach soft skills within the campus of universities and academic institutions. In this regard, Philpot (2010) states that personality traits, work behaviors and individual traits are problematic to accurately assessed, so it is not easy to judge whether these skills are possessed or not. Others believe that soft skills can be taught and acquired, either by obtaining formal training in soft skills such as communication, negotiation and other soft skills through professional trainers and thus obtaining a certificate in those soft skills, or through the self-training in which the concerned person develops her\himself by himself through practice little by little, and anyone can possess any skill he needs, regardless of the degree of possession, by making efforts and having the motivation to possess it. In this context, Hagmann and Almekinders 2003:12 mentions that the ways to develop and develop soft skills are: motivation, learning and practicing new skills, identifying the individual's lack of skills, focusing on the missing skills, as well as reading or perusing the target skills, adding To join the programs and courses that develop these skills, and through contact with individuals who possess such skills and benefit from them, in addition to spreading and teaching new skills to the individuals around us.

Anyone can acquire any skill he needs, regardless of the degree of possession, by exerting efforts and having the motivation to possess those skills. In this context, Hagmann and Almekinders (2003:12) mentions that the ways to develop soft skills are: motivation, learning and practicing new skills, identifying the individual's lack of skills, focusing on the missing skills. Also, they added that owning the soft-skills could be achieved by reading or perusing the target skills, besides joining training courses and programs that upgrade these skills, and through interacting with individuals who possess such soft skills to benefit from them.

3   The Methodology of the Study

The researchers used the descriptive approach to reveal the degree to which UCAS students use e-learning platforms to enhance their soft skills, due to the suitability of this approach for the purpose of the study, since the researchers will describe the degree to which students use electronic platforms without any intervention.

3.1   Study Population and Sample

The study population consisted of all the UCAS students who enrolled in the diploma programs and registered in the second semester of the academic year 2019–2020, as they were (3441) students as distributed in Table 1. The study sample was chosen following the stratified random method so that the study variables (gender, level, study specialization) were considered during the sampling. The study sample was (350) male and female students, as distributed in Table 1 below.

Table 1. The study population and sample

Population	Nursing	Education	Humanities	Business	Computer	Engineering	The total
Number	903	223	436	493	746	640	3441
Percentage %	26.2%	6.4%	12.6%	14.3%	21.6%	16.6%	100%
Sample No. %	92 26.2%	23 6.5%	45 12.8%	50 14.2%	75 21.4%	65 18.5%	350 100%

3.2 Study Tools

The study tool is a questionnaire to explore the opinions of the sample about the role of e-learning platforms to enhance their soft skills. Based on reviewing the related literature, the researchers designed the 30-item questionnaire.

The Validity of the Questionnaire. The designed questionnaire was sent to a panel of expert referees, so some necessary amendments were made by modifying and adding some skills. The final 32-item questionnaire consisted of two sections; the first section was personal demographic data, and the second section, consists of five domains, is to measure enhancing e-learning platforms for the UCAS soft skills. The internal consistency of the questionnaire was calculated by the Pearson correlation coefficient between the average of of each item of the questionnaire with the average of the sub-domain to which each item belongs. The results showed that there is a statistically significant correlation between the sub-domains of the questionnaire and its main domain, and all the items of the questionnaire were statistically significant at the significance level (0.05) with its sub-domain. For the **reliability of the questionnaire** was obtained by calculating the Cronbach alpha coefficient for the sub-domains with the main field (enhancement of e-learning platforms for soft skills), where the value of the stability coefficient of the study tool was 0.76, which is an acceptable and indicates the stability and reliability of the questionnaire to be used for the data collection in this study.

4   Study Results and Their Interpretation

To answer the first question of the study i.e. "To what extent do UCAS students use e-learning platforms to enhance their soft skills?" the researchers calculated the averages, frequencies, relative weights, and percentage for all the items of the questionnaire.

The results show that the highest rank items in the first domain "Enhancing e-learning platforms for communication and communication skill" was item number (6) i.e. "*e-learning platforms give me the skill of information gathering and analysis* ", with a relative weight (39.1%). The researchers attribute this to the students' awareness of the importance of e-learning platforms, their effectiveness in the educational process, and their possession to search on the World Wide Web as a primary source, and to access the information they need, besides enabling them to access educational materials at any time

and from anywhere, and allowing them to retrieve their files and study work. Getting this item as the highest rank may be also attributed to the fact that some platforms are in Arabic, and they work on mobile phones and tablets as well as on personal computers. While the lowest item in this domain, with a relative weight (14.9%), was the item number (1) i.e. "*I stutter when talking to others through educational platforms*". The researchers attribute this to the fact that the UCAS students are linguistically and psychologically mature to manage dialogue with others effectively and fluently. It is also due to the availability of communication skill among UCAS students which has a great role in improving their attitudes towards a better future, especially since communication is the basis of social relations.

It is worth noting that the highest item in the second domain, "*Enhancing e-learning platforms for the skill of time management*" was item number (3), which states: "*I have a conviction that using educational platforms is an important thing*", as it ranked first with a relative weight of (34.6%). The researchers attribute that the educational platform helps UCAS students learn about evaluating their work and see their homework and grades, and facilitates their communication with their teachers, and shorten the time by posting whatever topic on the platform and then to be discussed with the students, in addition to the e-platforms are free in general and easy to use. On the other hand, the lowest item in this domain was item number (1), which states: "*Using educational platforms is a waste of time and effort*", where it ranked first with a relative weight of (10%). The researchers attribute this to the UCAS students' sense of the value of time and responsibility in time management, as they see in electronic platforms only the positive side by using them as a means of learning, and if they are employed otherwise, e-platforms become a waste of time and money.

The results also revealed that the highest item in the third domain, "*Enhancing e-learning platforms for the skill of working within the team*" was the item number (1), which states: "*Using educational platforms gives priority to* teamwork", where it ranked first with a relative weight of (34.6%). The researchers attribute this to the fact that the use of electronic learning platforms facilitates and helps the process of participatory and cooperative teaching and learning. In addition, e-learning platform provides an integrated environment that responds to all students' academic needs, raises their abilities and level of awareness, develops their performance, informs them of progress in their field of study, raises their readiness to learn better, and develop their skill of cooperation and interaction to share ideas and suggestions.

Moreover, it should be noted that the lowest item in the fourth domain "*Enhancing e-learning platforms for planning skill*" was item number (7), which states: "*Others' understanding of my ideas and opinions is reduced through educational platforms*", where it ranked last with a relative weight of (17.4%). The researchers attribute this to the UCAS students' experience of using e-platforms, especially as they are an integral part of their lives. However, the highest item in this regard was item number (6), which states: "*I leave myself in my spare hours through educational platforms*" where it ranked first with a relative weight of (32%). The researchers attribute this to the existence of the culture of using technology and smart devices among UCAS students and the availability of internet service at UCAS or at home. The use of this technology saves time and effort, and the UCAS students also find pleasure and harmony in using electronic platforms

not only for learning purposes, but for entertainment and recreation. On the other hand, the lowest item in this domain was item number (2), which states: "*My own goals are consistent with the capabilities of educational platforms*" where it ranked last with a relative weight of (10.9%). The researchers attribute this to the existence of individual differences between UCAS students, followed by differences in interests and priorities.

The results indicate that the highest item in the fifth domain "*Enhancing e-learning platforms for the skill of decision-making and problem solving*" was item number (8), which states: "*Educational platforms help me in evaluating my suggestions and recommendations to become more accurate*" where it ranked first with a relative weight of 43.4%). The researchers attribute this to the fact that UCAS students' use of electronic educational platforms to form positive attitudes towards their use, as e-platforms support and complement the usual learning method, facilitate communication with professors, besides the possibility of holding forums, publishing exams and their results, quick access to educational materials, and encouraging self-learning. Additionally, UCAS students enjoy studying through the e-learning platform, because of it ease their learning.

To answer the second question, *"Are there statistically significant differences in the average estimates of students of the University College of Applied Sciences for e-learning platforms in enhancing their soft skills due to the variables (gender - specialization - academic level)?"* The researchers used Three Way AVOVA, and the results showed that there is enough evidence to reject the null hypothesis in favor of the alternative hypothesis that confirms that homogeneity is not achieved. Accordingly, the researchers concluded the following:

1. There are no statistically significant differences between the average rating of the UCAS students for e-learning platforms in enhancing their soft skills due to the gender variable, as the value of F was (0.723) and the statistical significance sig = (0.396), which confirms that there is not enough evidence to reject the null hypothesis i.e. there are no differences between the averages. The researchers attribute this to the identical methodology, mechanism and teaching requirements for males and females. In fact, sometimes the same lecturer teaches the course for the males' and females' sections at UCAS, in addition to the fact that, recently, there is no longer a difference in the use of technology between males and females.

2. There are statistically significant differences between the average estimates of UCAS students for e-learning platforms in enhancing their soft skills due to the level of study variable, as the value of F was (6.463) and the sig = 0.011. Since the variable (level of study) is divided into two levels (first, second), to detect the differences between the averages of the two levels, the researchers performed a T-test for two independent samples.

3. There are no statistically significant differences between the average rating of the UCAS students for e-learning platforms in enhancing their soft skills due to the specialization variable, as the F value is (0.329) and the sig is (0.06).The researchers attribute this to the intersection of all UCAS students in some courses, such as UCAS requirements such as An Introduction to Computers and Entrepreneurship, as they are expected to graduate from these courses within close levels of knowledge and skill.

To answer the third question i.e. "*What are the obstacles to using e-learning platforms from the perspective of students of the University College of Applied Sciences*?" It is clear that the item number (1) which states "*there is not enough time due to the pressure of lectures and the large amount of assignments*" obtained the highest rate. The researchers attribute this to the fact that the UCAS students are all full-time students, and that the lecture system at UCAS is a morning shift. In other words, most of the UCAS students' lectures start at 8:00 am and end at 3:00 pm. Accordingly, there is not much free time for students, especially since on the agenda of the academic departments at UCAS, there are student activities that are carried out during the specified pre-allocated academic free hours weekly.

5   Summary and Recommendations

The study concluded that there are no statistically significant differences at the level of significance ($\alpha \leq 0.05$ in the responses of UCAS students to the use of e-learning platforms in enhancing their soft skills due to the variables of gender and specialization. It also indicates that there are statistically significant differences at the level of significance (α) ≤ 0.05 in UCAS students' responses in using e-learning platforms to enhance their soft skills in favor of the second-level students. Upon that, the study recommends motivating the UCAS faculty members to employ educational electronic platforms in the educational learning process, and training students through some courses, and to set up specialized courses in the use of educational electronic platforms, as well as by providing free laboratories at UCAS to be used by students, who do not have smart phones or computers, in their limited free time. Finally, the study recommends educating students about the importance of possessing the skills of using e-educational platforms because such skills and platforms are their gateway to self-employment and freelance jobs.

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Accounting Students Perspectives of Peer Tutoring

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Abstract. This study aims to explore accounting students' perspectives of peer tutoring and its influence on their academic achievement. To do so, this study employed a quantitative approach. An online survey, using Microsoft Forms, was developed to collect data from 763 students. Participants are selected using two sampling techniques, namely purposive and convenience sampling. The results show that the vast majority of the participants believe that peer tutoring can enhance their academic performance and improve their scientific and cognitive levels. The respondents also considered peer tutoring as an enjoyable activity for both tutors and tutees and prefer to engage in it face to face, not online. Furthermore, the participants supported the idea of introducing peer tutoring formally into the education system. Other findings and recommendations are discussed in this study. This study contributes to the discussion on the importance of peer tutoring, particularly amongst accounting students.

Keywords: Peer tutoring · Educational accounting · Performance · Tutors · Tutees · Jordan

1 Introduction

The concept of peer tutoring has received noticeable attention over the past few years. Peer tutoring is described as a method of teaching and learning in which an individual (tutor) teaches his or her colleagues (tutees) a skill or a topic in an informal style [1, 2]. Peer tutoring is different from the conventional lecture method, it focuses on a collaborative style of learning, and learner-to-learner interactions [3]. Peer tutoring can be done by students of the same or different ages; it creates a chance for the learner to take advantage of their knowledge and skills in a purposeful way.

Several past studies have shed light on the benefits of peer tutoring in different areas. For example, peer tutoring was found to improve communication skills and teamwork activities [4] and enhance students' attention by making them more active [1]. In addition, peer tutoring was suggested to positively affect learning problem-solving skills [1]. On top of that, peer tutoring can improve students' academic outcomes in different subjects

[3, 5]. However, peer tutoring has received little attention in accounting, especially in Jordan. Indeed, this study is responding to various calls for more studies on peer tutoring in accounting, such as Ibrahim and Wunba [4], Marsely [1], Olulowo et al., [3], and Wooten [6]. As such, this study aims to explore the concept of peer tutoring from accounting students' perspectives.

The rest of this paper is organized as follows. The following section reviews the literature. Section three illustrates the employed method. Results and discussion is shown in the fourth section. Finally, Sect. 5 concludes the paper.

2 Literature Review

Accounting education has been received attention from many researchers [7–13]. Peer tutoring is a form of teaching where a student teaches his or her colleagues a concept or a skill [2]. Furthermore, peer tutoring is described as a student-to-student teaching style where both the tutor and the tutee are at a similar educational status [14]. Peer tutoring can be classified into two forms; the first one is called "near-peer," which occurs when one learner has more knowledge than the other; whereas the second type is called "co-peer" in which they are at the same level of knowledge [1]. In the literature, several terms are used interchangeably with peer tutoring such as 'peer teaching', 'unstructured tutoring', and 'cooperation'; nevertheless, peer touring is the most commonly used term. Various studies have used social constructivism theory as a lens to understand peer tutoring. Social constructivism is an educational theory that can explain how knowledge can be shared amongst people. Social constructivism is described as a theory of learning in which people learn and share knowledge through interaction with others [15]. Social constructivism theory suggests that social worlds develop out of individuals' interactions with their culture and society. Following past studies, social constructivism theory will be employed in this research.

The importance of peer tutoring has been confirmed in various past studies. For example, peer tutoring is considered a highly effective educational strategy for both teachers and students by giving tutors the opportunities to teach and can increase their happiness, satisfaction and make them feel proud [1]. Moreover, peer tutoring was suggested to promote learning by creating a flexible and supportive environment that makes learning entertaining [16]. Indeed, the significance of the peer tutoring approach lies in its ability to enhance students' academic performance [17]. Nawaz and Ur Rehman [5] found that peer tutoring improves the academic performance of weak students by increasing their understanding of content. In financial accounting, Olulowo et al. [3] studied the influence of peer tutoring on students' academic achievement and found that, in comparison with conventional learning, peer tutoring is more effective in enhancing the academic achievement of students. The same result was found by Ibrahim and Wunba [4]. Despite the confirmed benefits of peer tutoring, it has received little attention in educational accounting, particularly in Jordan. As such, this study aims to explore accounting students' perspectives of peer tutoring as a learning strategy and its influence on their academic achievement. Table 1 summarizes the key literature in the field of peer tutoring.

Table 1. Summary of some key studies on peer tutoring

Study	Focus	Context	Methods	Sample	Findings
Marsely [1]	Peer tutoring effectiveness	Indonesia	Qualitative/case study/documentation, observation, and in-depth interview	Three Accounting Management Practice classes. Both tutors and tutees were the forth-year students of Accounting Management Practice classes	Peer tutoring was found to be a very important teaching technique for both the tutor and the tutee. It can increase tutors' confidence and happiness and make them feel trusted when delivering material in front of their colleagues. Peer tutoring makes tutees feel more comfortable to ask questions or suggest ideas as peer tutoring can create a flexible and non-threatening learning environment. Peer tutoring was found to enhance the academic performance of students and improve their communication and social skills
Olulowo et al. [3]	Effectiveness of peer tutoring and academic achievement	Nigeria	Quantitative: A quasi-experimental design with a $2 \times 2 \times 3$ factorial matrix was adopted	137 students from eight intact classes in secondary schools in Southern Nigeria	Peer tutoring was found to be related to students' academic performance. Peer tutoring is recommended as a teaching strategy, particularly in financial accounting modules

<div align="right">(continued)</div>

Table 1. (*continued*)

Study	Focus	Context	Methods	Sample	Findings
Ibrahim and Wunba [4]	Effectiveness of peer tutoring and academic achievement	North-Eastern Nigeria	Quantitative: Quasi experimental design	130 SS II Financial Accounting students	Peer tutoring was found to enhance the academic performance of financial accounting students. The study recommended that lecturers should encourage students to participate in peer tutoring activities
Bowman-Perrott, Davis [18]	Academic Benefits of Peer Tutoring	The USA	Quantitative: 26 single-case research experiments	938 students in Grades 1–12	Students who have engaged in peer tutoring achieved better results than others who did not engage in peer tutoring. The study recommended providing rewards for students who achieved high results, particularly in high and middle schools. Peer tutoring can be used as a motivational tool. Students with disabilities achieved higher academic results than others who do not have disabilities
Comfort and James McMahon [19]	Effectiveness of peer tutoring and academic achievement	The UK	Quantitative: Experimental	93 students on an undergraduate Sports Science degree	In comparison with students from the same year and previous years' cohort, students who engaged in peer tutoring activities have demonstrated greater academic achievement than those who did not

Table 1. (*continued*)

Study	Focus	Context	Methods	Sample	Findings
Wooten [6]	Effectiveness of peer tutoring and academic achievement	Canada	Quantitative: student survey data and open-ended responses	127 financial accounting students	A significant and positive relationship was found between peer tutoring and students' grades
Nawaz and Ur Rehman [5]	Peer tutoring as a strategy of teaching on students' success in the subject of mathematics at the secondary level	Pakistan	Quantitative: experimental study	200 students from two different schools	Peer tutoring was found to enhance students' performance in mathematics, especially weak and mediocre students
Topping, Hill [20]	Peer Tutoring in undergraduate Economics	Scotland	Quantitative: Experimental group	125 undergraduates in a year-long class in mathematical economics	The results suggest that peer tutoring can help students to achieve better degrees and reduce their drop-out rates
Schleyer, Langdon [21]	Peer tutoring as a pedagogy	UK	Qualitative/Open-ended questions	39 Engineering Students from the University of Liverpool/UK	Peer tutoring was found to positively affect tutors' leadership and communication skills. It was also found to improve students' problem-solving skills and their feeling of responsibility for their learning

3   Methods

This research employed a quantitative approach to achieve its aims. Accounting students in Jordan are the main target in this study. Participants were targeted using two sampling techniques: purposive and convenience sampling. Purposive sampling enabled the researchers to concentrate on the right type of participants who can provide meaningful data, whereas convenience sampling enabled the opportunity to gather data from the available and easy-to-access people [22]. Participation in the study was voluntary, and the anonymity of the participants was assured to motivate them to give honest responses.

An online survey, using Microsoft Forms, was developed to collect data from the target population. The questionnaire consisted of fourteen questions, four of them were demographic questions such as gender and majors of the participants. The rest were

about peer tutoring such as "I believe that peer tutoring contributes to increasing my academic achievement"; "I think that peer tutoring contributes to increasing my scientific and cognitive level"; "I enjoy teaching a classmate a certain subject or topic"; and "I enjoy having a classmate teach me a specific subject or topic". Many of the questions were anchored on a five-point Likert scale from 1 = strongly agree to 5 = strongly disagree. The data were collected mainly from students in seven accounting courses (14 sections) in Jordan, namely principles of accounting, special topics in accounting, cost accounting, financial statements analysis, accounting for financial institutions, private financial accounting, governmental accounting, and research methods in accounting. A total of 763 valid responses were received. The data were entered into SPSS 26 and analyzed using descriptive statistics.

4   Results and Discussion

The demographic characteristics of the participants are illustrated in Table 2. In total, 763 responses were obtained. As can be noticed from the table below, slightly over half of the participants were females as they represent 58.7% of the respondents while males represent 41.3%. The distribution of the academic year level demonstrated that the majority of the respondents were second, third, and fourth-year students as they represent 42.7%, 30.3%, and 25.6% of the participants, respectively. However, only 11 participants were first-year students (1.4%). This can indicate that the participants have sufficient experience of peer tutoring that enabled them to contribute to this study, particularly as the vast majority have been studying in universities for more than one year. The results showed also that the vast majority of the respondents (77.6%) were majoring in accounting, and 'accounting and commercial law', whereas the rest (22.4%) were from different business fields, illustrated in the below table.

The participants were asked to indicate the extent to which they agree or disagree with several statements about peer tutoring. Four statements were anchored on a five-point Likert scale with five responses: 1 = strongly agree; 2 = agree; 3 = neither agree nor disagree; 4 = disagree; and 5 = strongly disagree. Table 3 demonstrates the survey questions and their mean scores (M) and standard deviation (S.D).

The participants in this study demonstrated a high level of support to the questions in the table above as the mean scores for the four questions were between 2.06 to 2.18. For instance, the vast majority of the responded students (around 74%) believe that peer tutoring can enhance their academic performance. This result is in line with various past studies in different fields and several countries such as the work of Ali et al. [16], Ibeth et al. [17], Ibrahim and Wunba [4], Nawaz and Ur Rehman [5], and different other studies. For example, Ibrahim and Wunba [4] studies the influence of peer tutoring on financial accounting students in Nigeria and found that peer tutoring has a positive impact on students' academic achievement. As such, the result of this study is supported by the literature as the participants believe that peer tutoring can improve their academic performance. The results also give support to past studies by confirming the reliability of similar results in another context.

The results also revealed that over 70% of the participants think that peer tutoring can improve their scientific and cognitive levels (M = 2.18). This indicates that peer tutoring

Table 2. Descriptive characteristics of the participants.

	Profile category	Number of participants	Percentage
Gender	Male	315	41.3%
	Female	448	58.7%
Year level	First-year	11	1.4%
	Second-year	326	42.7%
	Third-year	231	30.3%
	Fourth-year	195	25.6%
Major	Accounting	323	42.3%
	Accounting and commercial law	269	35.3%
	Finance	64	8.4%
	Business Administration	32	4.2%
	Economics	32	4.2%
	MIS	28	3.7%
	Management of risks and insurance	15	2%

Table 3. Descriptive statistics for the study's questions.

Item	N	Mean	S.D
I believe that peer tutoring contributes to increasing my academic achievement	763	2.06	0.824
I think that peer tutoring contributes to increasing my scientific and cognitive level	763	2.18	0.851
I enjoy teaching a classmate a certain subject or topic	763	2.06	0.869
I enjoy having a classmate teach me a specific subject or topic	763	2.18	0.849

can help students develop their skills and knowledge by encouraging them to engage in learning activities. This finding is supported by the literature such as Ali et al. [16], Marsely [1], Ibrahim and Wunba [4], and Schleyer et al. [21]. For example, Schleyer et al. [21] found that Peer tutoring positively affects tutors' leadership and communication skills; it also found to improve students' problem-solving skills and their feeling of responsibility for their learning. Similarly, peer tutoring was discovered to promote students' communication skills and teamwork activities [4], improve their problem-solving skills, and can make them more active [1]. As such, this study contributes to the literature by giving more support to past studies and contributes to the discussion on the positive influence of peer tutoring on students.

In terms of enjoyment, the output showed that most of the respondents (above 70%) believe that peer tutoring is an enjoyable activity for both tutors and tutees. In sum, peer tutoring is considered to have a positive influence on students' academic achievement

and their knowledge, and the students see it as an enjoyable activity. This can be due to the fact that peer tutoring is conducted in a relatively informal environment [1, 2] where students can express themselves freely and learn in friendly methods. This can make the process of peer tutoring enjoyable.

The participants were also asked: "From your perspective, which is more efficient? 1) to be taught only by your lecturer, 2) to be taught only by a colleague, or 3) to be taught by both a lecturer and a colleague where the lecturer teaches you the course material and the colleague teach you what is not fully understood in the class". The last option received the highest scores as 76.8% of the respondents chose it, which denotes that they prefer to use peer tutoring as a supportive method in their learning journey. However, just 19.4% preferred to be taught only by the lecturer. This outcome gives an indicator to decision-makers in higher education to consider peer tutoring in the education system as students support this option. On another hand, the findings showed that 86% of the students who participated in this study preferred to engage in face-to-face peer tutoring, while only 14% chose to have it online. This study could be the first of its type to ask these questions and get these results in the field of accounting, particularly in Jordan.

Several leading universities around the world have used peer tutoring as a formal method of teaching. As such, a question had been asked in the survey on introducing peer tutoring formally in teaching. The participants were asked to indicate the extent to which they agree or disagree with this idea: "Introduce peer tutoring formally as a method of teaching where if the lectures are on Sundays, Tuesdays, and Thursdays, the lecturer teaches you on Sunday and Tuesday, while an outstanding student teaches you on Thursdays, re-explaining anything that is not clear." This idea has received the students' interest as about 61% of them responded, "agree and strongly agree". Nevertheless, around 20% felt neutral whereas only 19% did not agree with the proposed idea. As these findings were based on 763 students, which is a good number, the results can be used by decision-makers to seriously think about the benefit of peer tutoring in the education system, which may lead to introducing peer tutoring formally in universities.

Overall, this study provides an in-depth insight into students' perspectives of peer tutoring and its influence on their academic performance. To the best of the researchers' knowledge, this study could be the first to shed light on the relationship between peer tutoring and students' performance in Jordan. Additionally, this study could be amongst the first attempts to explore what students prefer regarding how peer tutoring can be conducted (face-to-face or online) and regarding introducing peer tutoring formally in the education system. However, the data were gathered from one university in Jordan; as such, this could limit the generalizability of the findings. Nevertheless, future studies are recommended to collect data from different universities to assure the reliability of the results. Furthermore, more studies are required to examine, quantitatively, the relationship between peer tutoring and students' academic achievement such as their grades. One of the significant practical recommendations of this study is to develop an app or website for peer tutoring that allows tutors to offer their services in different fields and enable tutees to search for any topic they need. This can be an entrepreneur project.

5 Conclusion

This study tried to explore the perspective of accounting students about peer tutoring and its impact on their academic performance. A total of 763 usable responses were obtained. The findings demonstrated that peer tutoring is perceived to enhance students' academic achievement and their scientific and cognitive levels. Moreover, peer tutoring was considered an enjoyable activity, and the majority of the participants prefer to have it face to face, not online. Moreover, interesting support was found to the idea of introducing peer tutoring formally in the higher education system. These and many other results contribute to the discussion on the importance of peer tutoring in higher education. Furthermore, this study shed light on the importance of developing strategies and policies that facilitate the implementation of peer tutoring, particularly amongst accounting students. This study is responding to various calls for more studies on peer tutoring, especially in the accounting field. Indeed, this research is amongst the first to focus on the concept of peer tutoring amongst accounting students in Jordan. However, this work is expected to have several limitations. One of the limitations is related to the research context which can limit the generalizability of the study as all of the participated students were from the same university. This means that the results have to be interpreted with caution. Therefore, future research is recommended to collect data from a wider population. This study provides practical recommendations for students or interested people to develop an app for peer tutoring that helps both tutors and tutees arrange peer tutoring events and share knowledge.

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Re-imagining the Futures of University: Foresight for Higher Education Using Innovation Labs Learning Space

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Abstract. Motivated by the foresight studies and scenario building using team learning and collaboration, this study explores the possibilities of applying Lego® Serious Play™ for framing different models of the future university based on collaboration among stakeholders in innovation laboratories. This paper draws on theoretical insights on scenario building and foresights techniques to re-imagine the future of higher education. Findings from the four workshops show a set of models of the future university. Representations focus on business models, open innovation, and delivery of on-demand learning in the digital era. The study concludes by outlining policy implications for education in GCC.

Keywords: Higher education · Foresights · Education policy · Smart university · GCC

1 Introduction

Shaped by mega trends like digital transformation and globalization, universities are faced with imperatives to adapt to new normal post Covid-19. This implies innovations in business model, strategy, operations, and processes (Al-Jayyousi 2017). The key characteristics of future higher education are viewed to founded on co-creation, collaboration with industry, project-based and cross-disciplinary. Institutional inertia in higher education institutions may limit organizational innovation and possibilities to develop new models for learning. Many oorganisations attempted to provide a space for creativity and imagination using 'LEGO serious play (LSP)' simulations (Roos et al. 2004; Statler et al. 2009), which fosters foresight capability and organisational learning (Al-Jayyousi and Durugbo 2020). Using innovation lab tools like LEGO enables participants to overcome institutional constraints and think of systems and business models about future scenarios by harnessing imagination and team learning (James 2013). LEGO has many applications in management and simulations in global businesses like eBay, Google, Ikea, and Nokian (Prahalad and Ramaswamy 2004, 2003) and innovation laboratories (Fecher et al. 2020; Lewis and Moultrie 2005) offer a learning space for re-imagining business processes and pathways for the future. This paper intends to address a research

gap in foresight studies by shedding light on collaboration and team work to develop future scenarios.

The purpose of this study is to explore the possibilities of harnessing LSP for foresight studies within a learning space in innovation laboratories. Using scenario building and case study approach, this paper presents insights from a LSP collaboration workshop in the innovation laboratory of the Arabian Gulf University, Bahrain. The relevance of LSP lies in the use of visualizations, team learning, metaphor, imagination, model building, and artefacts that foster learning and creativity (Herbert and Herrmann 2018). The methodology adopted to design future scenarios was based on facilitated dialogue, simulation, scenario building and visualization. Four workshops were conducted with several target groups at AGU during November – December 2021 for academic staff, students, public sector, and private sector to re-imagine the future of university.

This study is insightful since it uses innovative tools to build scenarios using facilitated emergence approach by using team learning and model building using metaphors and imagination (Al-Jayyousi and Durugbo 2020). Consistent with recent studies, this paper adopts LSP as a tool for imagination to shape future scenarios (James 2013). However, the intent of this research lies in articulating foresight studies through team participation which augments experiential learning (James 2013), and innovation education (Bulmer 2011; Dann 2018; Zenk et al. 2018).

The structure for the paper is as follows. First, a theoretical background highlights the main literature on innovation laboratories and models for future universities. Next, the article outlines the case methodology and main findings. Finally, the article discusses the policy implications for higher education institutions, and future research agenda.

2 Theoretical Background

This section presents an overview of foresight and literature on innovation laboratories, future models of university, and serious play as the setting for this research.

a. Innovation laboratories and foresight
   The innovation laboratory concept provides an interactive learning and reflection space for addressing policy and systemic problems at national or global level (Muniappan and Heinrichs, 2015; Welch et al. 2017) or specific process and operation problems (Lewis and Moultrie 2005). Conceptually, innovation laboratories are designed to facilitate innovation processes (Fecher et al. 2020; Al-Jayyousi and Durugbo 2020, Gryszkiewicz et al. 2016; Memon et al. 2018). Practically, innovation labs provide a space for fostering innovation through teamwork and collaboration, supported by toolkits (Carstensen and Bason 2012; Sonea 2016).

   Innovation laboratories facilitate interaction and combination of tacit and explicit knowledge through communication (James 2015, 2013; McCusker 2014; Tuomi et al. 2020; Zenk et al. 2018). Serious play offers a platform for team leaning and collaboration in re-imagining the future constructs of systems and processes through forming shared meaning (Roos and Victor 1999).

   Serious play involves metacognitive learning skills through integrating cognitive and social dimensions of experience (Roos et al. 2004) by using metaphors, stories, and analogies and by harnessing mind-hand collaboration (Heikkinen and Nemilentsev 2014; Hadida 2013; McCusker 2014). Building scenarios in the innovation lab

using LSP is founded on active and experiential learning (Bulmer 2011; Peabody and Noyes 2017; Statler and Oliver 2008), storytelling and constructivism (Papert 1993; Roos and Victor 2018) using learning by doing approach (Bulmer 2011; Frick et al. 2014; Lotts 2016; Barton and James 2017). This study employs LSP to develop different scenarios for models of the future university.

b. Disruptions and models for the future of university

The vision of universities had changed due to disruptions in technology and the emergence of new business models of online learning (Mbombo and Cavus 2021). Hence, universities need to incorporate new strategy and approach to adopt smart information technology such as artificial intelligence, internet of things, big data, and cloud computing to ensure quality and relevant education. This change requires new governance models in higher education and team learning (Rico-Bautista et al. 2021). Some specific examples of technology adoption in learning include learning technologies like smart boards, smart screens and wireless internet access from any-where (Tikhomirov and Dneprovskaya 2015) or the adoption of Internet of Things for smart Universities model in higher education (Adel 2020; Gunawardena 2017). However, smart University applications will influence the educational model, learning process, sharing knowledge, interactions between students and their academic staff and with the outside world (Rico-Bautista et al. 2021; Rico-Bautista et al. 2020). Smart University entails systemic changes in mindsets and culture including pedagogy, technology, governance, and business models (Akhrif et al. 2019a).

The next section presents the LSP collaboration workshop methodology followed by main findings.

3 Research Methodology

This study applies an inductive case study design using facilitated LSP workshops and team learning for foresight studies. The inductive approach (Hamel et al. 1993) which begins with observations emphasises the role of context to reveal meaning and develop future scenarios. Workshops were facilitated to set the context for framing possible scenarios based on analogy and metaphors (McCusker 2014; Statler and Oliver 2008). Table 1 compares the proposed collaboration workshop with other models for simulation and scenario workshops inspired by LSP. The procedure adopted for this study is based on a process of facilitated learning (Peabody 2015; Schulz et al. 2015).

The case study takes place during a four-day LSP collaboration workshops within the innovation laboratory of the Arabian Gulf University (AGU) in Bahrain. AGU is a research university that supports excellence in education and innovation. Inaugurated in September 2019, the innovation laboratory offers a learning space for co-creation and cross-fertilization of ideas, using design thinking and policy innovation. The case study focuses on harnessing LSP collaboration and team learning workshop with multiple groups to re-imagine the future university.

This study conducted four LSP workshops each one involves 15 participants in 3 groups focusing on global digital university model (Scenario 1), community university model (Scenario 2) and corporate university model (Scenario 3). Using Fig. 1, the case study frames these scenarios based on different narratives and value propositions. The research articulated the following questions:

Table 1. Comparison of workshops using Lego® Serious Play™

	Overview	Main focus	Sample references
Scenario workshops	Focus on foresight studies and strategy	Foresight analysis Scenario analysis	(Grienitz and Schmidt 2012; Schulz et al. 2015)
Problem solving workshops	Focus on process development, organizational design, and re-engineering	Design thinking Team learning System thinking	(McCusker 2014)
Reflective workshops	Focus on critical thinking for promoting experiential learning	Lateral thinking Stakeholder engagement	(Barton and James 2017; James 2015, 2013; Lotts 2016)
Co-creation workshops	Focus on constructivist and observational learning	Organisational learning Business process re-engineering	(Al-Jayyousi and Durugbo 2020)
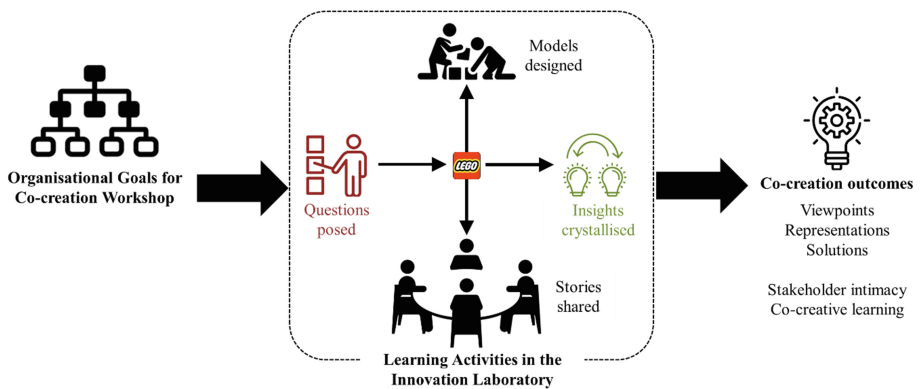
Fig. 1. Proposed Lego® Serious Play™ co-creation workshop process (Al-Jayyousi and Durugbo 2020)

- How do participants construct a shared model of the future?
- What forms of stories, analogies, and metaphors participants develop when building their models?

4 Findings

This section outlines the summary of each scenario and a comparison between the three envisioned models of the future university (digital, community, and corporate).

a. Group 1 scenario: global and digital university model
    In Group 1, the LSP scenario involved re-imagining a global and digital university between staff and graduate students in innovation management. The *goal* of the scenario was on building a virtual model of university centred on enhancing the efficiency for the knowledge management process associated with updating the University's web portal and the validation of information quality. To foster agile model of learning. This group constructed their model based on "cloud" and "ship" to convey on-demand leaning. Within this group, participants imagined, discussed, and negotiated value propositions and channels of delivery in the digital university. A key quote includes:

> *"AI and digital technology will change the way we learn and work in the future"*.

This group imagined the future university based on the model of Netflix and online delivery if service. The group developed a model that is based on virtual on-demand learning which is in line with competency-based model.
Group 2 scenario: community university model
    For Group 2, the LSP scenario for the future university is an "ecosystem" that is based on tacit knowledge and DIY model of learning. The participants were mainly from public sector and social services. This group of participants were keen to be responsive to market and social needs as reflected in the quotes below. In view of this purpose, the participants constructed a decentralized DIY model of learning that is based on peer-to-peer learning. Issues related to certification and accreditation was raised among this groups. Discussions within the group showed team learning and foresight capability using LEGO. The main *viewpoint* of the group was reflected in their quotes below where a community university is viewed as a "rainforest" or an "ecosystem" with a focus on PBL, action research, user-driven and frugal innovation. The key quote that captures the main themes and concepts of this scenario:

> *"I see the future university as one with no lectures, no classrooms, no majors, no departments"*

Key messages under this scenario entail a set of principles; i.e., universities must quickly adapt to be relevant and offer public value in a changing world" and be open, smart, agile and entrepreneurial through new offerings, marketing, and branding. Future university will allow students to collaborate to co-create value and meaning to pressing global problems.
Group 3 scenario: corporate university model
    For Group 3, the LSP scenario for re-imagining the future university included AGU staff and private sector. The *goal* for the scenario was to build a model that responds to corporate needs based on competencies. This group applied design thinking to construct a user-driven model based on sensemaking and empathy to ensure adaptive learning and data-driven innovation.
    The emerging concepts of the corporate university model is underpinned by the notion of university-industry collaboration with a focus on preparing students for future

jobs by embracing lifelong learning and interdisciplinary action research as illustrated in the quote from participants

> *"There is a pressure on university to deliver greater social impact and form strategic alliances and partnerships".*

Key messages under this scenario entail a set of principles, i.e., universities must form strategic alliances to foster open innovation and project-based learning. This scenario views the future university as an entrepreneurial one with new offerings and new value proposition.

Comparison of case scenarios

The following section presents a comparison between the various models of envisioned future universities as shown in Table 2.

Table 2. Comparison of case scenarios of the foresight workshops based on Lego® Serious Play™

	Group 1	Group 2	Group 3
Goal	Fostering a global digital university model	Developing a community university model	Developing a corporate university model
Viewpoints	On demand learning, lifelong learning	Adopting DIY model of learning	Fostering competency-based learning; professional and executive learning
Model characteristics	Hybrid learning; incremental and modular innovation	Business model innovation	Data-driven innovation; market-let innovation
Challenges of current systems	• Limited interaction and reflective learning • Focus on teacher-led learning • Offerings are time-bound	• Certification is required for job market • Accreditation from third-party • Fees and cost can be a limiting factor	• Changes in core competencies • Time commitment to lifelong learning • New requirements for future jobs
Co-creators	Graduate students and academic staff in medicine and innovation	Public sector staff, Support and Administration Staff	Private sector staff, graduate students, academic staff
Locus of representation	Delivery structures	Users' representation	Client representation

<div align="right">(continued)</div>

Table 2. (*continued*)

	Group 1	Group 2	Group 3
Focus of solution	• Providing flexible mode of learning • Harnessing digital platforms • Using open sources and Problem-based learning	• Experiential learning • Action learning • Problem-based learning	• Design thinking approach • Project-based • Adaptive learning
Innovation type and strategic direction	• Incremental management • ICT-driven innovation	• Frugal innovation • Design-driven innovation	• Disruptive technological innovation • Business model innovation
Group basis for scenario planning	Integrated LSP designs with discussions and participants collaborated to build scenarios using Lego® constructs	Visioning and imagining new business models and processes of learning	Empathy mapping and analysis of market needs
Metaphoric synopsis of scenario	Learning on the cloud 24/7 delivery on-demand Learning as a fast-food restaurant or Netflix	Learning as a rainforest or ecosystem	Leaning as a ship Learning as a journey

Using the features of constructionist capabilities of Lego® bricks, the LSP workshops enable participants to co-create a shared scenario of the future through effective communication and team learning. The digital era is enabling a new model of the future university characterized by a virtual and a "platform" university. Synergy between firms and society are critical to shape a new social contract for new leaning which will evolve online communities who value hands- on and skills for life. The following section the discussion followed by conclusions of the study.

5   Conclusions

Innovation labs provide a learning space for re-imagining the future of university. This study shows the application of LEGO simulation for foresight studies. Three models of future university were co-created, i.e., digital, community, and corporate. It is expected that digital university model is likely to shape a new paradigm of the future university. However, virtual learning must be certified and accredited. The corporate university model will be underpinned by seamless connection between industry and university

with a focus on competencies and lifelong learning. The community university model will focus on action learning and project-based learning. The future of education is learning and will be beyond institutional walls. In sum, university is about creation of ideas, solutions, and worldviews. Re-imagining the future of higher education implies exploration of the social transformation of a society, economy, and technology. Limitation of this study include a limited sample size and using a cases study approach.

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Factors Influencing University Graduates' Intentions to Become Entrepreneurs: Case from Bahrain

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Abstract. Entrepreneurial intention is the desire to engage in entrepreneurship. The focus of this paper is on university student entrepreneurial intention. The objective of this paper is to examine the university's role, personal attitude, subjective norms, and role models influencing university students' entrepreneurial intention. 361 questionnaires were distributed to students from public and private universities in Bahrain. Cronbach's Alpha Reliability, Pearson Correlation Coefficient, and Multiple Linear Regression was conducted to investigate the relationship between university role, personal attitude, subjective norms, and role models) with the dependent variable (i.e. entrepreneurial intention). An Independent T-test done on personal characteristics such as gender and participation in entrepreneurship courses was also done. Findings indicate that all independent variables had a significant relationship with entrepreneurial intentions. Subjective norms had the highest significance variation about entrepreneurial intentions that indicate that socialization with friends or family pressure can be a source of social pressure for respondents to have intentions towards setting up a business. This paper confirms previous empirical studies in entrepreneurship. Implications to policymakers and universities are that entrepreneurship can be taught as a course to students but with a practical, hands-on approach such as allowing students to manage kiosks to sell products on university graduation days. Limitations of the study include a cross-sectional design and a small sample. Further studies include conducting comparison studies with other GCC countries, longitudinal studies, and other factors to be investigated such as perceived risk and using a probability sampling method.

Keywords: Subjective norms · University students · Entrepreneurial intention · Role models · Attitudes

1 Introduction

This paper is to eexploresthe entrepreneurial intention of university students in the Kingdom of Bahrain. Moreover, this paper contributes to the debate of entrepreneurship's

participation in the national economy. This is especially pertinent as a youth in Bahrain can be entrepreneurs as an avenue to stimulate economic growth and assist the country to become a developed nation by the year 2030. However, not all higher education students consider being self-employed as a career option. This paper gives insights for both undergraduates and postgraduates students on possible future career paths. Policymakers in Bahrain can also gain perspectives on the state of entrepreneurship education to encourage entrepreneurial intentions as providing an alternative solution to the issue of unemployment. This could drive to reduce the rate of unemployment in the country. Furthermore, provide employability potential to the working population which ultimately will lead to better living quality and standards in the country. University administrators and academics will gain some indication on the appropriateness of entrepreneurial courses and training programs promoted to higher education students towards starting up their businesses. The promotion of entrepreneurial culture in the Kingdom of Bahrain must be emphasized as the universities in the country produce graduates every year that needs to be employed. However, the unemployment rate has been slowly climbing in Bahrain as this means unemployed graduates are rising each year. For example, the total number of job seekers with a university degree registered in the Civil Services Bureau numbered 17,404 (Alnufaie 2020) comprising 15,046 bachelor holders and 2038 diploma holders who are looking for jobs (Alnufaie 2020). Unemployment had increased from 3.50% in the year 2015 to 4.30% in the year 2016 (Ceicdata 2016). Meanwhile, a recent survey by the accounting firm, Ernst & Young indicated that 70% of young Bahrainis are interested to start up their own business, which is considered a huge percentage in comparison to other countries in the Gulf region (Aboukhasiwan 2017). Therefore, since being self-employed and setting up own businesses is a route to decrease unemployment in the country, there should be more empirical studies done of universities' role in promoting entrepreneurship, graduate attitudes, subjective norms, and role models on entrepreneurial intentions of higher education students in the country. The next section reviews the literature on entrepreneurship. A Subsection Sample.

2 Literature Review

An entrepreneur can be defined as an individual who is willing to take risk of turning a vision into a successful business venture. Another definition includes the creation of new organizations, wealth creation, and ownership (Hisrich and Kearney 2014). An entrepreneur is also defined as someone who can be innovative, risk-taking, and market stabilizing force to start, own, manage and sustain a small venture (Vukenkeng and Moti 2015). Entrepreneurship is a field of study well-researched but the entrepreneurial intention is considered to be less known. However, entrepreneurial intention as a concept is intended to fill the gap in entrepreneurial behavior prediction models created in the field of psychology (Jeger et al. 2014). Having an entrepreneurship mentality is based on the motivation and capacity of a person to realize an opportunity to achieve financial and economic success. Nowadays, entrepreneurship is becoming a relevant tool to boost economic growth and development in different regional and national economies around the world. Entrepreneurs are considered the fundamental pillar of industries with the creation of new and innovative business ideas. Currently, larger organizations find that

they can no longer create additional job positions as many larger organizations have to downsize their workforce. This has consequently has attributed to the level of unemployment (Ahmed and Khan 2016). Meanwhile, new startup businesses had become an alternative option for many individuals to become self-employed. This has assisted in decreasing unemployment and thus, improves economic development. In other words, entrepreneurship as in starting new businesses is perceived as one of the solutions to a rising unemployment rate (Shamsudin et al. 2017). Many studies have found that there is a strong and positive correlation between entrepreneurship and economic development in terms of creating job opportunities and motivating creativity and innovation such as transforming technologies, knowledge, and skills (Fantaye 2019). Entrepreneurs are seen as the driving force for economic development, job opportunities, and competitiveness in the market (Fantaye 2019). Many people desire to become an entrepreneur, but only a few succeed (Chengappa 2018). For example, one study showed that a successful entrepreneur needs to have organizing skills categorized under technical skills, and these skills can be obtained by engaging in impactful entrepreneurial education (Stamboulis and Barlas 2014). Therefore, the contention here is that entrepreneurial education will lead to improved entrepreneurship. Thus, education in entrepreneurship should in return give rise to an improved number of entrepreneurs being borne. Another study in Cameroon indicates the main reason for the high unemployment rate is correlated to an increased number of students' preference for a paid job position (for example from the year 2011–2016 this was 11.5% to 15.3% respectively) Therefore, to be self-employed is the best attractive survival strategy for unemployed young graduates (Israr 2018). Furthermore, studies indicate that when university students face difficulties in getting jobs, both self-employment and entrepreneurship are considered to be the best solution for being unemployed to escape poverty among youths (Neneh 2014). Many institutions offer entrepreneurship courses to provide entrepreneurial skills among the students so that graduates can be self-employed (Katundu and Gabagambi 2016). Entrepreneurship education should be beneficial to university students to develop their businesses and to encourage students to think outside the box and develop creativity. Historically, the Kingdom of Bahrain had an entrepreneurial culture whereby the country had many traders in many small businesses. However, with the discovery of oil in the 1930s, the local population's lifestyle has changed as the national economy has become more dependent on the oil and gas industry (Bapco Website 2022). Entrepreneurship has played an important role in providing jobs, one estimate indicates that businesses employ 421,257 employees in Bahrain (Aboukhasiwan 2017). The government has made considerable efforts to encourage entrepreneurship as one way to diversify the economy. One such initiative is to promote entrepreneurial careers as desirable job options that could promise advantages, such as creating sufficient job opportunities through encouraging Bahraini citizens to establish small and medium enterprises (Tamkeen 2019). Bahrain government had established several institutional frameworks to create an ecosystem conducive for new entrepreneurs and small and medium enterprise (SMEs) growth, as currently small and medium enterprises (SMEs) contribute 30% to Bahrain's GDP, and the government is looking to increase that percentage in the following years (Almajdoub 2018). For that reason, many governmental, semi-governmental, and private institutions are supporting new and young entrepreneurs in the country. For example, the Bahrain Development

Bank provides support by providing funding to entrepreneurs with an idea but without a business plan to start up the new business. Furthermore, Tamkeen, a semi-governmental agency provides over 140,000 individuals and businesses training courses (Almajdoub 2018). One study in Qatar indicated that universities play a positive role in shaping Arab students from higher education institutions about entrepreneurial attitudes and orientations towards entrepreneurship (Albakri and Mehrez 2017). For example, academic programs with entrepreneurship being taught as a subject have proliferated at universities with huge resource allocations. Therefore, universities need to create and foster an innovative climate among students with entrepreneurship playing a strategic role. Entrepreneurship studies show that other factors such as family background and subjective norms strongly influence entrepreneurial intentions (Krithika and Venkatachalam 2014), attitude, self-efficacy, and inspiring role models (Nowinski and Haddoud 2018) and motivation (Herdjiono et al. 2017). These studies have raised the question of motivational and influential factors for university students to have entrepreneurial intentions on starting their businesses. This paper examines the influence of personal attitude and subjective norms on higher education students' entrepreneurial intentions. The Theory of reasoned action was adopted. TRA predicts that people are usually thoughtful and will consider the executing and the impact of their actions before deciding whether to adopt or perform a certain behavior (Ajzen and Fishbein 1975). This theory further suggests that behaviors are under voluntary control and therefore they are predictable from intention (Martinez and Lewis 2016). Moreover, the Theory of reasoned action deals with the prediction, rather than the outcome of the behavior (Hagger 2019). In this theory the behavior is specified by behavioral intentions, therefore reducing the predictability of the theory to situations in which intention and behavior are strongly correlated (Hagger 2019). Criticisms of this theory are that measuring intention and subsequent behavior simultaneously fails to guarantee a true test of the theory model power (Hagger 2019). Therefore, suggested that for the Theory of reasoned action to be tested, actual behavior should be measured (Nguyen et al. 2018). Therefore, the hypothesis of this paper is as below based on the conceptual model.

H1 There is a positive relationship between a university's role and entrepreneurial intention.

H2 There is a positive relationship between personal attitudes and entrepreneurial intention.

H3 There is a positive relationship between subjective norms and entrepreneurial intention.

H4 There is a positive relationship between role models and entrepreneurial intention.

3 Methodology

Statistics of Bahrain universities show 6000 students were enrolled for the academic year 2017/2018 6000 (Agency 2019). Therefore, a sample size of 361 is determined by formulae (Krejcie and Morgan 1970). Then questionnaires were distributed to the targeted sample who graduated from both public and private universities in Bahrain.

3.1 Results

Table 1 shows the demographic profile of respondents. From the respondent's profile, 59.8% are male respondents while 40.2% are female respondents. 28.2% of respondents are above 30 years while 72.8% are below 30 years old. In terms of qualification, 75.1%

Table 1. Demographic profile of respondents

Items	Freq.	%		Freq.	%
Gender			Name of University		
Male	216	59.8	Ahlia Uni[a]	13	3.6
Female	145	40.2	AMA[b]	14	3.9
Age			ASU[c]	12	3.3
18–23	75	20.8	AOU[d]	140	38.8
24–29	184	51.0	BTI[e]	5	1.4
30–36	78	21.6	BUB[f]	5	1.4
37+	24	6.6	Delmon Uni[g]	5	1.4
Qualification			Kingdom Uni[h]	15	4.1
Diploma	57	15.8	RCS[i]	1	3
Bachelor	271	75.1	RUW[j]	3	0.8
Master	29	8.0	UOB	148	41
PhD	4	1.1			
Occupation			Work Experience		
Student	68	18.8	0–5 years	202	56.0
Employee	237	65.7	5–10 years	61	16.9
Employer	34	9.7	10 years+	38	10.5
Unemployed	22	6.1	None	60	16.6
Participation in entrepreneurship courses					
Yes	67	18.6			
No	294	81.4			

[a] Ahliya University.
[b] AMA University.
[c] Applied Science University.
[d] Arab Open University.
[e] Bahrain Training Institue.
[f] British University of Bahrain.
[g] Delmon University.
[h] Kingdom University.
[i] Royal College of Surgeons.
[j] Royal University of Women.
$N = 361$.

are degree holders, 15.8% are Diploma holders and 9.1% have postgraduate qualifications. Therefore, respondents are relatively young, predominantly males, and have a bachelor's degree. In terms of occupation, 65.7% of respondents are employees, while 18.8% are students and only 9.7% are employers themselves. The remainder of 6.1% of respondents is unemployed. In terms of work experience, from Table 1, 56% have 0–5 years of work experience which tallies with respondent's age of being relatively young. Interestingly, respondents' non-participation in entrepreneurship courses at university was 81.4% and those who have participated in any entrepreneurship courses at university were 18.6% of total respondents. This may indicate that entrepreneurship courses are not popular at universities, as the majority of the respondents have not participated in any entrepreneurship courses. Furthermore, this can indicate that universities may not encourage or promote students to take entrepreneurship courses and may not have an entrepreneurship-friendly environment to foster an entrepreneurial culture on campus.

A reliability test was done as summarized for all variables in the study as in Table 2 below:

Table 2. Summary of reliability (α)

N	Construct	Cronbach's alpha	Number of items	Number of respondents
1	University role (IDV)	0.721	5	361
2	Personal attitude (IDV)	0.766	5	361
3	Subjective norms (IDV)	0.779	5	361
4	Role models (IDV)	0.708	5	361
5	Entrepreneurial intention (DV)	0.700	5	361

3.2 T-test: Gender Differences and Entrepreneurial Intentions

Table 3 below shows that the t-value to report is 1.198. Besides that, the Sig. under the Levene test for equality of variance is higher than the alpha value of 0.05. By that, it shows the variances are equal. P-value under equal variance assumed should be reported. P-value is 0.232 which is way bigger than the alpha value of 0.05. Therefore, indicates no significant differences between males and females in their intention to become entrepreneurs.

Table 4 shows that the t-value reported is 9.293. Besides that, the Sig. under the Levene test for equality of variance is much lower than the alpha value of 0.05. By that, it shows the variances are not equal. The p-value under equal variance assumed should be reported. The p-value is 0.001 which is way smaller than the alpha value of 0.05. Therefore, there is a significant difference between participation and non-participation in entrepreneurship courses in the university and their intention to become entrepreneurs.

Table 3. T-test result (Gender and entrepreneurial Intention)

Gender	N	Mean	Std. Deviation	Std. Error mean
Male	216	22.3843	1.72682	0.11749
Female	145	22.1379	2.16545	0.17983
			Levene's test for equality of variance	
			F	Sig.
EI equal variances assumed			4.584	0.33
Equal variances not assumed				

	t	df	Sig. (2-tailed)	Mean difference
			t-test for equality of means	
EI equal variances assumed	1.198	359	0.232	0.24633
Equal variances not assumed	1.147	261.292	0.253	0.24633

Table 4. T-test result Participation in entrepreneurship courses and entrepreneurial intention

Participated in entrepreneurship courses in the university	N	Mean	Std. Deviation	Std. Error mean
EI Yes	67	23.0149	1.48214	0.18107
No	294	22.1190	1.96630	0.11468
	Levene's test for equality of variance			
	F	Sig.		
EI equal variances assumed	9.293	0.002		
Equal variances not assumed				

	t	df	Sig. (2-tailed)	Mean difference
		t-test for equality of means		
EI equal variances assumed	3.508	359	0.001	0.89588
Equal variances not assumed	4.292	125.031	0.000	0.89588

3.3   Pearson Correlations

Pearson Correlation is applied to show the direction and significance between the dependent variable Entrepreneurial intention (DV) and independent variables of university role, personal attitude, subjective norms, and role models. Table 5 below shows that there is a significant positive relationship between all dependent variables to the independent variable at a significant level of 0.01 (p<0.01).

Table 5. Pearson correlation analysis

Spearman's rho		Entrepreneurial intention (DV)
University role toward entrepreneurship (IDV1)	Correlation coefficient	0.671**
	Sig. (2-tailed)	0.000
	N	361
Personal attitude (IDV2)	Correlation coefficient	0.713**
	Sig. (2-tailed)	0.000
	N	361
Subjective norms (IDV3)	Correlation coefficient	0.715**
	Sig. (2-tailed)	**0.000**
	N	361
Role models (IDV4)	Correlation coefficient	0.722**
	Sig. (2-tailed)	0.000
	N	361
Entrepreneurial intention (DV)	Correlation coefficient	1
	Sig. (2-tailed)	
	N	361

** Correlation is significant at the level 0.01 level (2-tailed).

3.4   ANOVA

ANOVA was used by using a simple direct linear regression. The results of the regression are outlined in Table 6 below:

As for Table 6, R^2 for the model is 0.626 which means that 62.6% of the variation dependent variable (entrepreneurial intention) can be explained by the four independent variables (university role, student attitude, subjective norms, and role models). According to Table 1, the F value is 65.502 with a p-value $0.000 < 0.05$ at significance level. Based on that, the overall regression model for these four predictors has significantly explained the variation in entrepreneurial intention.

According to the Table 7, the regression equation for the entrepreneurial intention (EI) is:

$$EI = 11.272 + 0.146\,UTE + 0.100\,GA + 0.182\,SN + 0.104\,RM$$

Table 6. Model statistical analysis (N = 361)

Model R	R	R^2	Adjusted R square	Std. the error of the estimate
1	0.786[a]	0.626	0.616	2.48362

[a]The predictors: (Constant), University role toward entrepreneurship, Personal Attitude, Subjective Norms, and Role models.
[b]Dependent variable: Entrepreneurial Intention.

Table 7. Summary of regression coefficients

Model	Unstandardized coefficients		Standardized coefficients		
	Beta	Std. error	Beta	t	sig
Constant	11.272	1.126		10.013	0.000
University role toward entrepreneurship (UTE)	0.146	0.042	0.167	3.477	0.001
Personal attitude (GA)	0.100	0.046	0.124	2.186	0.029
Subjective norms (SN)	0.182	0.041	0.256	4.443	0.000
Role models (RM)	0.104	0.049	0.120	2.104	0.036

As based on the equation above, university role toward entrepreneurship, personal attitudes, subjective norms, and role models have a positive relationship with entrepreneurial intention. Subjective norms contribute the highest to the variation of the entrepreneurial intention, as every unit increases in subjective norms, it will lead to an increase of a total of 0.182 units of entrepreneurial intention provided other independent variables remain constant. While the second-highest predictor is university role toward entrepreneurship (0.146), followed by role models (0.104), and followed by personal attitude (0.100).

4 Discussion

The results show a significant relationship between university roles, student attitudes, and role models with entrepreneurial intention. However, these findings are useful in light of implications for theory and managers. The relationship between university role and entrepreneurial intention is significant implying that this factor is important especially to policymakers at the Ministry of Education (MOE) and Higher Education Council (HEC) in the Kingdom of Bahrain. Therefore, the university has a role to play to establish and introduce formal entrepreneurial courses at universities in the country and to encourage a better entrepreneurial environment that facilitates new ventures. When higher education students are equipped with the appropriate and right knowledge about entrepreneurship, this might encourage students to be potential entrepreneurs. However, to facilitate new venture creation for university students, the government has

a role to play in the continuous provision of funds and supportive infrastructures for university graduates to remove impediments to their entrepreneurial career path. Furthermore, the findings suggest that universities in Bahrain should be involved in providing entrepreneurship courses at all levels which will assist to improve the awareness of students towards entrepreneurship. This could affect their favorableness of attitude thus, enhancing subjective norms. The findings of this study also suggest that program instructors at universities design and improve the structure of entrepreneurship courses offered, such as offering courses that are oriented towards being proactive, creative thinking, and pragmatic (hands-on) approach to sustain students' interest in venturing and setting up their businesses. Another suggestion is that universities should organize entrepreneurial-related activities and workshops that could improve university students' attitudes towards setting up their businesses. Such entrepreneurial activities on campus should be encouraged such as managing university bookshops or forming student cooperatives that have stalls or kiosks selling products at university graduation ceremony days or special exhibition days on campus. This gives opportunities for students to be involved in managing their businesses whilst giving them much-needed exposure in business giving students a "taste" of entrepreneurship which could improve their future intentions toward entrepreneurship. Finally, this paper attempts to provide in theory to scholars and researchers with empirical evidence related to the entrepreneurial intentions among higher education students in Bahrain. The findings confirm the Theory of Reason Action (TRA) as entrepreneurial intention can be explained by attitudes and subjective norms. As such the conceptual framework of this paper, adds to the existing literature in entrepreneurship studies.

5   Limitations and Further Studies

Limitations of the study include a small sample size (n = 316). A cross-sectional design approach was utilized which could mean that a person's intentions might change over time. As such, longitudinal studies are recommended to measure intentions. Other factors such as perceived risk could also affect entrepreneurial intentions. Comparative studies among students in GCC countries might yield different results.

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Enhancing the Creativity of Employees in the Education Sector During COVID-19 Pandemic: The Role of Rewards

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Abstract. Employees' creativity in the education sector has never been more important than the past two years when the global coronavirus disease 2019 (COVID-19) pandemic swept the world. This paper presents a study on employees' creativity in primary public schools in the Kingdom of Bahrain. The study sheds the light on the role of extrinsic rewards in enhancing employees' creativity. The findings suggest that extrinsic rewards hinder employees' creativity for employees' who are mastery goal-oriented and for employees who have an internal locus and external locus of control. Furthermore, this research finds that the mediating effect of intrinsic motivation and the moderating effect of performance orientation are both insignificant. This study provides clear conditions leading to employees' creativity; hence it provides multiple theoretical and practical implications that worth consideration.

Keywords: Creativity · Extrinsic rewards · Intrinsic motivation · Locus of control · Goal orientations

1 Introduction

Employees' creativity during hardships and pandemics such as (COVID-19) is vital for organizations to survive, become stronger and more resilient (Hölzle et al., 2020). Enhancing employees' creativity is of growing importance in today's challenging global business environment, organizations from different industries pay huge effort and budget to enhance employees' creativity to achieve long term success (Anderson et al., 2014). According to the Organization for Economic Cooperation and Development, employees' creativity has an essential role in the economic development of a country (OECD, 2010). Employee creativity is important for many reasons, not least because according to the literature, creativity (idea generation) is the first step for innovation (idea implementation) (Amabile, 1988). From this vein, this research paper aims to understand the conditions that lead to employees' creativity, namely, it addresses the impact of extrinsic rewards on employees' creativity.

In this paper, the light will be shed on employees' creativity in the education sector. As we all experienced, nowadays, physical education has shifted to online education at almost all levels from primary to higher education. Online teaching shifted from luxury to compulsory. Consequently, the importance of employing creativity in the education sector is greatly elevated. Moreover, innovation in education is of particular importance due to the important role education has in creating a sustainable future (Serdyukov, 2017). The context of this research is the Kingdom of Bahrain, the innovation ranking for Bahrain has been declining in the past five years as indicated by the recent statistics published by the Global Innovation Index (GII) (2021) (down from 66th place in 2017 to 78th place in 2021). Bahrain's innovation ranking has fallen behind all other GCC countries except for Oman in 2020 and has fallen behind all other countries in 2021 with no exceptions. Furthermore, as can be seen in Table 1 below, Bahrain's global innovation index in education has fallen behind all GCC countries in 2021 except for Qatar. Moreover, the scarcity of studies addressing creativity in the education sector in the kingdom of Bahrain adds to the importance of conducting this study in the kingdom of Bahrain.

Table 1. GCC's global innovation index ranking in education

GCC country	Global innovation index ranking in (education)
UAE	61
Oman	44
Saudi Arabia	30
Bahrain	*81*
Kuwait	57
Qatar	94

Source: Adopted from the global innovation index report, 2021

Although researchers have made progress over the years to understand the complex relationship between rewards and employees' creativity (George and Zhou, 2002; Baer et al., 2003; Eisenberger and Aselage, 2009; Amabile and Pratt, 2016; Malik et al., 2015; Auger and Woodman, 2016; Malik et al., 2019), there remain important unsolved issues in the creativity research (Zhou and Shalley, 2003; Anderson et al., 2014; Malik and Butt, 2017). It is not clear whether rewards lead to enhancing or hindering employees' creativity (Amabile, 19966; Skinner, 1938). This raises the importance of studying critical moderators and mediators that have not been investigated before in the reward-creativity relationship, such as those associated with various personality traits (Anderson et al., 2014; Malik and Butt, 2017; Malik et al., 2019; Zhou and Shalley, 2003; Malik and Butt, 2017).

Based on the identified research gaps, the researcher investigated the relationship between rewards and employees 'creativity considering the role of intrinsic motivation as a mediator, and the role of goal orientations and locus of control as moderators. The empirical study was conducted in primary public girls' schools in the kingdom of Bahrain, where the researchers arrived at interesting findings. The research findings suggest that extrinsic rewards do not lead to employees' creativity as expected by practitioners and as proposed in the study hypothesis. However, it was found that extrinsic rewards lead to enhancing employees' intrinsic motivation. Moreover, this study provided clear conditions under-which extrinsic rewards lead to hindering employees' creativity. The findings of this study contribute to the body of knowledge on employees' creativity and provide a clear road map for practitioners.

The structure of this research paper is as follows. It first starts by a literature review that defines the research constructs addressing the reward-creativity relationship. Next, the developed conceptual model is presented highlighting the proposed mediator and moderators as well as the proposed hypotheses. It is then followed by the adopted research methodology. Finally, the outcome of the data analysis and the conclusion are presented.

2 Literature Review

The body of research on employees' creativity and work motivation has progressed substantially since 1986 when Porter and Lawler first conceptualized work motivation, and since the first creativity model was introduced by Amabile (1988). Scholars placed a great attention to this field given the importance of work motivation in fostering employees' creativity (Deci and Ryan, 1985; Amabile, 1996). Despite the scholarly progress and the results yielded thus far, the need for further advancement in this subject matter remains important to address the identified research gaps in the existing literature. In the following paragraphs, the research constructs will be clearly defined and prominent theories in the literature will be presented.

This study constitutes of seven constructs, namely, creativity, intrinsic and extrinsic motivation, mastery and performance goal orientations and internal and external locus of control. Creativity is defined in the literature as the production of original and useful ideas (Amabile, 1996). Porter and Lawler (1968) defined intrinsic motivation as the motivation to do an activity because it is interesting and gives spontaneous satisfaction (Porter and Lawler, 1968). Intrinsic motivation is also defined as the motivation to do an activity for its own sake and for enjoyment (Ryan and Deci, 2000). On the other hand, extrinsic motivation is defined as the motivation to do an activity for a separate consequent such as verbal or tangible rewards (Porter and Lawler, 1968). Goal orientations were defined in the literature as situated orientations for action in an achievement task (Dweck, 1986; Nicholls, 1984). Goal orientation theory focuses on why and how a person attempts to achieve a certain task and is divided into mastery goal orientation and performance goal orientation (Ames, 1992). Mastery-oriented individuals focus on learning, understanding and mastering skills (Kaplan and Maehr, 2007), whereas performance-oriented

individuals focus on demonstrating competence and creating an impression of high ability (Ames, 1992; Dweck, 1986). Locus of control theory is developed by Rotter (1966). It is a widely cited motivational theory that classifies individuals based on their perceptions of the rewards to internal and external locus of control. Individuals who believe that rewards are contingent upon their behaviour have what is called (an internal locus of control), while individuals who feel that rewards are controlled by external forces such as luck or fate, have what is called (an external locus of control) (Rotter, 1966).

3   Conceptual Framework

The proposed conceptual framework establishes the relationship between the following constructs: extrinsic rewards for creativity, intrinsic motivation for creativity, mastery goal orientation, performance goal orientation, internal locus of control, external locus of control, and employees' creativity. As can be seen in Fig. 1 below, extrinsic rewards for creativity is the independent variable, intrinsic motivation for creativity is the proposed mediator, goal orientations and locus of control are the proposed moderators, and employees' creativity is the dependant variable.
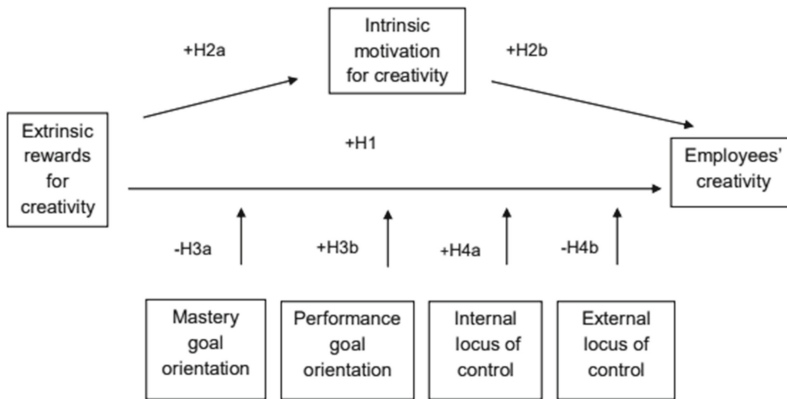
Fig. 1. Conceptual framework

4   Research Methodology

The adopted research methodology for this study is indifferent from the research methodology adopted by previous researchers investigating the reward-creativity relationship (Malik et al., 2015; Malik et al., 2019). A quantitative research methodology and a deductive research approach was considered in this research. Structural equation modelling (SEM) was used to analyse the relationship between the variables.

The data collection tool used in this study was a questionnaire. The questions of the research questionnaire were all adopted from previous research measuring the same constructs intended in this study (Rotter, 1966; George and Zhou, 2001; George and Zhou, 2002; Van Yperen and Janssen, 2002; Janssen and Van Yperen, 2004; Malik et al., 2015; Yoon et al., 2015a; Yoon et al., 2015b; Malik et al., 2019). This study comprises two sets of questionnaires, each having different sets of questions. One set of questionnaire was structured to be answered by employees and the other set of questionnaire was for their supervisors, and mainly included questions to measure employees' creative performance (George and Zhou, 2002).

The researcher collected primary data from employees working in primary public girls' schools in the Kingdom of Bahrain. The data was collected at a cross-sectional time dimension using a survey. Prior to conducting the main survey, a pilot testing was implemented to refine the questionnaire (Saunders et al., 2019). The main survey was conducted in February 2020. The researcher conducted several field visits to primary public girls' schools in the Kingdom of Bahrain to distribute and collect the questionnaires from the employees and their supervisors. In total, 150 questionnaires were distributed to employees out of whom 122 responses were received. From the 122 responses, only 102 responses were completed, which represents a completion rate of 83.6%. The responses received from supervisors were 105 complete responses, which represents 100% response rate and a 100% completion rate. The response rate for the employees' questionnaire was 81% and was 100% for the supervisor's questionnaire. This response rate is considered excellent for a delivery and collection questionnaire, which is generally expected to be between 30%–50% (Saunders et al., 2019).

5   Data Analysis and Discussion

In this research, the statistical software used to analyse the data was SPSS. A number of tests were conducted including Exploratory Factor Analysis (EFA), reliability and validity tests, path analysis, confirmatory factory analysis (CFA). Moreover, structural equation modelling (SEM) was used to statistically analyse the relationship between the variables and to clarify the theoretical rationale. The tool used to conduct SEM is Analysis of Moment Structure (AMOS).

The demographic questions included in the survey captured education and working experience as can be seen in the figures below. All the respondents where females since the study was conducted on primary public girls' schools in the kingdom of Bahrain, which comprises of only female employees (Fig. 2 and Fig. 3).
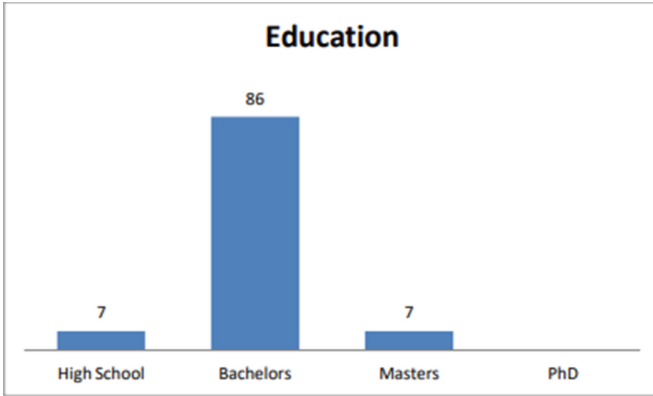
Fig. 2. The education of the respondents. Note: The label represents the frequency of occurrence, 100 employees responded to the demographic questions and only 2 did not respond
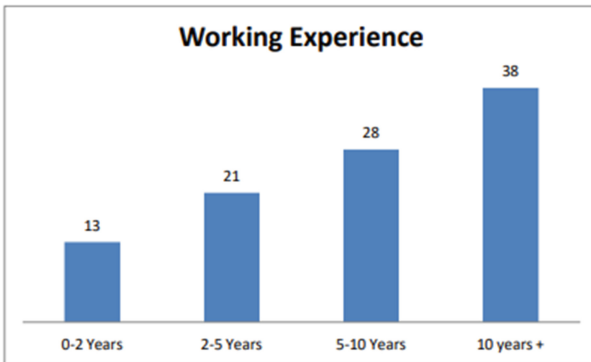
Fig. 3. The working experience of the respondents. Note: The label represents the frequency of occurrence, 100 employees responded to the demographic questions and only 2 did not respond

Reliability and validity tests were conducted to ensure the consistency and accuracy of the research instruments. As shown in Table 2 below. For the validity test, all constructs scored an acceptable Chronbach's alpha (above 0.7). As for the reliability test, the constructs scored in the inter-item correlation (between 0.3 and 0.8) and in the item to total correlation (greater than 0.5), which is considered acceptable (Robinson et al., 1991). Locus of control was not measured for reliability and validity; this is because of the nature of the construct. To measure internal and external locus of control, employees were given 10 pairs of questions and they had to choose one from each pair. Since internal and external locus of control were computed from the frequencies on a set of dichotomous items, they were not measured for reliability or validity and were not included in Table 2.

Table 2. Reliability and validity test results

No.	Construct	# of items	N	Chronbach's Alpha	Inter-item correlation (range)	Corrected Item-total correlation (range)
1	Employee creativity	3	105	0.891	0.654 to 0.790	0.748 to 0.857
2	Extrinsic rewards for creativity	5	102	0.851	0.443 to 0.680	0.617 to 0.743
3	Intrinsic Motivation	5	102	0.912	0.581 to 0.757	0.731 to 0.819
4	Performance goal orientation	6	102	0.886	0.367 to 0.713	0.634 to 0.741
5	Mastery goal orientation	8	102	0.898	0.378 to 0.748	0.600 to 0.731

After validating the developed conceptual model and conducting a path analysis, the researchers arrived at the below findings (Fig. 4).
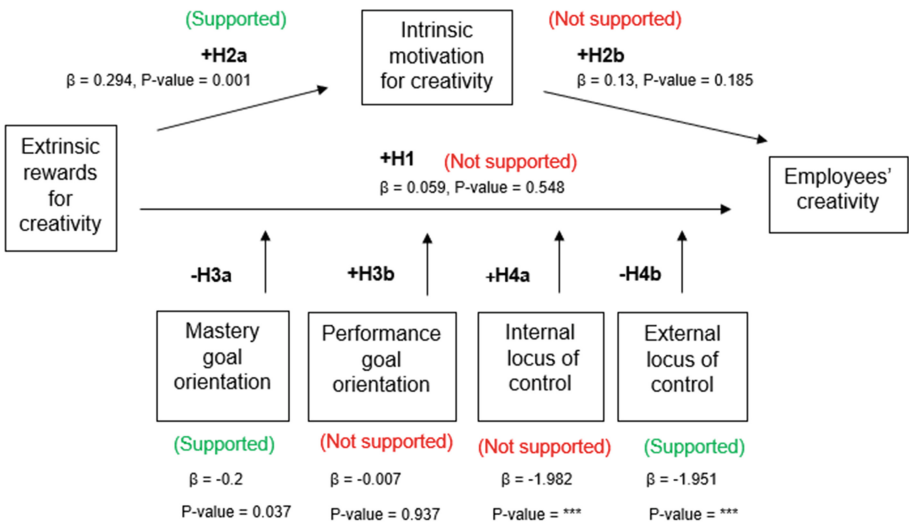
Fig. 4. Path analysis results on the conceptual framework

It was found that three hypotheses out of the seven hypotheses suggested for this research were supported. In detail, an extrinsic reward for creativity has a significant positive effect on intrinsic motivation for creativity. Moreover, there is a significant negative effect of extrinsic rewards for creativity on employees' creativity for employees having a mastery goal orientation. External locus of control also had a significant negative moderating effect in the relationship between extrinsic rewards for creativity and employees' creativity. On the other hand, four hypotheses were not supported. It was found that extrinsic rewards for creativity had a non-significant positive relationship with employees' creativity. Also, it was found that intrinsic motivation for creativity had a non-significant positive relationship with employees' creativity. Performance goal orientation had a non-significant negative moderating effect. Moreover, internal locus of

control, although having a significant moderating effect, did not support the hypothesis since the result was not within the hypothesized direction.

6 Conclusion

The findings of this research have provided multiple theoretical contribution to the existing literature and growing body of knowledge. First, this research was the first to examine the relationship between extrinsic rewards and employees' creativity for employees' working in primary public girls' school in the kingdom of Bahrain and in the context of a GCC country. This research is the first to investigate the moderating effect of mastery and performance goal orientations simultaneously in the relationship between extrinsic rewards and employees' creativity. Also, it is the first to investigate the moderating effect of internal and external locus of control in the same context. Moreover, this study found that extrinsic rewards for creativity helped to boost employees' intrinsic motivation. Furthermore, this study found that mastery goal orientation leads to hindering employees' creativity. Also, internal, and external locus of control negatively affected employees' creativity for employees working in primary public girls' schools in the Kingdom of Bahrain.

This study also provides a novel contribution to practitioners. The outcome of this research is expected to be especially useful for managers working in public educational sector. Practitioners should take note of the fact that providing extrinsic rewards for creativity is not enough to obtain employees' creative performance. It is confirmed by this research that employees with different personality characteristics perceive rewards differently and thus behave differently when they are rewarded. Moreover, based on the results of the personality dispositions, practitioners may consider adopting a selective rewarding approach.

Each research study has its limitations, and this research of course is not without limitations. The outcome of this research is context specific; it cannot be generalized beyond female schools since the sample of this research included only primary public girls' schools in the kingdom of Bahrain. Future researchers are encouraged to study potential mediators such as (enjoyment, involvement and engagement) (Malik et al., 2019). Furthermore, to generalize the research findings, similar study may be conducted on male schools. This study can be also conducted in other GCC countries or any country in the world.

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Technology, Tourism, Hospitality, and Health Care Services

A Study on Addiction and Isolation in Virtual Reality Tourism Experiences

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Abstract. In this qualitative research note, we focus on two aspects of virtual reality tourism that haven't been talked about much: the risk of addiction and the feeling of being alone. Virtual reality tourism research so far has mostly looked at how current knowledge and theories can be used to help people have a good experience with VR apps. To look at reviews and blogs, the researchers used an inductive method. It turns out that virtual reality tourist experiences have common threads, like a short-lived sense of seclusion and the addictive power of virtual reality. More research is needed to learn more about addiction and social isolation so that we can better understand what causes them, how they work, and what they can do to us.

Keywords: Virtual reality tourism · Addiction and isolation in virtual reality · Tourism experiences · Virtual reality applications

1 Introduction

VR experiences can help travellers in many ways, such as achieving many different goals and giving them many benefits. Visitors, for example, will be able to play with virtual reality software that is both educational and fun. Virtual reality is now being studied to see how it can be used to make visitors' experiences better by influencing or moderating them in a good way. Some examples: Wei, Qi, and Zhang have a paper out this year that talks about this. Bogicevic and Seo also have a paper out this year that talks about this. Kim and Lee have a paper out this year that talks about this. We were able to find things about virtual reality tourism that we didn't know before because we used a new inductive strategy. The word "tourist experience" can mean a lot of different things (Knobloch et al. 2014). When researchers are studying human behaviour, they often make a distinction between hedonic and eudaimonic experiences (Knobloch et al. 2017). The goal of hedonic experiences is to make people feel happy as many times as possible in a short amount of time. Another thing to keep in mind is to avoid negative emotions until they are replaced by positive ones. Worry, for example, is followed by excitement when taking part in activities that make you feel good (e.g., Mura 2010). roots travel (Higginbotham 2012) and volunteer tourism are two examples of eudaimonic experiences that are meaningful. These types of experiences often have

more personal connections to places, activities, and events (Knobloch et al. 2017). 2007. Zahra and Mcintosh. For example, Wei et al. (2019) or specialised theories (Bogievic et al. 2019) are used to look at virtual reality applications and see how they work (e.g., Tussyadiah et al. 2018). Kim and his team looked at the data from the study. They found that people who eat a lot of meat are more likely to be obese than people who don't eat a lot of meat. (Bogicevic et al. 2019; Tussyadiah et al. 2018; Bogicevic et al. 2019; Tussyadiah et al. 2018; Bogicevic et al.) (Huang et al. 2015) According to these studies, virtual reality applications in tourism can help visitors have a better time, no matter how they interact with them. VR can also be a great marketing tool for tourism destinations and businesses. Most of the information on virtual reality tourism that's available now is focused on the benefits of virtual reality, especially when it comes to marketing (e.g., Huang et al. 2015). Virtual reality literature, on the other hand, has mostly ignored suggestions to look into negative emotional responses to tourist encounters, even though recent research on visitor experiences says it's important to do so (Nawijn and Biran 2019; Oren et al. 2021). Because hedonic scenarios can be bad for the experience in a hedonic setting but can be good in some eudaimonic situations, when visitors think their experiences are important, bad emotions must be dealt with (Nawijn and Biran 2019).

2   Methodology

Qualitative research methods were used in this study to look at the content of online reviews and blogs written by tourists who had been on virtual reality tours. Virtual reality tourist experiences and simulations that were all about tourism was a common theme in the videos (e.g. a trip to Mars, a VR hotel kiosk experience, a theme park ride). A deductive strategy was not used in this case. As a result, we were able to come up with some ideas thanks to the data (Braun and Clarke 2006). It's "the use of a computer-generated three-dimensional world that the user can travel through and maybe interact with." This is what Guttentag says virtual reality is (2010, p. 38). (VR). This definition doesn't include "augmented reality," because it refers to computer programmes that make photos look better when they're taken in the real world. It was another important requirement for our study that people wear head-mounted displays that cover their eyes when they use virtual reality. This excluded PC-based VR applications like Second Life tourism experiences from the study. Virtual reality tourists' experiences were gathered qualitatively by Braun and Clarke in 2006, and they covered a wide range of activities and places to go on vacation. Then we looked to see if the experience required a head-mounted display to completely cover the user's eyes and/or hearing. It was found that blogs and reviews existed by searching for a lot of different words and sentences in search engines. Only two of the many examples are "virtual reality tourism" and "I tried virtual reality while I was on vacation," but there are many more. Most virtual reality simulations had both visual and auditory parts. Touch made the experience better when controllers were used. There was no mention of the taste or smell. The authors speak English and Dutch, and this should be known. Virtual tourism was not paid for by bloggers or reviewers. There was no evidence that they were paid for their time. We looked at 37,500 words from 32 blogs and 39 reviews to find out what people thought. This is a reference to a unit that is big enough to be thought about in its entirety

while still being able to fit in your memory during the interpretation process (Braun and Clarke 2006). The authors of online reviews and blogs kept their identities secret by not including their names in their articles. "Users," "bloggers," and "reviewers" are some of the terms used in this part of the website, depending on how they participate. In order to follow Braun and Clarke's data analysis rules, the researchers used open coding, focused coding, and thematic coding (2006). So, the codes show off a specific thing about the item, like its semantic content or hidden information. When the concentrated codes were looked at, the themes were found out about. This theme analysis is broken up into three parts: finding commonalities, removing duplication, and making new commonalities. It was as a result that the relevant data categories were made. People already knew about many of the subjects found through data-driven analysis in the fields of virtual reality and tourism research, such as flow, interaction, and design elements (Kim et al. 2018). Wei et al. (2019) this study is talked about by Mitas and Bastiaansen (2018). However, two new themes came up: addiction and social isolation, which we'll talk about more in the next part of this text.

3 Results and Discussion Addiction

During the trial, the researchers found that virtual reality tourism experiences appear to be addictive. According to what people said, the majority of people who took part were not willing to stop. Many people were willing to sell their own things in order to pay for and make space for their own virtual reality setup: During this time, I looked out my window and saw the world-famous Strip. I thought about selling some of my furniture to pay for and make room for my own virtual reality setup. I had a strong sense that this was how addiction felt. Many people were sad when the show came to an end. One said, "My virtual reality rollercoaster ride is over, but I'm not ready for it to be over." After just one use, some people may become addicted to the drug. "To be honest, I was afraid of what I would do. Our first meeting made me think about it all the time." In part because of this appealing feature, customers are more likely to come back to the store again. One author wonders, "What new worlds and new events are waiting for us around the corner?" A group of tourists are sure the VR tourism experience will not end, and they plan on going back often. While most tourists say they want to go on more trips, this study shows that there is a more addictive behavioural component (see Van Boven and Ashworth 2007). Most "real" vacations don't have a lot of substance abuse in them, except for people who are always on the move (Cohen and Gössling 2015). Addiction is not talked about in research on tourism. When predicting how many people will become addicted to drugs because of visitors, the term "addiction" is used a lot. This is because it is used to talk about traditional substance dependence (Tosun 2002). Tourist addiction has only been talked about in terms of people's compulsive use of air transportation, according to modern definitions of addiction, which include things like gaming, exercising, purchasing, sexual activity, and eating. This isn't true, though (Cohen and Gössling 2015).

3.1 Isolation

Many people said that when they first put on the goggles, they felt a little lonely. Many people had a good time, but others felt isolated and couldn't connect with each other in the virtual reality environment they wanted to be in. "Even if you wear goggles that keep you from seeing your friends and family face-to-face, it's not clear whether that makes you feel more connected to them. Two ways: It can make people think they are more isolated or alienated than they are." Many people said they were afraid of feeling confined. Taking off the VR helmet didn't make me feel warm and fuzzy. After seven minutes, my time with the experience was over, and I was happy to be back in my own world. Finally, to quote a writer: "Only you are on this earth. A person who has never been to the moon can't understand how it feels to be on the moon. Virtual reality can't be talked about, either. In some ways, technology is separating us emotionally as well as physically, and this is not good for us." According to our research, people who go on virtual reality tourism trips report feeling lonely. In the tourism industry, people are less interested in being alone because virtual reality has become more popular. The research into virtual reality and isolation has been done by businesses that aren't in tourism. When people with aphasia feel lonely, virtual reality apps have been used to make them feel less alone. However, their use had no effect on their social isolation (Marshall et al. 2016). Previous research found that cooperative online learning makes people feel like they are alone (Monahan et al. 2008). People who use social media often feel isolated because they can't get immediate answers or interact with other people in real time (cf. Boulos et al. 2005). Virtual reality tourism experiences are fun, but they also have a lot of benefits because they make you feel isolated. Because so many people want to spread the word about virtual reality to their friends and family, this may be the reason for it. Virtual reality tourism is better when there is a temporary, isolated atmosphere. People who get a quick answer from virtual reality apps don't may feel isolated (cf. Boulos et al. 2005). The term "subjective isolation" refers to how isolated an individual feels (Cacioppo and Cacioppo 2014). According to Cacioppo and Cacioppo, being alone can cause short-term stress as well as long-term health and well-being consequences like depression, which can be bad for your health and your life (2014). There aren't likely to be any virtual reality tourist experiences in this group. A VR tourist experience may make one feel lonely because they are cut off from the real world. This usually goes away after a few hours, but it can last for days. As a result, very little is known about visitors and how they are kept apart from the rest of the world. According to Crompton's (1981) study of social group roles, vacations can help people feel less lonely. During a short time, the opposite is true for virtual reality tourism.

4 Conclusion

In the past, research on virtual reality tourism experiences has only looked at how deduction methods could be used to manage or regulate the tourist experience in a positive way, not how VR applications could improve the whole experience. Inductively, we found two new characteristics that could be used as foundations for a virtual reality tourism experience. This study adds to this body of knowledge. Addiction and a brief sense of isolation are just two of its many characteristics that, among other things, need

to be looked into more thoroughly. A reason why something is important. This research will make virtual reality experiences for people who go on vacation better. In order to avoid feeling isolated for a short period of time, designers need to use feedback from people who use their products. To make sure that everyone can use the technology, it is important that virtual reality tourist experiences are fun for people who work in the tourism industry as advisors. Precautions must be taken, however, in order to avoid becoming addicted to a drug. Virtual reality is becoming more popular as an alternative treatment, but health care providers must keep in mind that it can also lead to addiction.

4.1   Limitations

This study has some flaws. It looked at blogs and the internet to get ideas and information at the start of this study. Travelers who have had a great time are more likely to leave positive or negative reviews on TripAdvisor (Park and Nicolau 2015). If the experiences or websites in question want their work to be shared by bloggers or reviewers, they could make a deal with them.

4.2   Future Research

Virtual reality tourism isn't very well known to most tourists, but it looks like both the supply and demand for VR tourism experiences are growing (Bogicevic et al. 2019). This emphasises the need for research into the possible addictive ramifications of VR tourism. (2011) Cavaliere, Cohen, and other people (Cohen, Higham, and Cavaliere). Future academic research should look more into the possible stress and health consequences of being isolated while on vacation. Trying to think of ways to make the VR tourist experience more interactive could help. As an important research question, we need to know how loneliness and temporary isolation in virtual reality tourism experiences are linked. More research is needed to find out if people become addicted to virtual reality tourism experiences. Addiction is a big problem in other industries, like gaming (see Chou and Ting 2004). It's a new problem in the tourism industry. In the past, some people have thought that the VR experience itself might make them want to keep going back for more, rather than the unique circumstances of a single VR tourist trip. We found that repeat customers didn't seem to be less excited about their reviews than new customers, as shown by our data analysis. There are many classic computer games that have a high level of immersion and flow. This can be a sign or cause of addiction (e.g., Chou and Ting 2004). How addictive are virtual reality tourism experiences, and how does novelty play a role in making them more interesting? Cohen and his coworkers say that there has been a rise in negative talk about "binge" flying in the last few years (2011). Virtual reality tourism is often shown in a good light. Virtual reality tourism experiences are seen as positive in the fields of entertainment, education, accessibility, and historic preservation, as well as by people who use them (Guttentag 2010). Using our findings, we think that the language used by people in the tourism field should be more accessible, and that the way people think about tourist behaviour and addiction in general should change. In the last few years, doctors have started taking a more holistic approach to treating addiction, which is better for the patient. Virtual reality encounters are not part of this discussion,

contrary to what most people think. Additional medical research is needed to figure out the exact causes and prevalence of virtual reality addiction in general.

4.3 Impact Statement

This research adds to the design and implementation of virtual reality in tourism experiences. In terms of design, it's critical to take steps to avoid a brief sensation of isolation by, for example, permitting user engagement. VR tourism experiences should be built in such a way that they are delightful to experience for tourism industry experts. However, precautions should be taken to avoid addiction. VR is being used mostly as an alternative therapy approach by health experts, but it should also be considered as a potential cause of addiction.

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Factors Affecting Palestinian Citizens' Satisfaction Toward Free Health Line Services During COVID 19

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Abstract. This study investigates factors affecting Palestinian citizens' satisfaction toward free health line services during COVID 19. A questionnaire was created using the descriptive-analytical approach to collect data from all Palestinian citizens in the Gaza Strip. The data from 376 respondents was analyzed using multiple regression analysis. The results showed that the independent factors (i.e. healthcare professionals-patient relationship, responsiveness, adequacy of the free health line services provided, and confidentiality of data and information) influenced Palestinian citizens' satisfaction. While this study adds to earlier research, it also provides data that academics and practitioners may use to increase the satisfaction of Palestinian citizens.

Keywords: Healthcare professionals-patient relationship · Responsiveness · Adequacy of the free health line services provided · Confidentiality of data and information · Citizens' satisfaction · Palestine

1 Introduction

The COVID-19 outbreak was designated a worldwide pandemic by the World Health Organization on March 11, 2020. The outbreak of COVID-19 caused dramatic changes in health care and health operations across the world. The fast adoption of e-health services to securely meet patient requirements while keeping social distance guidelines to limit the hazards of COVID-19 exposure has been one of the most significant advances for health clinics [1].

The development of "virtual services and information-rich bedside services" is transforming e-health care [2]. Providers will be able to employ Internet capabilities to expand their clinical treatment skills. Medical devices that report information through in-home monitors connected to the Internet, for example, can be used to make virtual house calls [3]. Other alternatives include interactive home monitoring systems, which continually monitor patients' vital functions at home and communicate real-time and retrospective patient data to health professionals situated outside the house via wireless point-of-service communication [2].

Healthcare service providers require suitable service quality evaluation frameworks in light of the increased awareness of the demand on healthcare service quality. Due to

Israeli restrictions on Palestinian territory, e-health services for patients, such as tele-health visits, are difficult (if not impossible) to execute. As a result, during COVID 19, the Palestinian Ministry of Health in Gaza introduced free health line services rather than e-health services. Patient satisfaction has become a critical issue in e-health services. Patient satisfaction has been linked to physician/practice loyalty [4] and health-care usage in research [5]. In the literature, there are many factors affecting patients' satisfaction. One of the most significant variables is the interaction between healthcare experts and patients, as well as responsiveness, appropriateness of free health-line services given, and data and information confidentiality. The researchers identified these variables based on the results of a pilot study they conducted to identify the four most critical elements influencing citizen satisfaction.

The significance of this research stems from its topic. More specifically, there is a paucity of empirical research on e-health patient satisfaction. Despite growing interest in assessing patient satisfaction with e-health, there are still just a few validated patient satisfaction surveys available [6, 7]. According to Guntu et al., [8], there is a need for further evidence of validated questionnaires for evaluating e-health patient satisfaction. As a result, the purpose of this research is to explore the factors that influence Palestinian citizens' satisfaction with free health-line services during COVID 19.

The remaining sections of the paper are structured as follows. The research model and research hypotheses are then constructed in Sect. 2. Section 3 introduces the methodology. Section 4 discusses the study's findings, and Sect. 5 wraps things up with a discussion of the findings, limitations, and future research.

2 Theoretical Background

2.1 Citizens' Satisfaction

The first set of assessment criteria focuses on citizens' satisfaction, which is a frequently used indicator of service quality. Fulfillment, dependability, efficiency, flexibility, privacy or security, and individualization are some of the criteria that may be used to assess citizens' satisfaction. The perceived usefulness and completeness of an e-service is referred to as fulfillment [9]. On the other hand, reliability focuses on an e-health service's capacity to offer the right technical function over time [10, 11]. The time it takes to execute an e-health service, or the time it takes to perform the requested service satisfactorily, is referred to as efficiency. A website, for example, should allow for easy navigation and search [12]. Privacy and security are significant considerations while offering e-health services since the healthcare industry handles sensitive personal information [13]. Information must be safeguarded and not disclosed in an e-service. Individualization or personalization is an intriguing addition to consumer delight [14]. This refers to the degree to which the e-service may be customized to meet the demands of each unique user.

2.2 Healthcare Professionals-Patient Relationship

The focus of this research is on healthcare professionals-patient interactions. The healthcare professionals-patient connection is crucial to giving and receiving great care, to the

healing process, and to improved outcomes, according to a publication by American Healthways [15]. In other words, the healthcare professionals-patient connection is the most important dyad in the delivery of healthcare services. The healthcare professionals-patient interaction has always been founded on a paternalistic model that presume professional authority [16]. However, the conventional paternalistic connection has been supplanted in recent years. Patients are increasingly being viewed as healthcare customers, just like they are in commercial markets [14, 16, 17]. As the healthcare environment shifts, it's critical to consider how information and communication technologies, particularly the Internet, might help improve medical professionalism and care quality. While the number of e-health applications is virtually limitless, three basic categories may be differentiated [18]: data storage, management, and sharing; informing and supporting medical decision-making; and providing expert professional and or consumer care remotely. Based on the above, we hypothesize the following:

H1: Citizens' satisfaction is positively influenced by healthcare professionals-patient relationship.

2.3 Responsiveness

The speed with which a system responds to a user's request can be characterized as responsiveness. The e-health service provider should deliver on its promises and provide alternate choices for providing recovery services. Compensation, on the other hand, relates to the user's ability to handle and resolve difficulties. The user expects to be reimbursed for the issues that the service provider causes. When a service fails to satisfy the user's expectations, the service provider must compensate the consumer [14]. We suggest the following hypothesis based on the foregoing:

H2: Citizens' satisfaction is positively influenced by responsiveness.

2.4 Adequacy of the Free Health Line Services Provided

One of the most important aspects determining citizens' satisfaction during the COVID 19 pandemic is the adequacy of the free health-line services provided. Adequacy of the free health line services provided refers to the following: the patient receives satisfactory information about his or her health problem; a sufficient number of health workers are available to provide health services to patients; health workers allow sufficient time to listen to patients' complaints and inquiries; and health workers are very courteous when dealing with patients. Several studies have been carried out to assess the quality of health care delivered in various nations [19–21]. The following hypothesis is proposed based on the foregoing:

H3: Citizens' satisfaction is positively influenced by adequacy of the free health line services provided.

2.5   Confidentiality of Data and Information

The information technology research community has recently been confronted with the issues of managing and distributing medical data in a regulated manner [22, 23]. In reality, only if proper security support is provided will the implementation of electronic patient records be effective. Win [24] examines whether existing information security systems are enough for securing medical data, concluding that there is still need for improvement. Acharya [25] also provides an overview of security vulnerabilities in ubiquitous healthcare applications, as well as an analysis of key unresolved challenges. Although the earlier studies look at security policies for e-health systems, they don't present a formal definition or undertake policy analysis. Hewitt [26] conducted a survey to see how security features affect the use of electronic health records. As a result, he proposed a model that incorporates a set of security measures, such as biometric authentication, Multiple Access Systems, and Single Sign On systems, into a hybrid Technology Acceptance Model to see if these factors influence healthcare organizations' decision to use the electronic patient record. Based on the foregoing, we propose the following hypothesis:
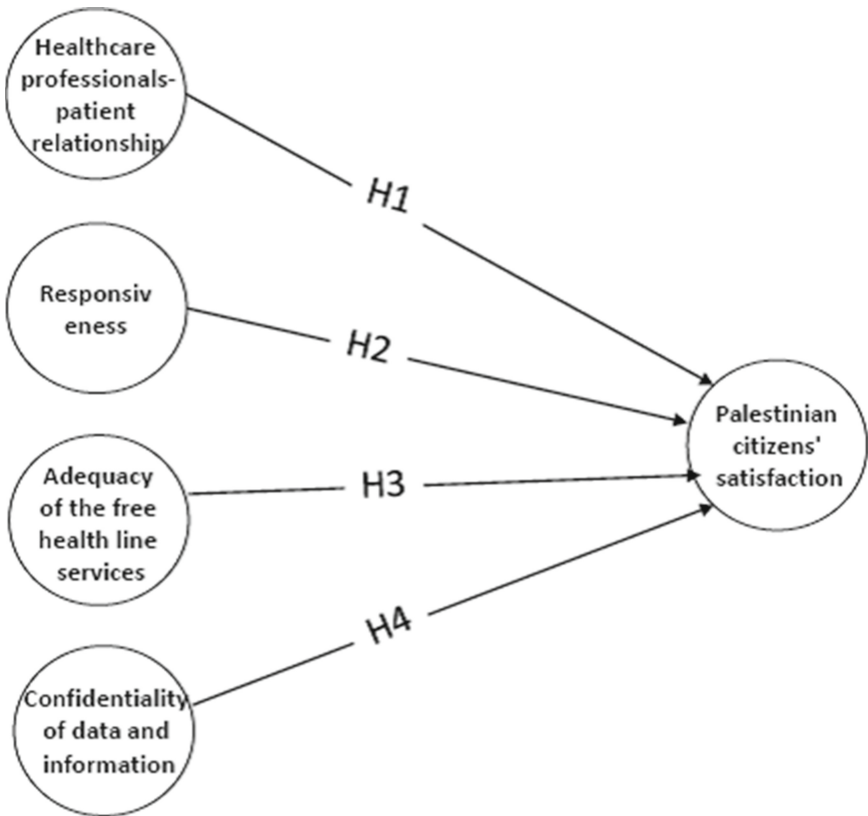
Fig. 1. The research framework

H4: Citizens' satisfaction is positively influenced by confidentiality of data and information.

The conceptual structure of the study is depicted in Fig. 1. The dependent variable (i.e. Palestinian citizens' satisfaction) is connected to the independent variables (i.e. healthcare professionals-patient relationship, responsiveness, adequacy of the free health line services provided, and confidentiality of data and information) in this model.

3 Methodology

3.1 Participants

The questionnaire was completed and returned by 376 participants, as shown in Table 1. The findings of the demographic variables were presented in the table.

Table 1. Profile of respondents ($n = 376$)

Variables	Groupings	No. of respondents	%
Age	25 years or less	110	29.3
	26–35 years	78	20.7
	36–45 years	106	28.2
	46–55 years	58	15.4
	56 years and above	24	6.4
Gender	Male	222	59
	Female	154	41
Education level	Higher school and lower	42	11.2
	Diploma	58	15.4
	Bachelor	190	50.5
	Master	58	15.4
	Ph.D.	28	7.4
Marital status	Single	106	28.2
	Married	262	69.1
	Widowed	0	0
	Divorced	6	1.6
Monthly income	$500 or less	208	55.3
	$501–$1000	106	28.2
	$1001–$1500	40	10.6
	$1501–$2000	14	3.7
	$2001 and above	82	2.1

3.2 Procedures

The descriptive approach was utilized to explain the current situation and to answer key questions concerning factors affecting Palestinian citizens' satisfaction toward free health line services during COVID 19. As a result, a survey research was used as the primary methodology for this study, with data collected via a Google form. The Google form's link was shared on social media (Facebook, WhatsApp, and emails). The original questionnaire was professionally translated into Arabic in order to correspond to local language standards. It was then examined by two native Arabic speakers and pilot tested for accuracy. The questionnaire was distributed to all Palestinian citizens in the Gaza Strip. For statistical analyses, IBM SPSS software version 21 was employed.

3.3 Measures

A 5-point Likert scale questionnaire was used for the survey (1 = strongly disagree, 2 = disagree, 3 = no opinion/neutral, 4 = agree, and 5 = strongly agree). The survey was divided into five sections. The first section, which is based on Hadwich et al., [3], and Car et al., [18], uses seven questions to assess the healthcare professionals-patient relationship. In the second section, responsiveness was investigated, and five items were created based on Zemblyte, [14]. In the third section, four questions were included to examine adequacy of the free health line services provided [19–21]. The fourth section includes three questions to assess confidentiality of data and information from Hewitt, [26], Acharya [25], and Win [24]. The fifth section includes six questions to measure Palestinian citizens' satisfaction from Zemblyte, [14].

4 Results

4.1 Factor Analysis

The KMO and Bartlett's tests were used to check if the factor analysis was appropriate for the study. The results of the reliability test should be more than 0.7. The Bartlett's Sphericity test scores should likewise be less than 0.05. The KMO value of 0.742 is greater than the acceptable threshold of 0.000, suggesting that this analysis is sufficient for the study.

To construct the factor score coefficient matrix created by principal components analysis [27–30], one principle factor is rotated using the varimax normalization, as shown in Table 2. There are 26 items in the factor. The lowest loading threshold for factor loadings on various scales, according to the research, is 0.30 [31–36]. All of the loadings in Table 2 are more than 0.30, suggesting that the scales' construct validity is maintained.

Table 2. Reliability and factor loading of the constructs

Construct	Item	MV	SD	FL	Cronbach's α
Healthcare professionals-patient relationship	1	3.63	0.876	0.727	0.785
	2	3.56	0.997	0.758	
	3	3.48	1.081	0.751	
	4	3.27	1.070	0.717	
	5	3.52	1.076	0.721	
	6	3.27	1.115	0.737	
	7	3.28	1.068	0.752	
Responsiveness	1	3.55	0.992	0.751	0.758
	2	3.49	0.993	0.701	
	3	3.44	1.059	0.755	
	4	3.36	1.005	0.711	
	5	3.48	0.955	0.703	
Adequacy of the free health line services provided	1	3.16	1.203	0.790	0.769
	2	3.32	1.096	0.753	
	3	3.41	1.037	0.797	
	4	3.69	0.925	0.729	
Confidentiality of data and information	1	3.64	0.977	0.718	0.773
	2	3.68	1.010	0.735	
	3	3.55	1.085	0.746	
Palestinian citizens' satisfaction	1	3.51	0.988	0.769	0.847
	2	3.41	1.052	0.723	
	3	3.32	1.055	0.709	
	4	3.61	1.025	0.733	
	5	3.32	1.075	0.708	
	6	3.51	0.961	0.747	

4.2   Hypotheses Testing

The relationship between the independent variables (i.e. healthcare professionals-patient relationship, responsiveness, adequacy of the free health line services provided, and confidentiality of data and information) and the dependent variable (i.e. Palestinian citizens' satisfaction) was investigated using multiple regression analysis. The purpose of the multiple regression analysis was to determine how the independent variables impact the Palestinian citizens' satisfaction.

Table 3 shows that the independent factors explain 82 percent of the variation in Palestinian citizen satisfaction (adjusted $R2 = 0.820$). The model's quality was confirmed

since the F value was significant at 0.000. Table 3 shows that the healthcare professionals-patient relationship (t = 4.502, p 0.000), responsiveness (t = 3.425, p 0.001), adequacy of the free health line services provided (t = 5.130, p 0.000), and confidentiality of data and information (t = 9.314, p 0.000) were all positively related to Palestinian citizens' satisfaction. As a consequence, the data revealed that H1, H2, H3, and H4 were well supported by the data.

Table 3. Results of multiple regression analysis

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	0.041	0.089		0.465	0.642
	Healthcare professionals-patient relationship	0.224	0.050	0.211	4.502	0.000
	Responsiveness	0.197	0.058	0.195	3.425	0.001
	Adequacy of the free health line services provided	0.210	0.041	0.219	5.130	0.000
	Confidentiality of data and information	0.364	0.039	0.362	9.314	0.000

Notes: Dependent variable: Palestinian citizens' satisfaction; adjusted R2 = 0.820, F = 422.282, and sig. = 0.000

5   Discussion

5.1   Discussion of Findings

The relationship between the independent variables (i.e. healthcare professionals-patient relationship, responsiveness, adequacy of the free health line services provided, and confidentiality of data and information) and the dependent variable (i.e. Palestinian citizens' satisfaction) is investigated in this study. The healthcare professionals-patient relationship has a positive influence on the Palestinian citizens' satisfaction. The results reveal that citizens easily communicate with healthcare providers via the toll-free line; they are directed and guided quickly to address any health problem; health workers deal with high professionalism with patients in need of health service; health workers pay close attention to the demands of patients on the phone line; health workers collect extensive data on the patient's problem; the patient gets the required service on time; and the patient is counseled and advised appropriately. This is in line with previous studies [15] that showed the relationship between healthcare providers and patients is critical to providing and receiving excellent treatment, the healing process, and improved

results. In other words, the most crucial dyad in the delivery of healthcare services is the relationship between healthcare professionals and patients.

The findings also indicated a link between responsiveness and Palestinian citizens' satisfaction. This could be attributed to the following: citizens' calls on the toll-free line are responded to quickly; they feel that the health workers have the desire to help them; health workers are responsive to patients despite the many and pressure contacts; health workers give citizens enough time to inquire; and the information provided by health workers on the free line is clear, accurate and transparent. This is consistent with prior research [14], which found that users expect to be compensated for problems caused by service providers. When a service fails to meet a customer's expectations, the company must compensate the customer.

It could be noticed that there is a link between adequacy of the free health line services provided, and Palestinian citizens' satisfaction. This is due to the following: the patient gets satisfactory information about his/her health problem; a sufficient number of health workers is available to provide health services to patients; health workers allow sufficient time to listen to patients' complaints and inquiries; and health workers are very courteous when dealing with patients. This is consistent with a number of studies that have been conducted to measure the quality of health care provided in various countries [19–21].

In addition, the findings revealed a link between confidentiality of data and information and Palestinian citizens' satisfaction. This refers to the following: health workers consider patient privacy while providing health advice; the patient feels that the statements and information provided by him via the telephone line will be treated in the strictest confidence; and they believe that patient data and information are not shared with any other parties. This is consistent with past research. Win [24], for example, investigates whether existing information security methods are enough for safeguarding medical data, concluding that further work is needed. Acharya [25] also gives an overview of security flaws in widely used healthcare apps, as well as an analysis of important unsolved issues.

The results also show that the citizens are satisfied toward free health line services based on the previous findings during COVID 19. More specifically, they are satisfied with the provision of health advice and advice via the toll-free line. The patient feels safe while dealing with the free line. Citizens are satisfied with the time of receiving the requested service, as well as providing health services on time. Health advice is provided through the free line to all patients without prejudice or discrimination. Free online health advice is available around the clock. This is consistent with past research [6, 7].

5.2   Limitations and Further Research

Contextual and application limitations were among the study's empirical results. Our findings are based on responses from Palestinian citizens of Gaza. As a result, making broad generalizations about Palestinians is difficult. The study focused on Palestinian citizens in the Gaza Strip, which restricts the findings' relevance to other Palestinian citizens in the West Bank. Despite the fact that the findings apply to emerging economies

with comparable cultural roots, such as Palestine, they may not be suitable for places with different cultural situations.

As part of a future research, the researchers recommend that the model be re-examined in different settings or cultures. Additionally, the model may incorporate moderating and/or mediating variables to aid in the understanding of the links and mechanisms underlying the situation at hand. In addition, healthcare professionals should be included in future studies as a sample.

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Big Data Analysis and Data Visualization to Facilitate Decision-Making - Mega Start Case Study

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Abstract. Recently, there has been a surge in interest in data analysis to gain vital information that aids decision-making, as well as a variety of report formats that help clarify and show information in a detailed and flexible manner. Big data has various qualities that set it apart from typical data, including volume, diversity, and value. Which has necessitated the development of effective technical tools and methods for its examination. The analysis of big data for a virtual corporation that is engaged in retailing, owns multiple branches, and sells a variety of products will be reviewed in this paper. The phases of the big data analysis life cycle will also be examined in depth in order for Google Data Studio to produce visualizations and reports. And, in order to make appropriate conclusions for the challenges and hypotheses created during the discovery phase, discuss the data visualization, and present it to the decision maker.

Keywords: Big data life cycle · Google data studio · Visualization · Decision making

1 Introduction

In addition to management information systems, computer science, finance, and accounting, big data is a major topic. Big data has an impact on financial decisions, and the assistant decision-making system is utilized in a variety of industries, including healthcare, mobile devices, marketing, education, smart cities, manufacturing, and e-commerce [1].

Big data is frequently employed in this period, particularly in applications based on the Internet of Things (IoT). As a result, data is kept in distributed databases in various forms (organized, semi-structured, and unstructured). And it was done in a timely, accurate, and effective manner. Additionally, data extraction, transformation, and visualization aid modelling results. Big data, on the other hand, employs strategic tools and strategies to collect, store, process, and turn massive amounts of data into relevant data and information. Volume, variety, value, speed, honesty, diversity, and visualization are all characteristics of big data [2, 3].

On the other side, there is a massive amount of data, as well as increased capabilities in data collection and storage methods and large capabilities to accomplish this. To put it bluntly and directly, things have become really simple and are frequently updated. A higher number of data can be under construction. Big data and its storage have become quite inexpensive in terms of cost, which is why firms are attempting to get the most value from the data [4].

According to Marjani (2017), big data analytics can be used to derive important and meaningful insights. There are a variety of approaches, including uncovering hidden patterns and linkages that are unknown or known, as well as gaining insights that are beneficial in understanding client demands and preferences and market trends [5].

In this paper, we will analyze the big data of a virtual company called Mega Start's in order to obtain graphical results so that decision makers can make the best decisions possible. Google Data Studio will be used to analyze the big data of the organization [6], to follow the steps of the life cycle phases of big data analysis, to create data models, and to obtain results in the final phase.

The issue is that Mega Start's sales are low, and Mega Mart's management is seeking for ways to increase revenues and profits. Assumptions were made, such as offers, discounts, and marketing campaigns, and data was collected and analyzed on Data Studio to arrive at the desired meaning, which was to increase Mega Start's revenue and profit rate. Decision makers will be able to make better judgments as a result of these solutions and analyses, which have been built specifically for Mega Mart's benefit and to solve the problem.

2   Literature Review

Big data is information that is too large for typical database systems to handle. The data is too big, or it's growing too fast, or it's in multiple formats that don't fit into typical database architectures. There must be another method to process this data in order to extract value from it [7].

"Big data goes beyond the capabilities of regularly used hardware environments and software tools to acquire, handle, and process it in the time allotted to its consumers" [8]. "Big data refers to data sets whose size exceeds the ability of standard database software tools to acquire, store, manage, and analyze," according to the McKinsey Global Institute [9]. These definitions imply that as technology improves, what is referred to as big data will evolve.

The data analysis tools are the most significant in this section since they allow the data to be evaluated in order to achieve the desired goals and meaning. Hadoop is an open-source platform for running applications and storing massive amounts of data on a variety of devices. It possesses a one-of-a-kind skill in terms of outstanding handling and, on the other hand, a one-of-a-kind capacity in terms of task handling [10]. In terms of processing massive data, Spark does the same duties as Hadoop, but it is faster. Spark, on the other hand, works with memory, which is referred to as RAM, and which is employed in random access to complete its data processing tasks. And it's used as a backup memory for other files. This is how it differs from Hadoop [11].

Storm is compatible with Hadoop's jobs and is concerned with storing and processing enormous data, but it differs in that it processes large data in a way that handles failures

and tolerates them gracefully. Storm, on the other hand, is a tool that is at the heart of horizontal development. Its significance is defined by its high and effective capacities to reach the highest rates of ingestion [12].

According to Data Life Cycle Analytics, "any organization or application where data is used and processed to deliver outcomes is extremely significant" (Munawar,2020). The ability to access and use data for a given period of time is provided by the presentation of data for a set period of time. Data comes from a variety of places and is available in a number of formats. A big data-based application, such as in the healthcare industry, generates a vast quantity of data via sensors and other electronic devices, which may then be categorized into a model for report generation and prediction for a number of reasons to the advantage of patients and hospitals. The data life cycle represents the entire data process in the system. The production, storage, use, sharing, archiving, and destruction of data in the system and applications begin with its creation, storage, use, sharing, archiving, and destruction. It establishes the data flow within a business. For the concept to be applied successfully, the data life cycle must be kept under a secure data management system [13].

There has been a lot of research using big data analysis to achieve graphical results, such as doing a study regarding tourism dashboard on mobile web app by accessing tourist data in southern Thailand using a big data analysis platform. Tourism data analysis, data storage, data processing, data visualization, and user interface are all part of the proposed system (UI). For attracting tourists in southern Thailand, a tourist dashboard system on mobile web applications is particularly useful [14].

Data visualization is an important tool for creating visuals, graphs, and animations that convey a message of understanding. Many things are readily and successfully clarified and explained using the illustrations. Without having to read the textual details, this aids decision-making [15]. The purpose of visualization is to extract relevant information from data and represent it so that decision-makers may make more informed decisions. Data visualization is the art of presenting data to the right people at the right time so that they can get insights more quickly. You can interact with data and go beyond analysis using data visualization. The audience's attention is kept on the screen, and they become engaged in the data visualization. Data visualization has numerous advantages, including being an excellent means of communicating both an abstract and a concrete idea [16].

Google Data Studio is a new data visualization program aimed to be an easy-to-use tool for presenting large data sets in a visually appealing and understandable manner, with graphical results in formats suitable for a wide range of analytical research. Data Studio's primary purpose is to understand data and online analytics; nevertheless, it supports a wide range of data sources, including MySQL and spreadsheets, implying that academics can use Data Studio to easily evaluate their data. While Data Studio uses the standard combination of charts and graphs to present information, it adds features such as the ability to combine numerous sources into a single report, dynamic data updates, and interactive visualizations. However, Data Studio's support for third-party data sources might be improved, making it a viable resource for aspiring data photographers [17].

3   Research Design

This study drew on past research on the subject to define the foundations and procedures needed to create a prototype for the proposed solution mechanism. In addition to studying and analysing several situations and challenges confronting commercial organisations, particularly sales, to arrive at a general notion of how to find a solution and a mechanism for extracting appropriate visuals for the problems that Businesses face by analysing their big data.

This study obtains primary data and develops the model through interviews and general chats. Semi-structured interviews were conducted with the establishment's owners and sales experts. Semi-structured interviews allow the researcher to ask as many questions as he or she needs while keeping the overall impressions of constructing a solution prototype to a minimum. The technical components must be linked to the desired objectives to test efficacy. Semi-structured face-to-face interviews were conducted. More information about the solution model, the mechanism for tracking results, and how to implement the solutions was provided. Furthermore, solutions must be examined and verified at every level to ensure that they can be implemented and achieve the desired outcomes.

Mega Start Company (Virtual) handled the data, which covered all private sales operations in Muharraq, Juffair, Riffa, and Hamad Town from January 1, 2020 to December 30, 2020. The date of sale and branch, as well as the customer type, gender, product line, unit price, 5% tax, payment, gross income, gross margin percentage, and rating are all included.

4   Proposed Model

Mega Start is a virtual firm with its headquarters in Manama, Bahrain's capital. It is a private firm with a supermarket and retail network as its core business operation. Mega Start provides a diverse range of products and services in a variety of locations, catering to a variety of consumers, including regular customers and wholesale customers.

Most commercial projects encounter problems; the supermarket is a commercial project that necessitates the project owner's constant attention. It can only succeed after overcoming several obstacles. Anticipating potential barriers will help you avoid them, and there are a few common difficulties to take care of first.

Some of the challenges that Mega Start Company may face, the most serious of which could result in the project owner losing money due to blunders are:

- Ineffective cost and quality control.
- Poor supplier relations.
- Management's failure to formulate and execute on decisions.
- Insufficient insurance.
- Lack of sales.
- Key personnel departures.

Mega Start Company is having trouble producing sales, thus this case study explains how you can improve their sales process by using the data analytics lifecycle of big data analysis.

According to Mega Start's data, this corresponds to all private sales of the company in the year 2020. It turns out that the organization is experiencing a shortfall of private sales this year, which is why the topic of lack of sales was chosen. Also, conduct a big data analysis to find a solution to this problem.

The basic approach includes data preparation, data exploration, potential graphics efficiency assessment, outcomes efficiency analysis by discovery phase, model validation, and report generation, as illustrated on the left side of Fig. 1. On the right, you'll find a collection of reusable approaches and tools for overcoming visualization issues, including Rapid data processing that supports hypotheses. Obtaining drawings and building models from the model construction stage using Google Data Studio; Descriptive statistics provide a summary of the proposed models; hence, statistical validation, which ensures that the recommended patterns in the data are statistically sound and actionable reports. And report automation that ensures a set of results is delivered to the decision maker.
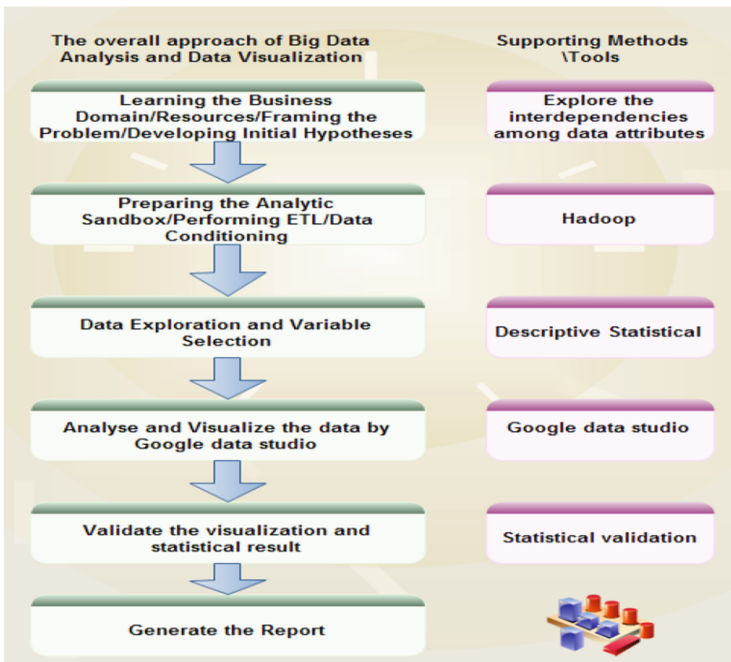
Fig. 1. The overall approach of big data analysis and data visualization.

Table 1 shows a portion of the big data acquired from the virtual corporation to analyse and visualize the outcomes. It also depicts the most essential characteristics that can be combined to form integrated models using assumptions produced during the research phase.

Table 1. A part of data.

City	Customer	Gender	Product li	Unit price	Quantity	Tax 5%	Total	Date	Currency	Time	Payment
Al Muharraq	Member	Female	Health an	74.69	7	26.1415	548.9715	4/6/2020	BHD	13:08	Ewallet
Riffa/Algharbi	Normal	Female	Electronic	15.28	5	3.82	80.22	1/24/2020	BHD	10:29	Cash
Al Muharraq	Normal	Male	Home and	46.33	7	16.2155	340.5255	1/4/2020	BHD	13:23	Credit car
Madinat Hama	Member	Male	Health an	58.22	8	23.288	489.048	1/29/2020	BHD	20:33	Ewallet
Al Muharraq	Normal	Male	Sports and	86.31	7	30.2085	634.3785	2/7/2020	BHD	10:37	Ewallet
Riffa/Algharbi	Normal	Male	Electronic	85.39	7	29.8865	627.6165	1/28/2020	BHD	18:30	Ewallet
Al Muharraq	Member	Female	Electronic	68.84	6	20.652	433.692	2/21/2020	BHD	14:36	Ewallet
Madinat Hama	Normal	Female	Home and	73.56	10	36.78	772.38	2/15/2020	BHD	11:38	Ewallet
Al Muharraq	Member	Female	Health an	36.26	2	3.626	76.146	4/1/2020	BHD	17:15	Credit car
Manama/ Al Ju	Member	Female	Food and	54.84	3	8.226	172.746	2/1/2020	BHD	13:27	Credit car
Madinat Hama	Member	Female	Fashion a	14.48	4	2.896	60.816	1/9/2020	BHD	18:07	Ewallet
Manama/ Al Ju	Member	Male	Electronic	25.51	4	5.102	107.142	1/7/2020	BHD	17:03	Cash
Madinat Hama	Normal	Female	Electronic	46.95	5	11.7375	246.4875	1/24/2020	BHD	10:25	Ewallet

5   Results and Discussion

The outcomes of big data analysis will be described in this section, with a focus on the phases of the big data analysis life cycle and the usage of Google Data Studio to generate visualizations and statistical tables that aid decision-makers in making informed decisions.

Discovery
While the Mega Start group has some facts and opinions on a range of topics, here's another chance to contribute some context: The Mega Start team began gathering data during the discovery phase of a project Mega Start since they have some opinions and data on a variety of difficulties. Following the team's discussion, the expert analyst discovered a sales issue, and the organization needed to raise sales to increase revenue.

Data is a collection of structured and unstructured data, such as numbers, concepts, dates, locations, and other elements. Mega Start data also includes a historical budget, prediction, and comparison, all of which will be utilized to verify the team's assumptions. Structured and unstructured data are both included in this category, but unstructured data is frequently shared within research teams.

Here are the three IHs of the Mega Start team, which are as follows:

IH1: Rewarding the most loyal consumers.
IH2: Marketing Campaigns.
IH3: Offers and Discounts.

Data Preparations
Mega Start collaborated with IT to create and test a new data storage and analytics sandbox. Data scientists and engineers discovered that some data needed to be updated and standardized during the data exploration process. Furthermore, more missing data sets were needed to validate key analytical assumptions.

Model Planning
The Mega Start group demonstrated, for the most part, that the database could be used

to make reasonable decisions in order to solve the problem. It's been challenging to develop effective hypothesis testing methodologies due to a lack of data. By initiating longitudinal research, the team decided to begin tracking database revenue growth over time. With this information, the team will be able to test the following two ideas:

IH1: Marketing Campaigns.
IH2: Offers and Discounts.

The study aims to develop objective criteria for planned longitudinal studies. They wanted to establish a fantastic concept that he would keep with him throughout the adventure. The study scope criteria comprised the following items:

• Decide on a product name.
• The product's initial price is renewed.
• The price of the sold product is renewed.
• Calculate the percentage of products that were sold.
• Define the pattern of product repetition.

Model Building
In the fourth stage, the Mega Start group used a range of analytical methodologies. This includes work by a data scientist who solved the task by applying techniques to textual descriptions of the concepts listed above. In addition, he analyzed social networks using histograms and statistics.

Communicate the Results
At this step, the team has arrived at and retrieved crucial results by various means and procedures, including analyses and assessment of the outcomes that are at the forefront and at the top in terms of influences and links. As a result, this project is deemed a success, and Mega Start's revenues are favorable and successful as a result of the analyses and hypotheses that were applied in it. With the help of volunteer forces with specialized knowledge and abilities, this project was completed on a shoestring budget. The main consequence of the Mega Start project is an increase in revenue, which is attributable to improved customer loyalty and its enhancement through programs of the most important approach, which is the loyalty programme. Encouragement and attraction of customers through Mega Start discounts and exclusive offers, as well as the presentation of prizes and instant gifts to customers, builds sentimentality toward Mega Start and increases customer value for them, all thanks to marketing campaigns and what Mega Start offers to customers in a competitive manner.

Operationalize
This is the final stage, during which the team works to publicize the positive outcomes and benefits of Mega Start on a big scale while also working on experimental developments under supervision.

Risks can be controlled appropriately and effectively, and before implementing operations on a large scale, the team can do so experimentally and in a small scale.

Mega Start's revenue is remarkable as a result of its presentations and analysis, and the following are the primary Mega Start results:

- Mega Start's marketing strategies and attracting and retaining consumers are dependent on Mega Start's vision of the future and effectively focusing on it for the sake of boosting interest and benefit.
- its as well as revenues.
- Filling out forms and showing the results are two instances of sensitive data that fall under the category of privacy and security.
- Providing advantages and incentives to regular consumers is an example of a running model, which is linked to the company's business and intelligence.

The analyses were given, along with their favorable results, and the difficulty that Mega Start was having was solved, resulting in an increase in revenue.

Google Data Studio

By converting massive business sales data into a report that explains and makes the data easy to grasp, the simple report on Mega Start virtual company data was created using Google Data Studio. This enables firm decision-makers to clearly examine data, understand the situation, and use the report to identify a solution to the problem.

Creating a data report from Mega Start virtual corporation for Big Data Research using Data Studio. Figure 2 illustrates that the virtual Mega Start company has four branches, with the names of the branches and the gross income of each branch displayed in Fig. 2, as well as a vertical analysis of the four branches' income. We concluded that the Madinat Hamad branch earns the most money. This means that the remaining branches are earning less money, and Mega Start's profits can be increased simply by raising sales.

Mega Start (virtual) corporation has six production lines, as shown in Fig. 2. The income for each of the lines is shown in the remaining numbers, and it appears that the Food and Beverage industry is the most important and profitable. This means that the remainder of Mega Start's divisions earn less than Food and Beverages, and thus Mega Start's revenue may be boosted simply by boosting sales in the lower-earning divisions.

Mega Start is a virtual firm, and the team chooses the Lifecycle phases. Mega Mart's massive data was reviewed and processed to produce results relating to the problem that needed to be solved, and the problem was reached. Suggestion of appropriate ways to tackle this problem, which are hypotheses, and these hypotheses are the main key to overcoming this problem and improving Mega Start's revenues and achieving success through the provided solutions in Mega Start's best interests. The results were outstanding, indicating that if decision makers made decisions based on the offered solutions after analyzing big data to solve the Mega Start challenge, they would be successful. Mega Start's work activity, location, and branches were clarified in order to compare them and identify the branches and items that needed to apply the recommended solutions in order to address the problem and meet Mega Mart's goals, which were regarded a success indicator.
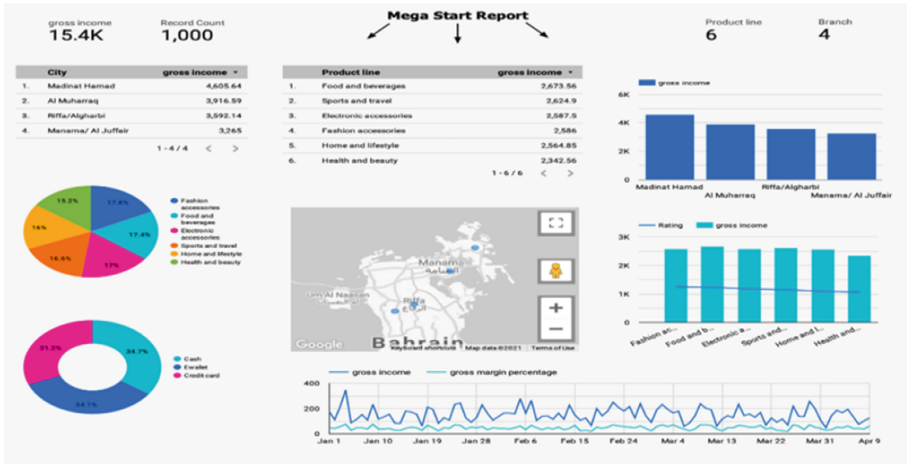
Fig. 2. Mega start report.

6 Conclusions

This paper will introduce the concept of big data, analyze it, and generate graphical results to aid decision-making, and it will be applied to Mega Start Company (virtual).

At this point, the details of the big data will be entered first, followed by a presentation of an overview of the big data, the big data and tools connected to the big data, and the analyses that will be performed on the big data. The importance and effectiveness of Mega Start Company in accounting and finance, as well as the relationships between them and their benefits, will be highlighted after adopting big data analyses. Following this stage, the problem that Mega Start is facing will be identified, and graphical findings from big data analysis will be acquired. Google Data Studio is the platform via which Mega Start's large data will be evaluated in stages with the goal of implementing models for the data, and after these analyses are completed, the results will be available to solve this problem. The most important prior studies on the issue of Mega Start's problem, which explain big data tools and their characteristics, analytical courses, and challenges related with the Mega Start problem, will be presented, along with the most important solutions that have been investigated. The research methodology is concerned with implementing the first model after implementing the big data analysis for Mega Start, with the assistance of sales experts and business owners, in order to link these auxiliary factors with potential outputs in order to achieve an important goal, which is to achieve the effectiveness and display the proposed model. Exhibiting the drawings that were taken from Data Studio, which strongly and effectively aid individuals who make decisions, and the summary of the study of this topic evaluates and analyses the big data for Mega Start and achieves the purpose Which is concerned with graphical findings to aid decision-making processes by obtaining effective results in the form of images and graphics, as well as increasing sales and profits through the solutions and hypotheses examined in the research.

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Evidence of COVID-19 Pandemic Impact on Travellers' Preferences for Crowded Versus Non-crowded Choices in Bangalore City

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Abstract. In a variety of retail and travel scenarios, crowding has an adverse influence on the customer experience and preferences. When travellers evaluate their travel and accommodation alternatives, they take perceived proximity into account. In response to current health concerns, travellers choose between crowded and less congested choices (the COVID-19 pandemic). We believe that while the epidemic is continuing, travellers would seek out less crowded travel and hotel choices. The threat's prominence had a consistent influence on how individuals felt while travelling through all modalities. On the basis of these results, we hypothesised a possible pandemic recovery mechanism for visitors with a high need for novelty and excitement. Three experiments have significant implications for travel and hotel marketing theory and management.

Keywords: Bangalore's perceptions of crowded alternatives · Avoid crowding during a pandemic · Pandemic's influence on crowded options

1 Introduction

COVID-19 has had a significant impact on our everyday lives as well as the tourist industry. The hotel business was severely impacted by the outbreak. Experts anticipate that almost half of all restaurants will go out of business. As people's willingness to spend money on food and drink outside of the house decreases as a result of salary cuts in January, the COVID-19 scenario will be particularly hard on bars and restaurants (Cronin and Evans 2020; Economics Observatory 2020). In the foreseeable future, more than half of those polled said they aren't ready to travel and stay in a hotel. Due of the risk of transmission, people are avoiding cities, tourist destinations, and workplaces. Crowding responses have been influenced and exaggerated as a consequence of the current epidemic. Consumer concerns about crowding have been studied and managed in a variety of sectors, including travel and hospitality. Crowd management is crucial in nations like India, where the population is rising and visitors are flocking, since it influences consumer perceptions and helps avert major problems in January. Overcrowding

may result in anxiety and difficulty coping, both of which are negative to the customer experience. The purpose of this study is to ascertain travellers' impressions of congestion in tourist destinations and their accessible alternatives. Tourism should benefit from a greater understanding of how global health issues impact visitors' perceptions of congestion and decision-making capacity.

The purpose of this study was to explore social interactions in a tourist location and the impact of COVID-19 on traveller decision-making. During the COVID-19 outbreak, this study examines Bangalore residents' views of crowded options. For instance, how would Bangalore citizens respond to overcrowded tourist attractions? According to assumptions, as the epidemic spreads, people's demand for crowded alternatives should decrease; travellers would avoid crowded transport and accommodation options. Numerous studies have shown that customers prefer big groups over small groupings. Tourism destinations should not be advertised as crowded or popular, according to these studies. How are companies going to react to and recover from the COVID-19 epidemic? Customer behaviour during a pandemic was the subject of this investigation. We noticed that visitors' aversion for crowded settings is more than compensated for by their quest for adventure and uniqueness among other travellers. For travellers who exhibit a high degree of thrill seeking and a need for novelty, unfavourable attitudes about crowded alternatives have been reduced or even reversed. According to these researches, businesses could target thrill seekers seeking unique experiences in the event of a pandemic.

This study is innovative and important since few studies have focused on the influence of the pandemic on the crowded option. The research has four goals. The first was to look into the impact of the COVID-19 epidemic on travellers' travel preferences. Because the detrimental impacts of crowding are likely to be high during and soon after the COVID-19 pandemic, the second goal was to see if avoiding crowded travel and hospitality alternatives is more important. The final goal was to see how the COVID-19 pandemic's importance influenced travellers' selection for crowded (vs. non-packed) options. The findings of this study contribute to a better understanding of travellers' reactions to crowded options during a critical health crisis, as well as the development of proactive management strategies to mitigate the pandemic's negative consequences, such as dissatisfaction, service failure, negative behavioural intentions, image degradation, and revenue loss. Finally, this research gave some practical yet theoretically grounded recommendations for methods to promote recovery from the pandemic's detrimental consequences (Sigala 2020). The current study reveals that travellers with a high level of experience seeking and a need for uniqueness may be the major customer categories for businesses to target as they try to rebound from the pandemic's considerable decline in travel intention. This study is cutting-edge and timely, given the pandemic's effect on congested alternatives.

2   Objectives of the Study

Three goals were set forth for the research.

- Traveller preferences were examined in the first place to determine whether the COVID-19 pandemic had an impact.

- To examine whether people's desire to avoid crowded travel and lodging grew as a result of their fear of crowding during and after the COVID-19 epidemic
- Travellers' preferences for packed (as opposed to non-packed) choices were evaluated in a third research.

3   Literature Review

3.1   Social Separation is Facilitated by the Behavioural Inhibition Mechanism

According to one view, people are drawn to big gatherings for affiliation reasons. While social interaction helps relieve negative emotions, interpersonal discussion, praise, and comparisons to others all contribute to the development of positive moods. Individuals favour group travel to solo travel. While these advantages may motivate some individuals to assemble, it is equally possible that they may avoid one another. The January retains a unique identity in comparison to the rest of society. As observed, visitors to an area where COVID-19 is growing keep their social distance. The idea of affiliation motivation may be used to characterise social distance. The Behavioural Approach System (BAS) and the Behavioural Inhibition System (BIS) are distinct systems.

3.2   Consumer Behaviour and the Idea of Crowding

Density is simply one component that should be considered when assessing a service experience; the other is congestion. Crowding is a subjective evaluation of perceived density based on established standards, conventions, and rationales. Individuals despise this form of test due to its difficulty and disadvantages. Consumer pleasure decreases when stores and service providers are crowded, according to research. Numerous factors must be taken into account in order to fully appreciate the effect of crowding. For example, prior study established the origins of human crowds. Machleit, Kellaris, and Eroglu defined two types of crowding: human and spatial (1994). Density happens when we see an area as confined by the sheer number of people, objects, or stimuli that occupy it. There is no such thing as a one-size-fits-all approach to congestion. This evaluation considers an individual's expectation level, time restrictions, and general tolerance for dysfunction. Additionally, the kind of purchase purchased (leisure vs. practical) may influence customer opinions. While crowds are required to enjoy a sports event, a concert, or a bar, the same cannot be said for shopping malls. Numerous studies have been conducted on the causes and wide-ranging consequences of crowding, including how satisfied individuals.

3.3   Health Concerns and Crowding have an Effect on Passengers' Decision-Making

To a lesser degree, travellers' attitudes and destination choices are impacted by their perceptions of health hazards, which have a direct effect on their personal well-being and overall pleasure with the trip. Infection risk is only one of numerous health issues that have a direct and long-term effect on the number of visitors. The SARS outbreak

destroyed the Asian tourist industry in 2002–2003. Due to the social distances between nations or areas and tourists' personal risk assessments, the COVID-19 pandemic has completely eliminated worldwide tourist demand since early 2021. Numerous research on the influence of COVID-19 on tourist demand have sought to establish a link between the pandemic and people's tolerance for crowded environments.

4   Predictions About the Future

4.1   The Main Impact of COVID-19's Salience

Due to the COVID-19 epidemic's prevalence, we anticipated that travellers' perceptions of crowded (vs. non-crowded) alternatives would evolve, as would their choices for crowded (vs. non-packed) alternatives. Additional studies, such as those detailed above, might bolster our core premise.

To begin, our prediction is backed up by the idea of behavioural activation and inhibition. The behavioural activation system is responsible for controlling approach behaviour, while the behavioural inhibition system is responsible for controlling avoidance behaviour. Individuals with COVID-19 January are aware of potential danger and uneasy in their presence when their behavioural inhibition mechanism is triggered. Fear of sickness has an influence on how people perceive pandemics. Fear is induced when a pandemic, such as COVID-19, stimulates the behavioural inhibition system. Individuals in January maintain a social distance to avoid emotional discomfort and to protect themselves against COVID-19 infection.

The regulation of human social interaction, especially physical and psychological touch, is another crucial component of a pandemic response. The vast majority of infectious illnesses are largely spread by personal contact. The majority of civilizations have judged that increasing social isolation is the most effective technique for limiting the COVID-19 pandemic. While social interaction is vital, the psychological influence is as critical. It is possible to foresee how a disease pandemic would influence human preferences due to the contagion effect. "Physical contact is used to transfer the essences or qualities of a person or thing to another object or person". Individuals usually avoid things that have been previously used or show traces of prior usage. That is accurate. People will avoid interactions with others whenever feasible, according to social contact theory. Avoiding a crowded environment or region, according to the crowding hypothesis, is a vital survival strategy. We expect that when a pandemic danger occurs, this inclination will be magnified.

H1 Congested travel and housing choices will lose popularity as a result of the COVID-19 pandemic's notoriety.

4.2   Moderating Role of Traveller's Sensation Seeking

Numerous variables contribute to why people travel. The choices and decisions made by travellers differ in part owing to their distinct personality traits and features. Individual preferences for sensory stimuli have an influence on the risk response as a whole. A previous research revealed that humans' "optimal degrees of stimulation and arousal"

may be explained by genetic or biological traits. The Oxford English Dictionary defines sensory seeking as "the desire for a varied variety of feelings and experiences". "We all need novelty, strong emotions, and excitement, and these desires express in a number of different ways throughout our lives. Novelty, arousal, and experience have all been related with tourist incentives in the context of travel and hospitality. Tourists and visitors to the nation are persuaded by the populace's risk-taking and thrill-seeking impulses. Pizam et al. (2001), for example, revealed that thrill seekers favour risky activities such as extreme sports. As a consequence, thrill seekers gravitate toward riskier activities and environments. Furthermore, Kim et al. (2020c) established a relationship between sensation seeking and a preference for risky diets.

Sensation seeking impacts people's perceptions of danger and their travel behaviour, individuals who are attractive are more prone to pick dangerous settings and activities. This implies that individual responses to the COVID-19 danger will differ. Low-sensation seekers will do more effort to prevent damage. Individuals with a strong desire for fresh and intriguing travel experiences will gravitate toward riskier activities. To summarise, we anticipate that passengers who place a higher premium on feeling over experience would go for more congested routes, while those who prefer calmer routes will opt for the latter.

H2 is the formally advanced hypothesis. The COVID-19 breakout will have minimal influence when picking between packed and less crowded choices. Visitors seeking thrills who are fearful about the COVID-19 danger will choose more crowded attractions (vs. low).

4.3 Overview of Empirical Investigation

The notions mentioned above are backed up by experimental data, additionally, a number of studies shown that our augments have boosted their external validity. In the COVID-19 pandemic, we used two approaches: one based on measurement and one based on manipulation. By January 2022, the events of COVID-19 had had a profound effect on daily life around the planet. This research enlisted only participants from the United States to prevent any country-specific effects. Our empirical studies make heavy use of Amazon Mechanical Turk volunteers (Table 1). The authenticity and dependability of this online panel have been fully shown in the tourist industry. The following table summarises theoretic-empirical results.

5 Study-1: The Investigation of the Basic Hypothesis (H1)

The first research tested the hypothesis that passenger choices for crowded and uncrowded alternatives would be affected by the incidence of COVID-19 (Table 2) Chart 1.

Table 1. Participants' personalities and experiences in research

Demographic profile	Factor	Study-1 (n = 198)	Study-2 (n = 263)	Study-3 (n = 230)
Gender	Male	48.3	57.7	52.2
	Female	51.7	42.3	47.1
Age	18–29	31.1	26.3	17.9
	30–39	33.4	31.7	34.4
	40–49	17.7	19.5	17.8
	50–59	8.2	10.3	17.6
	60 and above	9.6	12.1	13.2
Race	Hindu	78.7	74.9	73.9
	Muslim	13.8	6.2	4.9
	Christian	5.7	7.4	7.5
	Jain	0.8	8.1	11.7
	Sikhism	0.5	3.8	2.1
	Others	0.8	1.5	1.3
Education	Less than High School	0.6	0.6	1.5
	High School	19.4	21.1	28.3
	Graduates	53.2	59.4	52.1
	Post Graduates	26.8	19.2	18.4
Family income	Less than 30,000	15.4	15.1	13.6
	30,001–60,000	29.3	33.1	32.4
	60,001–90,000	24.5	24.9	24.1
	90,001–120,000	13.1	11.9	15.4
	120,001 and above	17.9	14.4	14.9
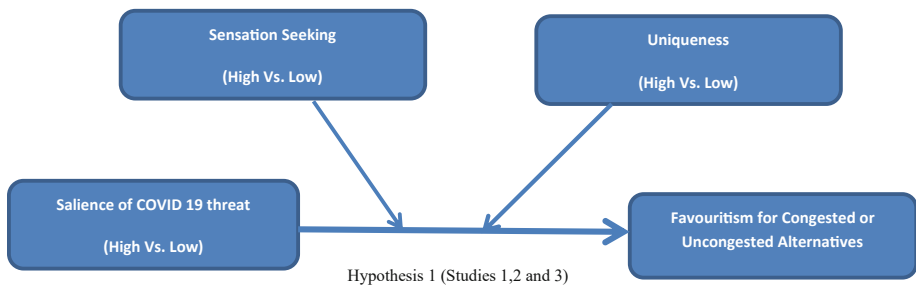
Chart 1. Hypothesis 1 (Studies 1, 2 and 3)

Table 2. A conceptual framework and a synopsis of relevant research

Study name	Particulars	Design	Results
Study 1	Using the Covid – 19 salience scale to evaluate restaurants	IV: Presentation of a variety of options (counterbalanced) DV: Non-crowding vs crowding: preference	H1 supported
Study 2	Travel evaluation in the context of high Covid – 19 significance	IV: Option presentation (counterbalanced) DV: preference for crowded or non-packed	H1 supported
Study 3	An in-depth look at Bangalore's tourist attractions is provided	IV: The 19th threat salience score for Covid-19 DV: Non-crowding vs crowding: preference	H2 supported

There are a lot of people at option A, but option B has a smaller crowd.

Option – A   Option – B

Pic1: Represents the option – A   Pic2: Represents the option – B

5.1 Design, Technique, and Subject Matter

In January 2022, Amazon MTurk recruited 198 Bangalore people from an online panel (51% female, average age 38, standard deviation 13). They were assigned randomly to one of two conditions there are a lot of people in Option A, but there aren't as many people in Option B since Option A is packed with people and Option B isn't as packed with people. Participants were asked to envision themselves visiting a city during the COVID-19 epidemic and looking for food. They were tasked with the task of locating two businesses. Restaurant A's marketing efforts used photos of a crowded scene, whilst Restaurant B's featured images of a less congested environment. As seen in Fig. 1, restaurant A utilised photos of an empty room and restaurant B used photographs of an overflowing space; as a consequence, both restaurants were compelled to build a single dining facility. The restaurants' perceived popularity was assessed using a seven-point scale, with one being "certainly" popular and seven being "obviously" popular.

5.1.1   Results and Discussion

Images of crowded images of unoccupied restaurants (M = 4.06, SD = 2.08) were viewed as less popular than restaurants (M = 5.10, SD = 1.82; F (1,197) = 14.57, p.001, 2 = 0.071). In the second experiment, 2(1) = 38.16, p.001, participants' preferences for restaurants were different in both experimental scenarios. When the room was not fully occupied, participants were more likely to choose Option B (82% of the time) than when it was (38.8%). The sheer amount of people in the photo influenced participants' perceptions of the eateries. Compared to when it was represented as busy, Restaurant A's evaluations were higher when it was depicted as less crowded (M = 5.72, SD = 1.06). Figure 3 shows that non-packed customers gave Restaurant B a better rating than crowded customers (M = 5.72, SD = 1.08); F (1,197) = 3.92; p = 0.049, 2 = 0.020). According to the findings of Study 1, it is obvious that the prevalence of COVID-19 has an effect on travellers' preferences for crowded vs. un-crowded alternatives. Many individuals dislike crowded restaurants more than others who believed the COVID-19 outbreak was not severe at all.
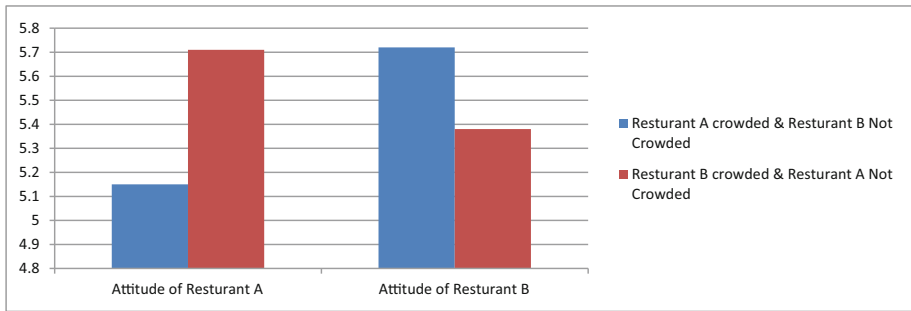
Fig. 1. Representing restaurants crowded vs non-crowded. Results of study 1

5.2   Study 2: Analysis of the Primary Hypothesis (H1) in a New Environment

The purpose of Study 2 was to recreate the parameters of trip activities as described in Study 1. We were debating whether or not to take an international vacation. Two high-risk behaviours were used to test our principal hypothesis. We focussed on the basic mechanism behind H1. Because a person's preference for crowded (as opposed to un-crowded) options is driven by their perception of risk, crowding should have no influence on existing dangerous behaviours. No matter how packed the roads are, motorists should always use care. In other words, if H1 is correct, risk-taking preferences should stay constant as population density increases.

5.2.1   Design, Technique, and Subject Matter

In January 2022, Amazon MTurk recruited 263 Bangalore people (42% female, 40 average ages, SD = 13.41). Each participant was randomly assigned to one of two

conditions (crowding of activities: crowded people Option set I & non-crowded people Option set II vs. non-crowded people Option set I & crowded people Option set II).

Prior to the exam, participants were instructed to read COVID-19 material in order to heighten their anxiety. Following that, as was the case in Study 1, participants were told that they would soon be departing on vacation. Both with and without a crowd, a visit was represented. In the second case, Option set I lacked candidates, but Option set II brimmed with them. Following that, pupils were asked to choose four options from an array of eight.

5.2.2   Results and Discussion

We tallied the number of selections picked for each option set. Our report will focus on the results of choice set I, since the repercussions of option set II should be equal. Individuals in Option set I chose diverse types of holiday activities in both testing situations. As seen in Fig. 2, people that were packed had a lower mean and standard deviation (M = 2.34, SD = 0.66).

In other words, we used the same reasoning to evaluate potentially risky behaviours. Because both the non-packed and crowded groups selected multiple hazardous activities, there was no statistically significant difference in the number of unsafe activities chosen by each group.
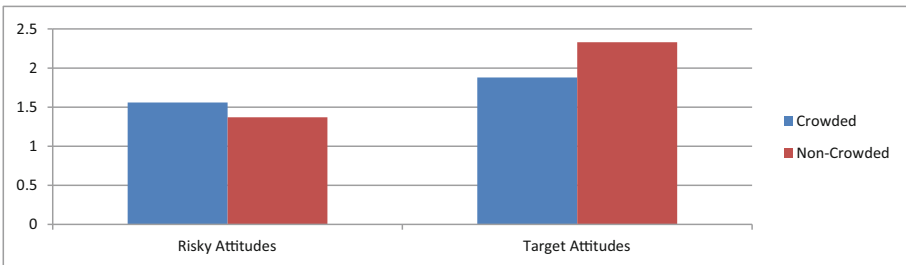
Fig. 2. Representing respondents attitudes crowded vs non-crowded. Results of study 2

The results of Study 2 corroborated our first hypothesis. To begin, the results from Study 1 were replicated using travel-related research stimuli. Participants verified Hypothesis 1 by showing a lower preference for congested modes of transportation (as compared to less crowded modes). However, under potentially life-threatening travel situations, there was no obvious preference for crowded (as opposed to less crowded) activities (regardless of COVID-19 salience). As a consequence, one of the most crucial factors is whether or not consumers associate perceived traffic congestion danger with less hazardous travel activities.

5.3   Study 3: Replicating a Different Configuration for Selecting a Vacation Activity

The research focuses on reproducing previously reported results in order to maximise generalizability. The travel activity selected was used to assess the perceived danger

presented by COVID-19. Due to our past travel experience, we were able to influence this result.

5.3.1 Method: Subjects, Design, and Procedure

In January 2022, 230 Bangalore residents (46% female, average age 42, SD = 13.53) paid to participate in an online panel. The participants were assigned randomly to one of two experimental conditions (crowding of activities: Condition #1 (people in a crowded setting vs. individuals in an un-crowded scenario) vs.

They were first taught to pose as visitors seeking two distinct types of amusement ([Option A] vs. [Option B]). As seen in Fig. 3, the degrees of congestion varied significantly between the two options. Participants selected one activity and gave it a seven-point rating on a seven-point scale. Following that, participants were asked to score each choice on a 1-to-7-point scale based on their perception of its crowdedness. Additionally, a seven-point scale was used to gauge participants' perceptions of the situation's implausibility and realism. Following the preceding experiment, participants were informed about COVID-19 on a systemic level. They were asked to rate the danger on a seven-point scale, with one being "not at all life-threatening" and seven representing "very serious/life-threatening." Finally, in addition to their replies to the preceding questions, participants were asked to describe a prior visit (yes or no), a recent trip (yes or no), and their overall travel excitement (1 = not at all, 7 = a lot).

5.3.2 Results and Discussion

In comparison to condition #1, the second condition (M = 6.01, SD = 1.51), Option B was more congested. $F(1 .228) = 192.14$, p.001,2 = 0.459 was shown to be correct. M = 5.71, SD = 1.49 and 5.82, SD = 1.35, F (1.227) = 0.36, p = 553 and 2 = 0.001 respectively) (M = 5.71, SD = 1.49 and 5.82, p = 553, 2 = 0.001 respectively). The most realistic conditions were #1 and #2.

We used Hayes (2017) process analysis using Model #1 to evaluate our hypothesis. (i.e., independent variable: perceived COVID-19 danger; moderator: activity crowding; dependent variable: preference for Option B), Only the interaction effect (effect = 0.42, t = 2.58, p = 0.011, 95% CI: [−0.747, 0.100]) was determined to be significant (effect = 0.42). Option B's relative preference was dropped in Condition 2 due to the fear of COVID-19 (T = 2.02; P = 0.046, 95% CI: [−0.496, 0.005)). With a more positive (+1SD in measurement, estimated M = 5.35) than a negative (−1SD in measurement, estimated M = 4.47) impression of the COVID-19 danger, Option B was clearly the victor. In the presence of crowded settings, the perceived hazard of COVID-19 a 17% increase in preference for Option B over Option A (effect = 0.18, t = 1.62, p = 0.109, 95% confidence interval [−0.039, 0.384]). The pattern is shown in more detail in Fig. 2.

We assessed the impact of these effects using a similar sample and three past experiences as predictors. While none of the covariates were statistically significant (all PS greater than .324), the interaction effect was. Indeed. 108] Due to the fact that the impact was consistent among individuals, it was also consistent in aggregate. Study 3 confirmed the conclusions of Studies 1 and 2, allowing for a larger applicability. Additionally, we

looked at how individuals saw the threat posed by COVID-19 when it came to organising holiday activities. Due to our past travel experience, we were able to influence this result. In Study 3, which also evaluated past travel experiences, this impact was seen independent of the kind of trip activities.
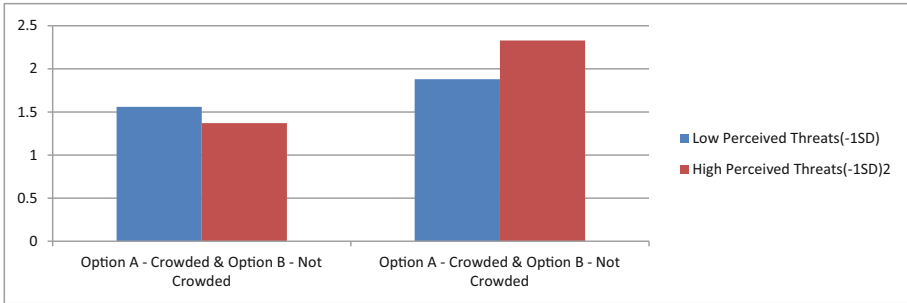
Fig. 3. Representing respondents perceived threats crowded vs non-crowded. Results of study 3

6 Implications

6.1 Theoretical Contributions

These breakthroughs resulted in theoretical advancements. To begin, this study advances our knowledge of how human crowding affects travel choices during disruptive events and global health crises. For example, as illustrated in this paper, the present COVID-19 epidemic highlights the implications of human overpopulation. Global health concerns may influence a traveler's choice for and desire to visit highly populated (vs. sparsely populated) regions. These statistics emphasise the critical role of tourism operators in effectively reducing congestion levels in normally congested locations. This study advances our knowledge of how people's perceptions of risk influence their processing and assessment of tourist alternatives.

Individuals' preferences may evolve as a consequence of the COVID-19 outbreak, driving them to pick the more popular (rather than the less popular) choice, especially when the risk level is high. The epidemic's psychological toll may impair other people's judgement and decision-making. For instance, the pandemic may have an effect on how the same incidence or incident is seen, either positively or negatively. Individuals should be aware of their nearby surroundings while arranging a trip in order to minimise the framing effect (e.g., congestion). For example, the virus may be capable of mitigating context-dependent effects such as the compromise effect, the decoy effect, or the decision type impact.

Additionally, this research adds to the existing body of information about contagiousness. As an endearing expression, it alluded to the pernicious influence of another person's touch or relationship. Participants who lived near to a COVID-19 pandemic adjusted their travel plans in response to congestion. For instance, second-hand travel

bags may be similarly rated. Individuals may lose interest in acquiring antiques as a consequence of the epidemic. It is crucial to remember that an infectious disease's prevalence has a key impact in its contagious nature.

According to the present study's results, as the danger of COVID-19 rose, consumers' desire to avoid crowding increased. This was achieved through recommending restaurants, vacation places, and favourite activities. Additionally, we observed that visual representations of available alternatives might influence how congested an area.

6.2 Practical Implications

Numerous managerial and operational consequences flow from this research. Marketers of tourist destinations must first determine if visitors' purchase choices are impacted by their sense of congestion. As a consequence, marketers must establish ways for managing client traffic under strain, such as health dangers, in order for managers to accommodate as many customers as possible while maintaining a calm demeanour among their staff. Limiting the amount of individuals who can come into contact with one another during a pandemic may help alleviate people's fear of contact. Additionally, crowd intelligence may be gleaned via the use of mobile phone apps and social media platforms.

7 Conclusions

We hypothesised that visitors would be able to pick less crowded means of transport and accommodation during the epidemic's peak, based on the findings of our research. Our five studies all came to the same result. The first research tried to forecast traveller preferences for choices including overcrowding vs. crowding. Assume you're on vacation in a city and are forced to choose between two restaurants, one of which is packed and one that is not. Numerous travel activities were classified as having a large or small customer base in Study 2. Prior travel experiences were shown to have a significant impact on the study's findings.

7.1 Limitations and Suggestions for Future Studies

The limitations of this study might serve as a springboard for future research. Due of the difficulty of rapidly collecting large-scale samples during a pandemic, this research used scenario-Behavioral activation systemic materials. Our estimates would be more credible if we performed fieldwork and requested critical opinions from participants.

Second, this research demonstrated a considerable reduction in the systemic risk associated with COVID-19 behavioural activation. Individuals' true reactions to the pandemic danger are likely to differ. This must be taken seriously in future study, which should include behavioural data from real-world situations (e.g., hotel usage data or visitor statistics).

Social crowding has a harmful influence on passenger choice, which is not examined in this research. Future study should focus on factors that may contribute to avoidance, such as setting and customer traits.

As previously noted, the link between congestion and customer contentment is very variable depending on the client's personality, use incentives, and cultural values. A forthcoming research suggests that psychological, societal, or individual aspects may influence how individuals perceive crowding.

7.2 Impact Statement

Several of the study's conclusions are considered and/or speculative. To begin, it investigates the influence of the COVID-19 epidemic on people's travel patterns worldwide. In the case of a COVID-19 pandemic, the second component of this research assesses whether avoiding crowded travel and accommodation alternatives is important. Additionally, this study will determine if the COVID-19 epidemic has an effect on travellers' choices for crowded (vs. un-crowded) alternatives. During a health crisis, this research examined travellers' responses to crowded options. Additionally, this study contains advice for the most effective pandemic recovery. Significant decreases in travel intentions as a consequence of COVID-19 have a disproportionate impact on thrill seekers and those with a strong desire to travel in an unorthodox manner.

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Houseboat Tourism and Sustainable Development Goals: Integrating Local Community of Kumarakom

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Abstract. The tourism business has the prospective to impart, directly or indirectly, most of the sustainable goals. The promotion of entrepreneurship and small businesses can play a momentous role in endowing less favored groups and poverty reduction goals. This can be achieved through the sustainable tourism development approach which would create a positive impact on the community's livelihood enhancement. Literatures show that tourism is one of the powerful forces of global economic growth and presently provides for one in eleven jobs worldwide. Public/private collaboration and businesses are in-excludable part of tourism development because it has increased awareness about the role of tourism in the delivery as the biggest establishing service sector in the country. Kumarakom is one of the most protuberant tourist destinations in Kerala state, explicitly centered on Backwater Tourism. This is an exquisite tourism product that delivers a unique travel experience to the legatees. Houseboat Tourism Industry contributes substantially towards SGDP (State Gross Domestic Product) nearly 10% of the total productivity of the state. The present study is an attempt to evaluate the operations of Houseboat Tourism Industry in Kumarakom and its contribution towards the enhancement of the livelihood of the local community and their socio-economic development on par with sustainable development goals - Decent Work and Economic Growth. The paper assesses the role of education of the local community to get involved in the Houseboat Tourism business in Kumarakom to reap substantial benefits from this sound industry. The study employs both quantitative and qualitative approaches with the support of extensive literature inputs. Questionnaire and field investigations are used as a major tool for data collection.

Keywords: Tourism · Sustainable development goals · Houseboat Tourism Industry · Kumarakom · Socio-economic development

1 Introduction

The beautiful backwater village, Kumarakom attracts a good number of domestic and foreign tourist who wish to explore exotic beauty of backwaters and canals. Houseboat

is a modified version of traditional kettuvallam, the large boat of pasts mostly used for the transportation of the goods. Eventually kettuvallam started disappearing away from the usual sights of the backwaters in Kerala. Later witnessed the innovation and the transformation of the kettuvallam into houseboats which made a huge impact in the whole tourism industry in Kerala especially in Kumarakom. As per records, 120-odd houseboats and 58 small boats that are in operational in Kumarakom.

Houseboat tourism program in the backwater region upsurges multi-dimensional impacts including economic, sociocultural and bio-physical environment. There is no doubt the houseboat operation is the prime element of backwater tourism rather than hotels, homestays, resorts and other service sectors. Responsible tourism activities such as toddy tapping, fishing, country or shikar boats and various local handicraft work are the major opportunities of local public to find source of income under the banner of backwater tourism.

Houseboat tourism activities create skilled and unskilled employment openings for local community and at least at least one member from each family presently engaged in tourism activities as houseboat operators, onboard-hospitality service etc… Introduction this concept assured stabilized income for many families either through direct employment in houseboat tourism industry or by engaging various allied services. Development through above mentioned concept in the backwater region affected socio-cultural changes of the host community.

Interaction of the host community with the guest community has changed the perception towards the lifestyle. Preservation of local culture, religious rituals and ceremonies and local crafts, etc. are the result of houseboat tourism. This even helped to enhance the quality of student's education in the region. Increase in awareness level and enhanced education helped a lot for the implication of responsible tourist concept at the destination.

The preferred study gives due emphasis on sustainable houseboat tourism operation in Kumarakom by evaluating the influence of education and local community participation in house boat tourism over the past decades. The ongoing attempt also examines the various responsible initiatives can be introduced in the destination under observation to generate longevity for the introduced tourism product as well as to generate stable source of income for the local public in a more sustainable manner.

The current study follows a sequential framework right from the introduction, where it discusses about the background of the study then a detailed overview of the past related studies in the literature review part. From the lights of the previous contextual reviews the present attempt addresses a relevant problem and instigated study significance too with certain objectives to attain the study aim. To derive the study outcomes as per the study objectives the paper has followed a concrete research design which helps to generate notable inferences and recommendations to conclude the study.

2 Literature Review

Government of India has formulated exclusive policies to overcome the pandemic and reinstate the position of Tourism in India as a large industry. Various international bodies including World Travel and Tourism Council predicted the annual growth to be 8.8% between 2011 and 2021, Arunmozhi, T., & Panneerselvam, A. (2013. India could achieve the same and working on an estimated growth of 30% to reach the further target set.

Kerala has seen a remarkable progress in tourism during the last decade, tourism development in the state is contributing immensely towards the socio-economic development of deserving local communities but still they are striving to secure their financial recourses for entrepreneurship. Lack of knowledge regarding the prospects of tourism and non-availability of skilled human resources shows the need of extra effort in preparatory education, Kokkranikal, J. J., & Baum, T. (2002).

Houseboat cruise provide a fantastic experience to tourists and it's an opportunity to explore the amazing beauty of backwaters, Asha et al. (2016). Successful strategies are essential for addressing problems caused by houseboat tourism pertaining to social, economic, and environmental factor and stakeholder's effective involvement in decision making process is deciding the success of Backwater Tourism Management, Joseph, E. K., et al. (2020).

Houseboat tourism in Kerala represents a relatively new tourist product as it's introduced in 1990s. Later started providing constant contribution towards social economic development of Kumarakom by providing employment opportunities for the local community. Videos entrepreneurs running small restaurants coffee shops and other allied businesses nearby the lakes are also benefited to houseboat tourism, Kokkranikal, J., & Morrison, A. (2002).

Many studies initiated pertaining to ecology and the environment in the backwater region. But this study was significant evidence which is stating that houseboat tourism negatively resulted in the water fauna sources in Kumarakom. The Below mentioned Figure shows the effect of houseboat tourism on fish resources and production. From the study, 50% of people agree that the increase in the number of houseboats highly affects fish production in the backwater region. And 30% report that it does not affect fish production and 20% opinion that it slightly affects fish production.

Figure 1 shows the effect of houseboat tourism on the water environment. In the study, 63% of people mentioned that it highly affected the water environment, and 24% opinion that it slightly affected the water environment 13% opinion that it did not affect the water environment, John, R. M. (2018).
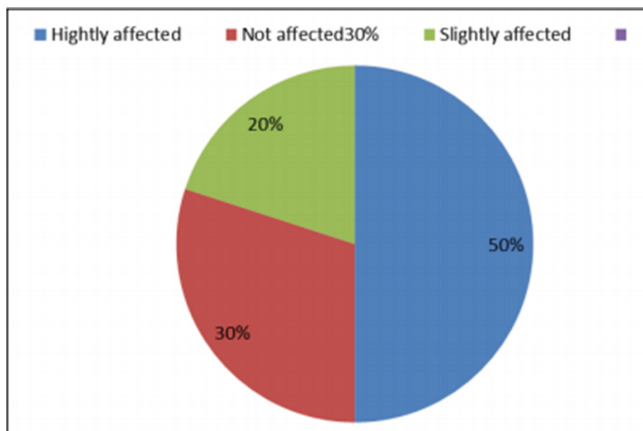
Fig. 1. Effect of house boat tourism on fish production

A study on the houseboat tourism on water environment and fish production in Kumarakom.

3 Statement of Problem

Kumarakom is a backwater region and if technically speaking this region situated below sea level and the local communities are mostly dependent on agriculture as the major source of their income. Kumarakom is known for its backwaters and Canals. Also known for different varieties of fish resources are available and people were depending fishing also as a source for their income. Even after the conversion of Kettuvallams into house-boats, it takes time to realize the significance of this particular unique tourism sector to use as a significant source for their income, and were having doubts regarding the business opportunities in the backward region due to lack of awareness.

Initially, there was no visible development in Kumarakom as a result of houseboat tourism but after a certain point of time, the regional development also becomes visible as the demand increased. As it mentioned in the beginning people were not involved in House boat-related employment activities in other words local people were hesitant to be part of houseboat tourism activities. There are many reasons for the above mentioned and education was one of them. People hesitated to interact with especially foreign travelers due to the communication barrier. It has to be analyzed whether the present education system is satisfying the requirement of local communities in terms of communication which is essential to be part of houseboat tourism activities.

4 Objectives

To examine magnitude of community participation in houseboat tourism sector.

To study about the contribution of the houseboat tourism sector towards the livelihood of local community at Kumarakom.

To assess the role of education of the local community to reap substantial benefits from the houseboat tourism sector.

To examine the role played by the houseboat tourism stakeholders with regards to the implication of responsible tourism concept in Kumarakom.

5 Research Design

Primary data collected through questionnaire and field observation also used as a major tool for data collection.

5.1 Sampling

Simple random sampling method is used for the collection of data.

6 Analysis and Inferences

6.1 Hypothesis: 1

H_0: there is no significant association between houseboat tourism and earning standards of the local community in Kumarakom.

H_0: there is a significant association between houseboat tourism and the earning standards of the local community in Kumarakom (Tables 1, 2).

Table 1. Frequency table for occupation and main source of income

Variables		Below 5000	500010000	1000015000	1500025000	Above 30000	Total
Main sources of income	Agriculture	3	10	7	5	-	**18**
	Industry work	-	1	1	2	-	**4**
	Shops	-	1	2	4	4	**11**
	Tourism jobs	-	5	20	35	9	**69**
	Others	5	1	2	3	2	**13**
Total		8	18	32	49	15	**115**

Monthly based income results**

Table 2. Chi-square result for association between houseboat tourism and earning standards of the local community in Kumarakom

Chi-square	Value	Df	Asymp. sig. (2-sided)
Pearson Chi-square	117.716 [a]	4	.001

The test results nullify the null hypothesis with the generated result value or the noteworthy 'P' score of 0.002 with Chi-square value = 117.716a. Thus, we can confidently reject the null hypothesis and completely rely on the alternate hypothesis that implies sturdy indications about the contributions of the houseboat tourism industry is remarkable towards the earning standards of the local stakeholders in Kumarakom.

The frequency table projects that more than 60% of the local community is relied upon and employed in tourism and its allied activities. Moreover, among this 60% of the population over 90% is having monthly income standards of more than Rs. 10,000 and 13% of the respondents are having more than Rs. 30,000 monthly incomes. These statistics will make us clear about the contribution of houseboat tourism towards the local community's earning standards in Kumarakom.

6.2   Hypothesis: 2

H0: there is no momentous difference of opinion between houseboat tourism development and the presents of responsible tourism initiatives from the local stakeholder.

H1: there is a momentous difference of opinion between houseboat tourism development and the presents of responsible tourism initiatives from the local stakeholder (Tables 3, 4).

Table 3. Cross tab for the difference of opinion between house boat tourism development and presents of responsible tourism initiatives from local stakeholder.

Count		Houseboat tourism development is sound in Kumarakom					Total
		1.0	2.0	3.0	4.0	5.0	
Presents of responsible tourism initiatives	.0	7	10	3	41	37	98
	1.0	5	7	0	3	2	17
Total		12	17	3	44	39	115

Table 4. Independent T-test result

Variables	Houseboat tourism development is sound in Kumarakom	N	Mean	T	Significance
Presents of responsible tourism initiatives	No	98	12.532	7.138	0.02
	Yes	17	4.927		

The inferences that can be drawn from the above analysis indicate the opinion that the majority of the population is thoroughly agreeing that the houseboat tourism industry and its development is very sound and tangible therein Kumarakom along with t-statistic value of 7.138. At a significance 'P' value of 0.002 which is less than the test significance score of 0.005. Here the test results are also indicating the poor initiative taken up by both the management and local stakeholders concerning responsible tourism measures.

More than 85% of the respondents are agreeing that there are no responsible tourism measures are followed or promoted around the destination. It may often question the sustainability of this potential industrial operation in Kumarakom as well as it tends to raise the environmental cost in the mere future. Thus, the analysis output generalizes that there is a momentous difference of opinion between houseboat tourism development and the presents of responsible tourism initiatives from the local stakeholder.

6.3   Hypothesis: 3

H0: there is no significant relationship between the means of education standards and community participation in the houseboat tourism industry in Kumarakom within different age cluster.

H1: there is a significant relationship between the means of education standards and community participation in the houseboat tourism industry in Kumarakom within different age cluster (Table 5).

Table 5. ANOVA test for assessing the difference in opinion among the means of education standards and community participation in house boat tourism industry in Kumarakom within different age cluster.

Estimators		Sum of squares	df	Mean square	F	P
Community participation in house boat tourism industry	Between groups	31.177	5	7.044	8.547	.000
	Within groups	83.823	110	.741		
	Total	115.000	115			

The ANOVA output infers about the relevance of education among the local community is having a considerable impact on their participation in the houseboat tourism industry. The 'p' value is < 0.005 which indicates a very strong positive association of education and progression in the community participation in the Kumarakom tourism belt. As per the p-value lies in between the benchmark allows rejecting the null hypothesis at the level of significance with a satisfactory F statistic value of 8.547.

Thus, the test results indicate that level of education of the community has been improved far better as it compared from the past two decades, from the descriptive statistics also it is visible that more than 75% of the rural stakeholders are having secondary educational qualification. Therefore, we can confidently conclude that the role of education is playing a key role in the improving stat of community participation in the Kumarakom tourism industry. Level of education and medium for communication is not at all a tiring barrier therein Kumarakom.

7 Findings and Suggestions

7.1 Tourism as a Major Income Generator

The establishment of tourism and the development of a destination is not an easy task at all. Every destination has its own USP's and providentially Kerala is a lucky state to have distinctive floral and faunal resources. Moreover, its geographical diversity, amazing green beauty makes it one of the must-see destinations in India.

In the early 1990s, the Alleppey and Kumarakom region located in the central part of Kerala witnessed a unique type of tourism named backwater tourism. Even though the backwater resources used for the cruise but never had a concept of tourism along with the existing one. The so-called Ketuvallams transformed into houseboats and used as a means for transportation, accommodation, and reconnoitering scenic beauty of canals and lakes in Alleppey - Kumarakom region.

On average 5 or 6 individuals from the local community are attainment opportunity to be part of houseboat tourism activities in terms of employment. Lakshmi Singh et al.

(2021) 5 to 10 people can rely on houseboat tourism activities by providing allied services per houseboat. The study and the analysis clearly showed that the houseboat tourism industry is contributing in terms of employment and plays a significant role in the socio-economic development of the region. 60% of the local community is directly related to houseboat tourism-related activities.

If we compare the living standard of people who are living in the Alleppey-Kumarakom region were completed depending on lake-based activities like fishing or getting clay from the lake or other related activities for their livelihood. But by the intro-duction of houseboat made a tremendous change even there in the lifestyle of people their money earning is increase like anything due to the involvement in tourism-related in activities that shows houseboat tourism sector is an inevitable part of local community people were living in and around Alleppey and Kumarakom region.

7.2 Education is not a Barrier

In the tourism sector, there is a saying that a travel services provider should have complete knowledge about the services which he or she offers through his or her business units. Another fact is that communication is playing a key role in the success of the travel business and assuring the satisfaction level of every tourist.

Kumarakom is considered to be a prime destination located in the central part of Kerala State and belongs to the district of Kottayam. The district has achieved 100% of literacy and school education is very common. Study results show that the literacy rate is high and the level of education of the common public residing in this area is also quite up to the expected level.

75% of rural stakeholders of houseboat tourism are having Secondary Education qualifications and a good number of people have skilled knowledge as well. It is an observation from the study that in houseboat tourism activity, majority of the employee belongs to the local community and certain categories like a chef and another skilled human resource has to be outsourced from other regions.

But in the tourism point of you, nothing is lacking in connection with common education. At the same time, if authorities take special care to create awareness among local people regarding the potential of the tourism industry especially houseboat tourism and back backwater tourism. Houseboat tourism as a new addition, awareness creation is essential among the young generation which would be helpful to understand the concept and potential of houseboat tourism from the very beginning.

Moreover, certain value-added courses about the travel and tourism industry and its potential in connection with marketing and service would help the local public to be part of the tourism industry in better ways. Regarding the skill-oriented training government authority or other concerned responsible organizations should take a lead to implement training institutes like Tour Guiding or Hospitality Management Hotel Management etc…

7.3 Absence of Responsible Tourism Initiatives

The status of the 'first Responsible Tourism Destination of the nation is backed by Kumarakom because of the responsible tourism initiative by the authorities and service

providers. The responsible tourism initiatives and activities implemented in the destination is widely recognized by the tourist community as well. But from the study, it is observed that the responsible initiates and guidelines are not being followed by the tourists and the service providers in the Kumarakom and many of them agree with that. Since the status is awarded for the destination, it is mandatory to preserve the eco-friendly environment and sustainable activities for the betterment of the destination.

This study shows that there is no proper monitoring system also not implemented in the destination. Tourism as a fastest growing industrial sector in the region, it is the responsibility of both hosting the guest community to preserve the existing environment, purity of water, quality of culture and the way of life of people. There are many studies initiated regarding the environmental preservation and results show that the quality of the environment is not up to the expected level. The lake and canal water is polluted like anything. It is essential to have an effort from the local community who are part of the tourism industry in order to preserve the environment and other natural resources. It is necessary to organize awareness creation programs in order to educate guests and host communities regarding the need of preservation of environment, water flora, and faunal resources.

7.4 Creeping up of Environmental Costs

Houseboat tourism in the Kumarakom region is certainly supporting the socio-economic development and well-being of local communities. At the same time study shows that environmental degradation is a major challenge and that has to be addressed with all priority. Every stakeholder who belongs to this region should plan a set of strategies that can eliminate the negative impact level so that the green beauty and exotic views of backwater resources will remain forever.

8 Implications of the Study

The study is indicative of the new development agenda to ensure that there is integration of sustainable development goals and in a localized context; all people enjoy peace and prosperity. The goals are extremely interconnected and will involve tackling sensitive issues like environmental regeneration. The implications are more commonly associated with another. The Sustainable Development Goals work in partnership and uncomplicatedness that make appropriate and right choices to improve life, in a sustainable way, for future generations.

9 Conclusion

This study focused on the local community benefits as a result of the establishment of houseboat tourism in Kumarakom. GeorGe, A. T et al., (2021). It is visible that the role of this newly established sector plays a key role in the enhancement of the local community life. The resources which are utilized under the banner of houseboat tourism is creating a kind of disturbance to the environment with regards to waste management, handling

plastic material, and other non-biodegradable resources. Both houseboat management, one who is serving as employees, and other allied service providers also should be involved in this revival process with all seriousness. Creating awareness regarding the preservation of this unique environment and ambiance only solution to get it retained from such kinds of negative occurrences.

Since this is a responsible tourism destination, adequate measures may be implemented by the Government authorities for the betterment of the expressing condition and preservation of this unique resource for the future. Environmental quality is a major challenge that must be considered always especially while the tourism industry is organizing various activities by availing natural resources and further studies may be conducted towards this end. Socio-economic development, community enhancement, quality education is achieved in Kumarkom because of the establishment of this unique tourism here. At the same time, the stakeholders should not forget their responsibilities to make Kumarakom as one among the must-see destinations in Asia if not in in the world.

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A Meta-analysis Review on the Effect of Corporate Environmental Responsibility with the Financial Performance of the Companies

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Abstract. CER is the daily requirements of every company trying to fit into the global sustainability. The company strives for a profitable business throughout the year with its business strategy, profit maximization, optimum utilization of resources and such. Apart from this, the company are also entitled to contribute a part of their profit towards society and the community at large. This paper seeks to provide the literature review of CER in relation to financial performance of the firms conducted by various researchers on a global context in a meta-analysis approach. The findings of the literature review enable to examine the length of the CER knowledge and its growth over the period of 20 years starting from 2001 to 2020 being taken for the purpose of the study. This paper focused on CER in relation to financial performance of the firms over the period of 20 years starting from 2001 to 2020. This approach is undertaken by using meta-analysis for the literature review under the PRISMA software, defining the inclusion and exclusion of the articles so selected for the purpose of the study.

Keywords: Corporate environmental responsibility · Company · Financial performance · Meta-analysis

1 Introduction

With the recent events that have gripped the entire nation, the soul concern of each being is to protect and preserve its living beings. The companies play a major role in its entirety. The economy has affected with a big down, wherein the culprit is humanity itself. The role plays for each being is being introduced with their task from time to time, but in vain. This can be termed as human nature or animal instinct whichever applies. The way company performs towards the environment depends upon its positive impact on environment and society. Hansen and Mowen (2007) argue that successful treatment of environmental concerns is becoming a significant competitive issue and meeting sound business objective and resolving environmental concerns are not mutually exclusive. Clarkson et al. (2011) provide empirical evidence to support this argument.

Egri and Ralston (2008) covered that Corporate Responsibility is well established international management literature and has a social and an environment aspect. Cunnigham (2009) provide those significant changes in global climate and environmental conditions result in a growing public awareness of the second element of corporate responsibility, making corporate environmental responsibility an important topic for both the business world and academic literature. Greening & Turban (2000) revealed that eco-friendly products or the reduction of CO2 emissions signals that a company cares about environmental issues and aims to distinguish itself from competitors that put less emphasis of CER. Ng & Burke (2005) found that diversity management programs positively influence a company's reputation. Sharma (2000) implied that the encouragement and reward of an environmentally friendly culture, the responsibility for a company's environmental impacts as well as the strategic importance of protection and restoration of the environment. Freeman R. E. et al. (2003) have pointed that the stakeholder-agency theory states that firms can be more efficient at adjusting to external demands and concerns, by addressing and balancing the claims of several stakeholder, as part of CSR strategies that include environmental practices, this efficient adaption leads to better performance and better financial outcomes. Waddock S. A. et al. (1997) stated that high levels of corporate financial performance (CFP) provide firms with more resources to engage in CSR and environmental practices (slack resources). Both slack resources and good management lead firms to outperform in corporate environmental performance (CEP) and CFP.

2   Methodology

2.1   Research Approach

The research goal is to examine the frequency of CER research in international management journals from 2001 to 2020 and to assess its impact for future journal in theory and practice. From the year 2001, there has been shortcomings on the number of articles based purely on CER; averaging three articles per year, the number however rose to a fair increase per year on an average. With the rejection of the Kyoto Protocol by the US, the IPCC released 'The IPCC Third Assessment Report to assess scientific, technical and socio-economic information relevant for the understanding of climate change (Kyoto Protocol, 2001). In 2019, where Earth Day and National Cleanup Day was organized to coordinate cleanup event held in all 50 US states and US territories (DeCarlo, 2019). This helped the research to outline the umbrella of CER and the changes it has undertaken in that specific time period, and whether or not these particular events influence the CER approach.
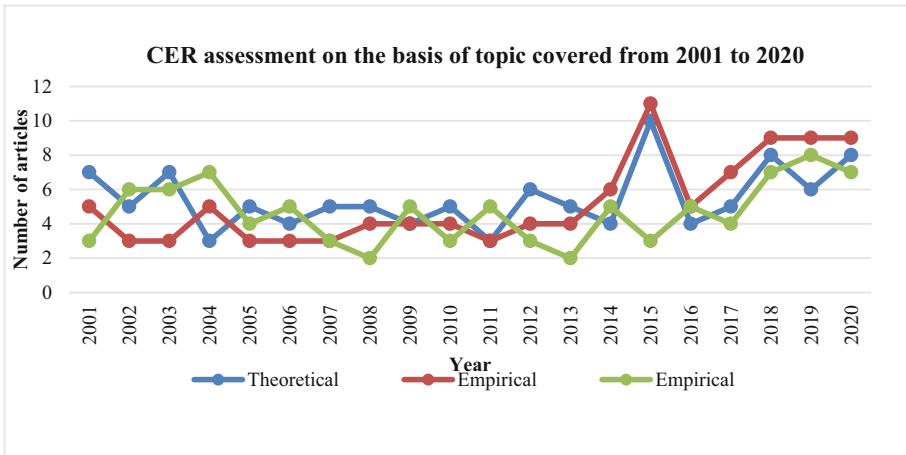
Fig. 1. CER assessment on the basis of topics covered from 2001 to 2020.

For conducting the study, an approach similar to that of Amos G. J. (2016) was made, who examined the prevalence of CSR manifestations based on 4-point systematic literature review on developing countries for a period of 10 years from 2004 to 2014. The paper focused on literature from 47 international journals which were revolving around the basic CSR theme of social, environmental and ethics. Lockett et al. (2006) revealed that environmental concerns and ethics as one of the most popular CR research issues combined with an increasing proportion theoretical papers relative to empirical studies and an overwhelming majority of quantitative studies. The theoretical assessment of the articles is shown in Fig. 1 for the purpose of the study. Egri and Ralston (2008) also noticed that an emphasis on ethics and governance more than social and environmental concerns with empirical studies outnumbering theoretical studies with a focus on wealthy, western countries. But the study lacked a balance between quantitative and qualitative studies as revealed by Lockett et al. (2006).

This study being focused on only the environmental aspect of the literature, the research and the results of the study is exclusively on CER addressing only the initial research objective.

2.2 Selection of Relevant Journals and Articles

For the purpose of the study, samples of peer-reviewed academic management journals were considered to cover the full range of CER research in the academic literature. A similar methodology of Amos G. J. (2016) was adopted for the study. Our study considered only articles written in English, published in Quartile 1 according to the popular journal ranking website SCImago.

The focus of the paper was selecting journals on the basis of their influence measured by the impact factor published in SCImago. Including peer-reviewed journals with high impact factors gave an edge on the acceptance of CER research-based articles (Haslam et al. 2008). According to Gulati (2007), they reflect the present state-of-art in terms of theoretical foundation, analytical rigor, and methodological soundness. This study has also considered specialized journals focusing only on environmental topics like Business Strategy and the Environment, Environment Management, Greener Management International. This method is similar to Amos G. J. (2016) and permits to compare the results with their literature reviews that focus on CER articles.

Table 1. Number of articles included for meta-analysis by publication. (*SCImago rating where Q1 means top quartile and Q4 means bottom quartile within a discipline).

Publications	Frequency	SCImago quartile*
Journal of Cleaner Production (JCP)	21	Q1
Corporate Social Responsibility and Environment Management (CSREM)	23	Q1
Journal of Business Ethics (JBE)	22	Q1
Resource Policy (RP)	16	Q1
Journal of Environmental Management (JEM)	23	Q1
Business Strategy and the Environment (BSE)	19	Q1
Strategic Management Journal (SMJ)	22	Q1
Sustainable Development (SD)	23	Q1
Academy of Management Journal (AMJ)	22	Q1
Accounting, Organisations and Society (AOS)	20	Q1
Environmental Management (EM)	23	Q1
Global Environmental Change (GEC)	22	Q1
Journal of International Business Studies (JIBS)	25	Q1
Journal of Environment and Development (JED)	25	Q1
Total	**306**	

The selection process ended with 14 international management journals. The international management journals consist of Journal of International Management (JIM), Journal of International Business Studies (JIBS), Journal of World Business (JWM) and International Business Review (IBR). All the journals were included in consideration to the SCImago ratings classifying on the basis of their quartile frequency publications as shown in Table 1.

The keywords used for searching CER articles were 'environmental responsibility', 'environment', 'environmentalism', 'nature/natural', 'green', 'ecology/ecological', 'sustainability', 'conservation', 'pollution', 'emission', and 'climate'.

2.3   Categorizing and Coding the Journal Articles

Several online databases were searched like EBSCO, JSOTR, Science Direct for CER articles. The following keywords were applied for the purpose of the search. To further disclose relevant articles which have a possibility to be ignored, a cross-referencing of all the citations and bibliographies was conducted. The selection process included 14 international peer-reviewed journals: Journal of Cleaner Production (JCP), Corporate Social Responsibility and Environment Management (CSREM), Journal of Business Ethics (JBE), Resource Policy (RP), Strategic Management Journal (SMJ), Sustainable Development (SD), Journal of Environmental Management (JEM), Global Environmental Change (GEC), and Journal of Environment & Development (JED).

To determine the implications of corporate environmental management in management practice and theory, a timeline of 20 years from 2001 to 2020 has been selected. It is to be notified that the research only deals with the content related to CER. Hence all the journal articles which did not fulfil this criterion were excluded from this study. As a result, the research has identified 306 articles dealing with CER and financial performance. The aim was to further classifying the articles to narrow down the material without losing grip of understanding the depth of CER research.

2.4   Meta Analysis Framework

Many researchers have explained their views on CER and CFP relationship (Sharma & Starik, 2002; Etzion, 2007; Ambec & Lanoie, 2008). A positive relationship between CER and CFP has been proved by many studies (Russo & Fouts, 1997; Bragdon & Marlin, 1972). The meta-analysis framework is shown in Fig. 2 and summary of the predicated relationships in Table 2.

The study is developed to understand the relation that exist between CER and CFP in collaboration with the various external pressures, corporate financial indicators and environmental performance indicators as shown in the Fig. 2. The figure is developed by conducting a meta-analysis on the literature on the CER and CFP relation from the period 2001 to 2020. For better understanding the relationship between CER and CFP, the explanation of each variable taken for the purpose of the study is pivotal.

The description of the variables taken for the purpose of the meta-analysis study is explained in the Table 2. The variables are taken in accordance with their relation with the corporate environmental performance of the firm.
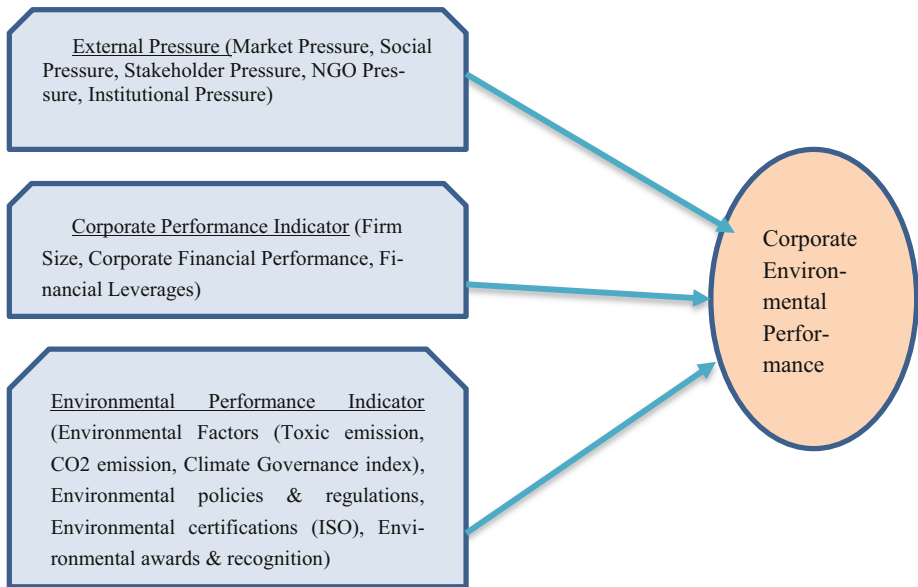
Fig. 2. Meta-analysis framework

Table 2. Description of the variables taken for meta-analysis and expected relationship with corporate environmental responsibility.

Variable	Description	Direction	Representative studies
External pressure			
Market pressure	The pressure that encourages the firms to consider environmental and sustainable procurement and production	+	Jiang and Bansal (2003); Sindhi. S (2012)
Social pressure	The pressure offered by the societal norms to perform environmentally towards the protection and preservation of the environment. In line with producing eco-friendly products in their firm	+	Das (2002); Reid and Toffel (2009)
Stakeholder pressure	To support the involvement of the stakeholder's contribution in environmental strategies and retaining the firm's reputation for a long term	+	He Yu (2001); Nishitani (2017); Rodríguez-Fernández et.al (2020)

(*continued*)

Table 2. (*continued*)

Variable	Description	Direction	Representative studies
NGO pressure	Collaborating with various NGOs for greener solutions and guaranteeing SRI	+	Sandhu & Arora (2012); Cavaco & Crifo (2014)
Institutional pressure	Amending to the industrial norms pertaining to the environmental laws and abide by them	+	Schafer (2007); Delmas & Toffel (2008)
Corporate performance indicator			
Firm size	The number of firms' total assets	+	Wagner (2001); Verwaal & Donkers (2002)
Corporate financial performance (RoA, RoE, RoS, RoI, Tobin's Q)	Corporate financial performance of the firm over the period of the time	+	McKinley (2008); Gotsshol et al. (2014); Manrique & Marti-Ballester (2017)
Financial leverages	Firms financial risk measured	+	King et al. (2001); Oba et al. (2012)
Environmental performance indicator			
Environmental performance factors (Toxic emissions, CO2 emissions, Climate governance index)	Firms' environmental performance measured in terms of the pollutants emitted in the form of toxic emissions, CO2 emissions and such	+	Nakao et al. (2007); Griffin and Sun (2012); Chen & Lai (2006)
Environmental policies & regulations	Environmental rules and regulations as stipulated in the environmental laws framed for the purpose of controlling the environmental violations by the firm	+	Sharma & Henriques (2005); Moneva and Cuellar (2009); ISO 14001 (2015)
Environmental certifications (ISO)	The market has the intention of positively reacting to the firm's recipient of ISO Certifications and awards	+	Potoski and Prakash (2005); Jacobs et al. (2010)
Environmental awards & recognition	Firms receiving environmental awards tend to grow internally and impress their stakeholders for future benefits	+	Boiral (2007); Muhammad et al. (2015)

Table 2 explained the expected results obtained from the relationship between the financial performance and environmental factors which were provided a positive direction towards its acceptance in the environmental management strategies. If any variables were not in accordance with the essence of the study were excluded with caution. Variables which performed well with the financial performance of the firms were further analyzed using descriptive analysis as shown in Table 3.

3   Discussion

For the purpose of recognising the CER articles based on the relevant topic covered, theoretical assessments and the variables considered, meta-analysis was utilised with the help of PRISMA software. PRISMA software analysed the CER articles collected from the various databases numbering to 560 articles. These 560 articles were screened and 137 articles were excluded on the pretext of ineligibility in the study. Out of the remaining 487 articles, 122 articles reports were not retrieved and hence ignored. The final 365 articles were assessed, out which 59 articles were excluded (Fig. 3).
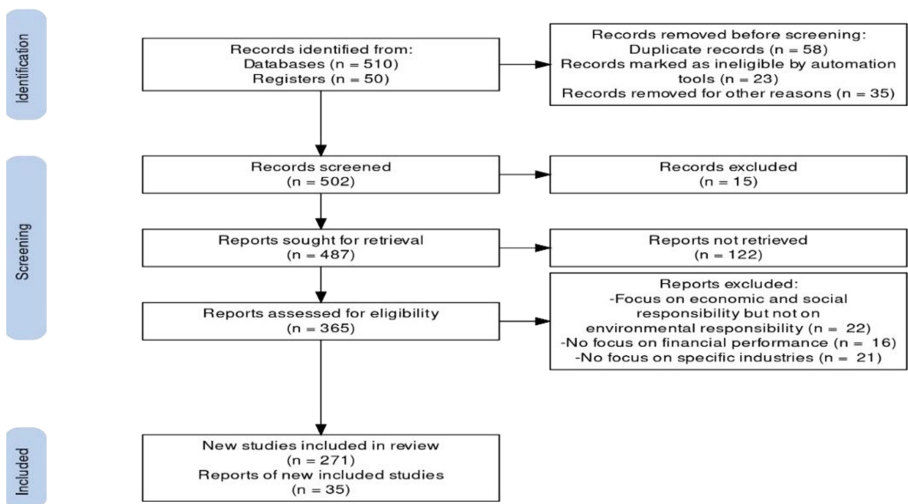
Fig. 3. PRISMA flow diagram

The study of these 306 articles helped to identify the 12 variables prominent for the purpose of detecting the relationship between CER and CFP of the firms.

Table 3. - Y relationship between CER and CFP Descriptive statistics and Correlation between the meta-analysis variables. [(a)-Market Pressure; (b)-Social pressure; (c)-Stakeholder pressure; (d)-NGO pressure; (e)-Institutional pressure; (f)-Firm size; (g)-Corporate financial performance; (h)-Financial leverages; (i)-Environmental performance factors; (j)-Environmental policies & regulations; (k)-Environmental certifications and (l)-Environmental awards & recognition] ** p < 0.01 (Two tailed) N = 306.

	Mean	SD	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
(a)	1.63	0.23	1.00											
(b)	1.26	0.23	0.59 **	1.00										
(c)	2.32	0.24	0.81 **	0.64 **	1.00									
(d)	0.42	0.14	0.55 **	0.47 **	0.66 **	1.00								
(e)	0.58	0.14	0.66 **	0.50 **	0.75 **	0.81 **	1.00							
(f)	3.26	0.31	0.72 **	0.71 **	0.73 **	0.42 **	0.51 **	1.00						
(g)	3.37	0.24	0.61 **	0.54 **	0.83 **	0.68 **	0.77 **	0.73 **	1.00					
(h)	2.26	0.23	0.34 **	0.40 **	0.28 **	0.23 **	0.35 **	0.72 **	0.51 **	1.00				
(i)	2.00	0.43	0.76 **	0.60 **	0.78 **	0.61 **	0.71 **	0.71 **	0.64 **	0.35 **	1.00			
(j)	0.63	0.19	0.70 **	0.55 **	0.66 **	0.56 **	0.57 **	0.58 **	0.50 **	0.19 **	0.83 **	1.00		
(k)	0.74	0.24	0.60 **	0.57 **	0.69 **	0.63 **	0.78 **	0.52 **	0.59 **	0.28 **	0.89 **	0.72 **	1.00	
(l)	0.63	0.23	0.57 **	0.51 **	0.69 **	0.64 **	0.65 **	0.59 **	0.59 **	0.25 **	0.92 **	0.70 **	0.90 **	1.00

The descriptive analysis of the research considered all the 12 variables for the mean, standard deviation and correlation analysis. The variable CFP and environmental performance indicators are more prominent in the study of CER and CFP as shown in the Table 2. In the Table 3, stakeholder pressure is positively correlated with corporate financial performance of the firm ($r = 0.83$, $p < 0.01$). Similarly, stakeholder pressure is positively correlated to the firm size ($r = 0.73$, $p < 0.01$). The Stakeholder pressure is positively correlated to the environmental performance factors ($r = 0.78$, $p < 0.01$). In relation to environmental policies & regulations, there is a lesser positive correlation to environmental certifications ($r = 0.72$, $p < 0.01$) in comparison with environmental performance factors ($r = 0.89$, $p < 0.01$). This is basically because, many firms tend to acknowledge environmental performance more and lack the environmental certifications due to lack of accurate compliances to ISO 14000 & 26000 norms. The market pressure is also positively correlated to the environmental performance factors ($r = 0.76$, $p < 0.01$) & environmental certifications ($r = 0.70$, $p < 0.01$). In conclusion, market

pressure, stakeholder pressure, NGO pressure, institutional pressure has positive correlation with environmental performance factors, involving the firm to perform better and provide higher stake in the economic performance as a whole.

4 Findings

As per the descriptive analysis performed on the 12 variables considered for the study, the results showed a positive and direct relationship between market pressure, stakeholder pressure, NGO pressure, institutional pressure with environmental performance indicators, environmental policies & regulations, environmental certifications. When environmental awards & recognition are analyzed, there presents a lower positive relation with the financial leverages ($r = 0.25$, $p < 0.01$), as compared to the other variables. Jacobs et al. (2010) suggested that market had no reaction to the corporate environmental initiatives (CEI) and certifications (EAC) announcements. In the study also similar relation has been identified in relation to the external pressure taken for the study.

The meta-analysis framework of the study as shown in Fig. 2 suggested the relationship between the CER and CFP. Table 2 revealed the positive and direct relationship between the 12 variables taken for the study. The analysis was conducted to assess how each variable is collaborative towards each other and in sync with their counterpart. This technique reduced the number of distinctions caused by the number of variables considered in the study. The study also revealed that the variables had more prominence to the financial performance of the firms in line with the positive relation for its congruent environment factors as shown in Table 3. The results showed that the relationship between CER and CFP have the tendency to prioritise only stakeholder's pressure, market pressure, NGO pressure, institutional pressure as the main protagonist as invariably mentioned by many researchers in their studies as shown in Table 2. Hence, when other variables are showing lesser positive relationship with CER, it predominantly describes the findings revealed by these researchers in their study (He Yu, 2001; Das, 2002; Reid and Toffel, 2009; Nishitani, 2017).

5 Conclusion

This study provides the overview of the articles in relation to CER with CFP and vice versa. This work has its implications to both the academic and managerial aspects. From the managerial aspects, the study revealed that the companies have the potential to garner environmental sustainability if it includes its stakeholders in environmental management strategies. The firms can perform better with the support and guidance of the institution promoting sustainable development. Further with the inclusion of the NGOs in its managerial decision making, it becomes flexible for firms to manage communal issues more prominently and adopt greener way of living. For the societal pressure, the firms are liable to concentrate on eco-friendly produces and garner more information on environmentally sustainable supply chain for better reach to its consumers. For academic aspects, this study gathers articles which are predominantly associated with CER and CFP. This enables the researchers to concentrate only this aspect as it is pivotal for future environmentally sustainable contributions and initiative. With the introduction of

various green initiative, it is important for researchers to gather only those articles which are CER based.

Future research can be concentrated on the geographical aspects of CER and CFP. The research can be further incited towards extensive period frame. The research has more prominence with concentration only in the micro level assessment of the market, stakeholder, NGOs and institutional pressure on CER.

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Medical Waste Management in the Gaza Strip

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Abstract. This paper explains an environmental plan for medical waste in the Gaza Strip and gives a clear outline of the current list and medical waste management plan. In addition it was illustrated the steps of medical waste dispose from the stage of collection to disposal.

The study concluded that the system followed in the Gaza Strip is one of the most prestigious information used in the world.

The research recommended many approaches and tasks to be achieved in future days such as training workers inside health institutions, whether they are doctors, nurses, or workers, on how to deal with medical waste. In addition, it is recommended for providing security and safety requirements for the health of workers, including disinfectants, uniforms. Moreover, Ministry of Health should inspect private facilities to compel them to separate hazardous waste and contract with the Council to dispose of it according to the rules.

Keywords: Medical waste · Management · Disposal · Treatment · Landfill · Hazardous medical waste · Municipalities · Ministry of health

1 Introduction

Waste from health institutions which is called "medical waste" is considered harmful and dangerous to human health and the environment because of seriousness of its content. The World Health Organization defines it as: "wastes resulting from health care institutions and laboratories, and waste arising from secondary and dispersed sources, resulting from health care for people in homes (especially in dialysis operations, insulin injections, etc..)" where it is produced medical waste from hospitals and health centers, medical laboratories, blood banks, sample collection services, and others.

The danger of medical waste is that it may be contagious, especially sharp waste, some of which are chemicals or anatomical residues from the human body that may be contagious or polluted, and disposal methods may cause the emission of dangerous and carcinogenic chemicals and gases that fly into the air, harming citizens and workers in the profession. Collection and disposal of medical waste.

Moreover, poor waste management can jeopardize care staff, employees who handle medical waste, patients and their families, and the neighboring population. In addition, the inappropriate treatment or disposal of medical waste can lead to environmental

contamination and pollution [2]. In the Gaza Strip, medical waste was disposed of by incineration, and this leads to many dangers to humans and the environment.

This paper will illustrate and discuss the following topics and items: stakeholders and medical waste management, overview of medical waste (definition, sources of medical waste, and risks of medical waste), interviewing and observation, stages of medical waste disposal in Gaza strip, conclusions and recommendations.

2 Stakeholders and Medical Waste Management

The following table shows the main target group and human resources related to medical waste management as stakeholders (Table 1):

Table 1. Stakeholders and medical waste management

Target Group	Human resources (HR)
□ The Public □ Patients □ Doctors and nurses □ Hospitals	□ Workers in the ministry of Health (cleaner) □ Municipal Workers □ Ministry of Health □ Ministry of Environment
	□ Municipalities

3 Goal and Objectives

3.1 Main Goal

This paper deals with the reality of medical waste management in Gaza, its evaluation, discussion, how to deal with it, how to transport and treat it, and finally, its safe disposal. This is in order to improve the public health and the surrounding environment for the population in the Gaza Strip.

3.2 Objectives

Based on this background, the detailed objectives of this study can be formulated as follows:

1. To know what medical waste is and its sources.
2. To identify the dangers of medical waste and its impact on humans and the environment.
3. Giving clear vision and information about the current reality of medical waste management and the technology used in that.

4. Studying and analyzing the views of those involved in medical waste management, and knowing their orientations, needs and suggestions to determine the existing problem.
5. To estimate the training needs of those involved in medical waste management in all its stages in Gaza.
6. To develop appropriate mechanisms to raise the level of comprehensive awareness in centers and institutions related to the safety of their workers, the processes that take place within them, and the surrounding environment, through fieldwork.

4 Literature Review

4.1 Overview of Medical Waste

4.1.1 Definition

Medical waste is any waste generated as a by-product of healthcare work at doctor's surgeries, dentists, hospitals and laboratories. It includes any material that may contact with the body during diagnosis, research, drug administration or any type of treatment.

It is likely to be infectious, or potentially infectious, and is often contaminated with bodily fluids in some way. On the other hand, the term can also be used to refer to general waste from any medical practice, as well as specific waste streams typically found in the medical industry [5].

4.1.2 Sources of Medical Waste

The major sources of medical waste are (Table 2):

- Hospitals and other health facilities.
- Laboratories and research centers.
- Mortuary and autopsy centers.
- Animal research and testing laboratories.
- Blood banks and collection services.
- Nursing homes for the elderly

4.1.3 Risks

Effects on Humans
Disposal of this waste is an environmental concern, as many medical wastes are classified as infectious or bio hazardous and could potentially lead to the spread of infectious disease. The most common danger for humans is the infection which also affects other living organisms in the region. Daily exposure to the wastes (landfills) leads to accumulation of harmful substances or microbes in the person's body.

A 1990 report by the United States Agency for Toxic Substances and Disease Registry concluded that the general public is not likely to be adversely affected by biomedical waste generated in the traditional healthcare setting. So, it is found that the biomedical

Table 2. Sources of medical waste

Major Sources	Minor Sources
☐ Hospitals	Clinics
☐ Labs	☐ Dental clinics
☐ Research centers	☐ Home care
☐ Animal research	☐ Cosmetic clinics
☐ Blood banks	☐ Paramedics
☐ Nursing homes	☐ Funeral services
☐ Mortuaries	☐ Institutions
☐ Autopsy centers	☐
	☐

waste from those settings may pose an injury and exposure risks via occupational contact with medical waste for doctors, nurses, and janitorial, laundry and refuse workers. Otherwise, there are opportunities for general public to come into contact medical waste, such as needles used illicitly outside healthcare settings, or biomedical waste generated via home health care [3].

Environmental Impact

Treatment and disposal of healthcare waste may pose health risks indirectly through the release of pathogens and toxic pollutants into the environment as followings cses:

- Treatment of health care wastes with chemical disinfectants can result in the release of chemical substances into the environment if those substances are not handled, stored and disposed in an environmentally sound manner.
- Disposal of untreated health care wastes in landfills can lead to the contamination of drinking, surface, and ground waters if those landfills are not properly constructed.
- Incineration of waste has been widely practiced, but inadequate incineration or the incineration of unsuitable materials results in the release of pollutants into the air and in the generation of ash residue. Incinerated materials treated with chlorine can generate dioxins and furans, which are human carcinogens and have been associated with a range of adverse health effects. Incineration of heavy materials with high metal content (in particular lead, mercury and cadmium) can lead to the spread of toxic metals in the environment.
- Only modern incinerators operating at 850–1100 °C and fitted with special gascleaning equipment are able to comply with the international emission standards for dioxins and furans.

- Alternatives to incineration such as autoclaving, microwaving, steam treatment integrated with internal mixing, which minimize the formation and release of chemicals or hazardous emissions may be given consideration in settings where there are sufficient resources to operate and maintain such systems and dispose of the treated waste [4].

5   Interviewing, Observation and Results

Interview is selected as one of approaches and methodologies in this research to have more focus and practical overview. So, meeting was held with Eng. Abd al-Rahim Abu alQambuz, Executive Director of the Joint Services Council for Solid Waste Management in the governorates of Gaza and the North. He talked about the reality of medical waste management in the governorates of Gaza and the North [1].

He explained that medical waste is divided into:

- Solid waste (municipal), which constitutes 80%
- Medical waste is hazardous and constitutes 20%.

Hazardous medical waste is produced from health institutions, whether (hospitals, clinics, centers, pharmacies, etc.) and belongs to the Ministry of Health, UNRWA, and private institutions, including operating rooms, laboratory, dialysis rooms, emergency departments, etc., approximately 800 kg per day.

Most of the workers in the health sector are cleaners working on a temporary employment system that lasts from 3 to 6 months, so they will be not sufficiently trained to deal with medical waste.

Stages of Medical Waste Disposal
Infectious medical waste needs special treatment and management in all its stages, starting with the patient's bed and the tools that are used in the treatment and application processes, knowing that these wastes carry bacterial and viral contaminants, so they need special treatment.

First: The stage of medical waste collection

Hazardous medical waste is collected in special bags inside the health institutions in the Gaza Strip. When the bag is two-thirds full, it is closed and placed in plastic containers with special wheels. Then these bags are transported to specific points inside the health facility, whether it is a container or a room, and then they are transported by cleaners or the storage site. The temporary waste, manually or using special carts, is transferred to the main garbage containers and then transported to the final disposal site (Fig. 1).

Second: The stage of transporting and sorting medical waste

Medical waste is collected from the centers, then sorted, packed in yellow buckets, numbered, weighed, and transported to private cars.

After that, it is transferred to the treatment unit southeast of Gaza City (Johr al-Dik area) by refrigerated trucks, the capacity of the truck is 35000 L and it operates within the highest specifications as it is equipped with a cooling system to protect the environment from any side effects during the transportation of waste (Fig. 2, 3).

Fig. 1. Medical waste collection

Fig. 2. Refrigerated trucks

Fig. 3. Sorting medical waste

Third: The stage of disposal of medical waste:

It is transferred to the treatment unit for final disposal according to a special protocol, where health institutions, whether governmental, affiliated with the UNRWA or the private sector, contract with the Joint Services Council within a specific mechanism agreed upon by all parties, which are as follows:

Medical waste is shredded into small pieces (see Fig. 4) and then transferred automatically to a microwave heating unit, which is a device with a capacity of 125 kilos per hour, and then to a thermal heating device. The waste takes about 60 min from its entry to its exit, as about 800 kg of hazardous medical waste is transferred daily and treated At the station, the daily capacity of the device is about 1500 kg. After processing, it is disposed of in the adjacent sanitary landfill (Fig. 5).

Fig. 4. Disposal of medical waste

Fig. 5. Microwave heating

6   Conclusions

Based on previous illustration and discussion, it is obtained and observed the following main results and notes:

- Medical waste has negative effects on the environment and human, so it is important to dispose wastes by safe way.
- According to research and observation, the current system for the disposal of medical waste in the Gaza Strip is one of the finest systems according to international level, with a specialized technical staff of technical engineers, drivers, workers and others.

- Previously, the Palestinian Ministry of Health depends up on the incineration method to dispose medical waste in the Gaza Strip, which leads to the emission of toxic substances that harm the environment and public health, causing chronic and dangerous diseases.
- The operation and continuity of the system used in the Gaza Strip depends on the continuity of support and payment by international institutions and the health centers themselves.
- Most of the workers in the health sector are cleaners working on a temporary employment system that lasts from 3 to 6 months, so they will be not sufficiently trained to deal with medical waste.

7   Recommendations

Based on above discussion, illustrations and observations, it is recommended the following items:

- Conduction of capacity building programs on how to deal with medical waste for workers in health institutions, whether they are doctors, nurses, or workers.
- Providing security and safety requirements for the health of workers, including disinfectants, uniforms.
- The Ministry of Health should inspect private institutions to compel them to separate the hazardous waste according to rules.
- Development of international support for health institutions to have sustainable ability of waste management.
- It is necessity for establishing a new landfill and stations to absorb waste in Gaza, as the current landfill in Juhr al-Dik and Khan Yunis area is not sufficient to absorb waste in the coming years.
- It is recommended to develop mobile application for workers on how to deal with this hazardous waste.
- Awareness programs and presenting banners in health centers about the dangers of waste is important for patients and their accompanying.

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A Systematic Literature Review of Intellectual Capital and Sustainable Development of Health Care

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Abstract. The healthcare sector is one of the major sectors affected by the novel coronavirus (COVID-19). The pandemic brought enormous pressure on the health care sector thus shifting focus on valuing its intellectual capital (IC) and ensuring sustainable development. IC is critical for not only achieving a competitive advantage but also influencing sustainable development. The existing literature remains fragmented and underexposed with relation to IC and sustainable development in the health care sector. To address this issue, this study undertakes a systematic literature review of the IC and sustainable literature specific to the healthcare sector (n = 39). After analysing research articles indexed in Scopus, the findings highlight that publications in this area have been the highest over the last four years and around 50 per cent in the field of business, management, environmental sciences and social science combined. The extant literature has predominantly explored areas falling under three major themes, strategic approach, systems, and performance enhancement. The implications are for the academicians and practitioners to undertake future research agenda emphasizing IC contribution in the sustainable development of the health care sector.

Keywords: Intellectual capital · Sustainable development · Healthcare · Systematic literature review

1 Introduction

Governments globally are committed to the United Nations Sustainable Development Goals (SDGs) and face considerable pressure to transform their policies for guaranteeing the well-being of all. World Health Organisation (WHO) has emphasized the need for research and academic institutions to address the priority evidence gaps in institutional regulations and optimization of quality and performance of human resources for health [9]. The health care system is heavily dependent on its health workers, enabling it to function to improve social welfare. Countries must have the availability and sufficiency

of health workers. Still, it is also crucial that they are equitably distributed, accessible by the population, and motivated and empowered to deliver quality care. It is recognized that depending on countries' socio-economic development; they are challenged with varying degrees of difficulties in education, deployment, retention, and performance of their workforce. For example, an international study on sustainable health care systems across 11 countries reported that though the health care systems are varied, austerity and increasing demand for healthcare services highlighted existing systems were unlikely to remain sustainable [23]. Several factors may affect the quality of the healthcare service one of which is intellectual capital. Intellectual capital leads to sustainable development which such conditions are most desirable to the government.

Intellectual capital (IC) refers to the organisation's intangible resources such as relationships with suppliers, customers and employees, the organisation's processes and routines, and expertise and knowledge of human resources. Healthcare organizations comprise intangible resources, internal capabilities and external relationships that are all critical components of intellectual capital (IC). Studies have suggested that IC plays a role in sustainable development; however, these are mainly focused on the business sector [6]. D Botturi et al. [2] suggested building a sustainable health care system by strengthening the social capital needs, improving its culture, structure, information and communication technology, social web for enhancing efficiency, and developing professional competencies towards innovation. Prior studies have investigated the role of IC in sustainable development through systematic literature reviews in the context of innovation [1] or technology policies [25]. While extant literature has argued that IC as an intangible resource does not appear in the financial statements [4, 5], it is proven to contribute towards value creation for the firms and economy, and thus critical for sustainability [11].

There is a lack of understanding of how intellectual capital plays a role in the sustainable development of the health care sector. To the best of our knowledge, there is no systematic literature review on how IC and sustainable development, specifically impact the health care sector. Thus, this research aims to critically review the literature on intellectual capital and sustainable development of the health care sector published in the Scopus database. By combining keyword and content analysis [19], the following research questions (RQs) will be answered:

RQ1: What is the development of studies in IC and sustainable development in the healthcare sector region and country wise?

RQ2: What is the coverage of literature with regards to IC and sustainable development in the healthcare sector?

The rest of the current paper is structured as follows: Sect. 2 provides a background on IC and sustainability. Section 2 describes the methodology used in this study. Section 3 discusses the results after applying for a systematic literature review. Lastly, Sect. 4 presents the conclusion, limitations and future recommendations.

2   Methodology

The purpose of this research is to review the current state of research in the field of intellectual capital and sustainability development. To support this purpose a systematic

literature review (SLR) is undertaken to ensure comprehensiveness, objectivity, openness and replicability [29, 31]. Using the PRISMA model [20], a four-stage approach that includes identification, screening, eligibility and inclusion is adopted for the SLR.

During the identification stage, keywords search in Scopus indexed journals. This is followed by the screening stage in which the titles and abstract are scanned for the identified articles (n = 72). This stage examines the relevant articles based on inclusion and exclusion criteria. The next step involves the eligibility step that critically appraises the screened articles (n = 57) for verifying the suitability of articles. The last step of inclusion involves 39 articles to be included in the final review.

2.1   Identification

A systematic search protocol was developed to identify relevant articles for this research. The protocol outlined above ensures robustness and rigour and ensures the scope and boundary in the search of articles. One of the elements of this study is sustainable development, the sustainable development goals (SDGs) were formulated by the United Nations only in 2015. However, sustainability in the healthcare sector has been investigated since the 1990s. For example, KW Vestal et al. [30] suggested that to achieve a patient-focused healthcare system, the organisations would have to undergo rapid sustainable transformation. Similarly, MD Halley, AW Little [8] concluded that hospital-owner primary care practices benefited from a net income primary tool that supported in achieving competitive advantage and sustainable practice operations. Thus, sustainability in healthcare has been investigated from various angles even before the SDGs.

The quality of the articles to be selected for review was assured as only those were focused upon that were published in the Scopus database. The selection of the Scopus database is coherent with existing studies that have argued in favour of its extensive coverage of more than 20,000 peer-reviewed journals, scoring over the Web-of-Science database [27]. L Waltman [32] further argues that about 97% of the papers indexed in Web-of-Science is also included in the Scopus database. The search was limited to articles of empirical, conceptual and literature review articles addressing the research questions. The search string that involves querying relevant keywords was derived from the research objectives and by referring to the equivalent terms used in related topics. The keyword combinations used in the search were (Intellectual capital OR human capital OR structural capital OR relational capital AND healthcare or hospital AND sustainable development OR sustainability). The search resulted in a total of 72 entries.

2.2   Screening

In the screening stage, the article titles and abstracts were reviewed for relevance to the research objectives. A specific exclusion criterion was developed in the context of IC, sustainability and healthcare. Excluded from the review were studies that (a) only investigated IC in healthcare or sustainability in healthcare, or (b) were editorials, book chapters, conferences or research notes. We included the work of economic and social sustainability that is witnessing an emerging trend and environmental sustainability that has been investigated extensively [16]. The references of selected articles were

also scanned to identify additional relevant work. The screening process resulted in 57 articles.

2.3 Eligibility

During the eligibility stage, the 57 articles screened were appraised for suitability for inclusion through an independent review. Using a tabular format, the authors extracted key information of the research papers, that included title, abstract, methodology, and key findings. This supported minimizing the reviewer bias and maintaining the level of uniformity towards the article selection process. The reviewing authors then jointly discussed their review findings, thus resolving minor differences and jointly deciding on the final set of articles to be included in the research. The articles with featured IC or sustainability as a secondary concept were excluded from the study. Through the inclusion/exclusion criteria, a further 18 articles were considered non-eligible for inclusion.

2.4 Inclusion

Through the implementation of the stages discussed above, a final set of 39 articles met the screening and eligibility criteria. An inductive and deductive approach was used to identify topics covered in the various articles through analysis and synthesis. Further, an NVIVO analysis was carried out to identify emerging themes from the research articles. These were then matched with the topics covered in the literature for IC and sustainability. This approach allowed the research team to compile three key topics from the 39 articles.

3 Results

3.1 Descriptive Analysis
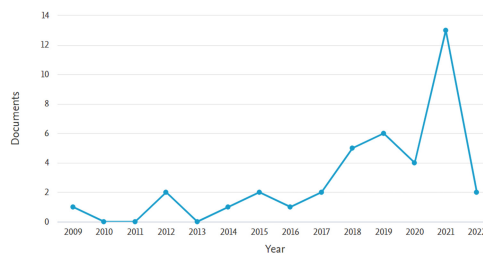
Fig. 1. Timeline of published studies (n = 39)

The analysis of the literature revealed certain trends and patterns which are presented in terms of how the documents were published over the years, the major subject areas in which the publications have taken place and the country-wise distribution of these
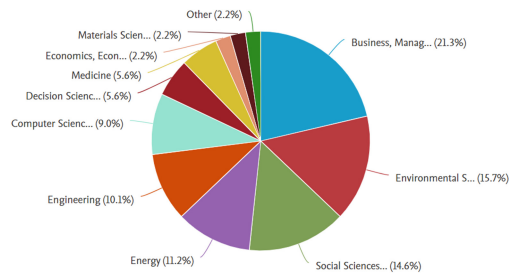
Fig. 2. Publications by subject area (n = 39)

articles. As can be seen in Fig. 1, the published studies were published from 2009 to 2022. The majority of the studies were published after 2018. The highest number of research articles were published in 2021.

Figure 2 depicts the publications in various subject areas. The maximum number of publications have taken place in the business, management and accounting area (21.3%). The next area in which the publication has been majorly reported is in Environmental Science followed by Social Sciences and Energy. Thus, the shortlisted articles in the field of IC, sustainability and health sector have been spread across subjects.
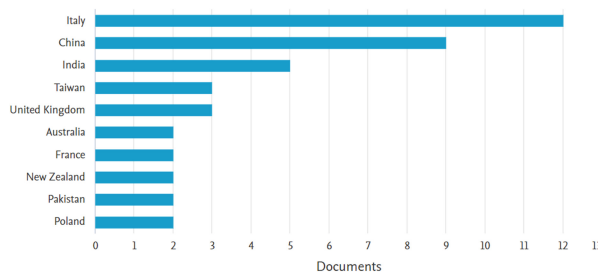
Fig. 3. Geographic locations of the selected studies (n = 39)

Figure 3 presents the research articles distribution in terms of country. The highest number of articles in the field of IC, sustainability and healthcare sector are published by Italy followed by China and then by India. Approximately 50 per cent of the studies have been conducted by authors from Asia and the balance across European and the Asia Pacific countries.

3.2 Thematic Analysis

3.2.1 Strategic Approach in Healthcare

The study by J-W Park et al. [22] emphasizes the digitalization of various healthcare services that enhances the average life of a human being due to continued growth in the economic conditions, increase in the ageing community and utmost care in the nutritious life. The progress of information and communication technology in the healthcare

sector results in innovative solutions to mitigate critical issues arising due to social and economic challenges such as the ageing population or chronic illness [7, 26]. D Zhou et al. [34] suggests intellectual elements of the healthcare sector motivate the scientific and social environmental resources that identify and suggest initiatives against infectious diseases and coronavirus concerns. The methodological strategies help to evaluate the effects on the stimulating elements. The study was carried out to find the solutions for the synergic method for blending dynamics. Sustainable progress and improvement in the medical field is pioneering and influences the global financial system. One of the effective strategies to measure sustainability is social orientation [24].

The healthcare supply chain is an integral part of the service supply chain. The healthcare supply chain is inspired by dedicated services from the service providers to various customers with less cost [13]. The study concluded that intangible asset is very influential for the customers on social health supply chain productivity, greater importance to the economic environment, social aspects, and environmental elements. The social health supply chain process consists of various factors that influence profit, quality of the service provided by the healthcare sector, income generation, satisfaction of the customers and satisfaction of the stakeholders [14].

3.2.2   Systems in Healthcare

Since the introduction and progress of information technology, including big data, the internet of things (IoT), cloud computing, and artificial intelligence, the healthcare system has undergone a significant transformation, becoming more effective and useful, affordable, and customized [28]. Organizing smart healthcare systems from the perspectives of individuals, industries, and governments has thus emerged as a critical challenge to achieve the long-term growth of a sustainable healthcare system.

Sustainability in health research has steadily become a component of medical waste management [33]. Hospitals are, in a sense, public spaces. Numerous countries have introduced their new healthcare systems with this in mind. In the United Kingdom, for example, the Department of Health established "telemedicine," a national service framework for the aged. Patients, medical organizations, and society may all benefit from connected health. It enables patients to remotely access medical organizations, providing them with convenience and flexibility. Furthermore, it improves the quality of care with timely health conditions to the patients and stimulates the prevention of disease.

Additionally, individuals can legally allow medical institutions to exchange their information with other organizations to tailor the treatments they require. Connected health benefits society by facilitating and promoting coordination among many stakeholders in medical systems and fostering the attainment of sustainability [3]. This research project identifies connected health as a patient-centred medical care system that uses modern technologies (such as software, hardware, and wearable devices) to collect all types of data relevant to patients, incorporates stakeholders in the healthcare care industry through prompt and effective information sharing, and evaluates integrated data that can provide preventative measures and long-term monitoring medical services and give patients a complete picture of their health status. Connected health contributes to the realization of a paradigm change in health care, which is defined by developing

preventative, proactive, and quantifiable healthcare choices in a comprehensive, participative, and customized method [10]. These findings will aid in the development of a sustainable medical care system and sustainable society by identifying significant aspects that influence connected health acceptance levels.

3.2.3 Performance Enhancement in Healthcare

Performance management helps the Health Care Institutions (HCIs) to provide state-of-the-art healthcare with maximum efficiency, effectiveness, patient satisfaction, and safety leading to achieving the vision and strategic goals of the institutions. Performance measures of HCIs are mainly classified as financial performance and patient performance. A strategic map of Balanced Score Card (BSC) specifies asset utilization, new revenue opportunities and profitability as indicators for financial performance. BSC also defines service attributes, patient relationships and hospital image as main indicators of patient performance [17]. Knowledge assets and capabilities are the basic elements of financial and patient performance required to be cautiously nurtured and developed to positively affect the performance of the HCI [12].

Research on the knowledge-based perspective of innovation and performance improvement in the healthcare sector proved that the significance of managing knowledge is related to its impact on innovation and institutional performance improvement. In this aspect, HCIs should be able to transform their knowledge domains into efficient services and products, thus renewing the capabilities of the institution. Hence, the HCIs are required to identify, acquire, organise, share and apply their knowledge resources continuously and efficiently [15].

Recent research studies have proved that HCIs can also positively impact their performance and sustainability through implementing green hiring and Green Human Resource Management Systems [21]. Green hiring is an evolving concept in HCIs whereby medical professionals with the necessary knowledge, skills, approach, and behaviours, are recruited to identify environmental management systems for HCIs. Research studies also revealed that green recruitment has a substantial impact on HCI's environmental, economic and social performance. The implementation of green training programmes for the professionals will facilitate awareness of environmental issues and activities, thus enabling them to contribute towards achieving the sustainability goals of the HCI. Moreover, investing in green training programmes will promote a culture within the HCI that positively develop sustainable initiatives and projects to move to a sustainable healthcare system [18].

4 Conclusion

Improved efficiency of healthcare infrastructure, reasonable resource allocation, and the integrated and orderly expansion of medical ecology are all important components of ensuring the continued development of the overall healthcare sector. Additionally, the topic of sustainable development in healthcare has become increasingly important, at both the civil and national levels of government. Thus, this study has explored the trends in the extant literature related to IC, sustainable development and healthcare. The

findings suggest there is still paucity in research as only 39 relevant articles could be shortlisted. From a worldwide perspective, the researchers were from Asia, Asia Pacific and European countries.

Content analysis of the articles using NVIVO software has resulted in the identification of three thematic clusters. Though the specialisations are not explicit on the topic, three main areas arise through the review: a strategic approach, systems and performance enhancement. All three are critical IC elements that are investigated for the healthcare sector. The strategic approach, an important element of structural capital remains critical for the healthcare sector to deal with the pandemic and any future challenges that this sector might witness. The systems theme gave an overview of various technologies put in place for enhancing the health care sector. The findings of the performance enhancement theme predominantly suggest the development of human capital of the health care sector that involves training, recruitment and professional development.

Though this research is an overview of extant literature the findings do offer some implications to academicians and researchers. An important element of IC and critical factor for sustainability is capital employed that still seems to be an underexplored area for the healthcare sector.

The study suffers from certain limitations. The SLR was undertaken for journal articles and excluded conferences proceedings, and book chapters. Due to the novelty of the topic, there is a likelihood that conference proceedings and book chapters could have some valuable contributions in this area. The analysis method itself is subject to certain criticism as a certain level of subjectivity is applied to shortlist the research articles relevant to this study. However, this subjectivity is mitigated to a certain extent as outlined in the methodology section. Thus, future research can ensure the inclusion of more forms of articles to provide a more comprehensive overview of the topic.

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Public Service Advertisements and Healthcare Attitudinal Changes in Developing Countries: Pakistanis' Perspectives

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Abstract. Still, little is known about the role and contribution of media ads in healthcare communication and awareness during the Covid-19 outbreak. This study examines the role of public service ads in spreading healthcare awareness in Pakistan. Based on a quantitative approach through a sample of n = 200 participants from the Sahiwal city, the study proposed a self-designed model that used the Structural Equation Modelling to affirm the proposed relationship between the variables. The study found that media ads were not only disseminating the Covid-19 awareness but also changing the public attitudes toward taking precautionary measures to halt the transmission of the disease. Hence, the findings indicated that public service advertisements have substantial, positive impacts on people's perceptions and actions regarding the current pandemic. The results discussed media context and healthcare awareness to highlight further the role of such media in bringing positive behavioral changes.

Keywords: Covid-19 · Healthcare · Public service ads · Attitudinal changes

1 Introduction

With the world's sixth-highest population, Pakistan has an extensive healthcare system, including private, public, and semi-governmental hospitals and healthcare centers. However, despite the largest population and solid geographical location, Pakistan is still a developing country, which badly affects its healthcare system [1]. For example, rural

areas, compared to urban areas, have insufficient healthcare services that have high-lighted healthcare as a vital social concern [2]. These concerns were increased during the Covid, because the country border with China and Iran, which are the *epicent*er of the outbreak, demanding severe consideration from the local authorities [1], meaning that a high level of preparation was needed to control the spread of virus [2].

During a few initial days of Covid, Pakistan had inadequate diagnostic and treatment facilities, which led the Pakistani government to send suspected samples to international laboratories until it was supported with test kits from Japan and China to cope with the crisis [1]. The National Institute of Health (NIH) issued several protocols and treat-ment facilities for the Covid-19 positive cases [2]. To increase healthcare awareness and preventive measures, it also started several public relations (PR) healthcare campaigns through different media platforms, primarily TV and public service ads (PSAs). These campaigns and programs were used to bridge the gap between researchers, healthcare providers, government officials, and senior doctors to increase awareness among the public [3].

Thus, this paper investigates the role of PSAs and Covid-19 awareness in Pakistan to understand the public perceptions of Sahiwal residential viewers regarding the media role in Covid-19 awareness. It aimed to understand the relationship between PSAs cam-paigns and Covid-19 awareness linked to viewers' attitudinal changes. As mitigating the pandemic relies on preventive measures, PSAs serve as an influential part between the local authorities and the public.

2   Literature Review

2.1   Media Ads and Healthcare Awareness and Issues

All the mainstream media during the previous health crises and endemics (e.g., obe-sity, HIV, etc.) have remained highly influential worldwide, including Pakistan. They have facilitated information dissemination and improved health knowledge and aware-ness, e.g., through the PSAs as means of communication [4]. This information usually comes from official and non-commercial bodies, e.g., charities [5]. For this reason, pol-icymakers, stakeholders, and healthcare bodies consider PSAs as an essential source of raising awareness and public well-being [6]. For instance, both traditional and new media resources have been used during the most HIV and AIDS campaigns worldwide [7]. Hughes-Hallett et al. [8] found that the cancer media campaign significantly have impact on viewers, espcially for those with new suspected cancer referrals.

Concerning social media use in endemics, Househ [7] found a relationship between online news media publications and Twitter activity linked to Ebola, suggesting that healthcare organizations should adopt online news media and developing (PR) social media campaigns in cooperation with leading online news media outlets (e.g., CNN, Yahoo, Reuters) that can influence viewers. Lapointe et al. [9] also examined how health-care professionals and businesses collectively using different social media platforms to increase healthcare awareness among the public. They found that different healthcare communities and businesses use different social networking platforms in relation topics of healthcare such as cancer awareness, businesses often prefer several social media platforms for their easy accessibility and frequency usability.

Further affirmed by Larson et al. [10], they examined the traditional media usage for healthcare purposes in the US and revealed that they essentially resort to media platforms for advertising their services and healthcare awareness. The PSAs content mainly contains public service, healthcare information, the introduction of newly improved drugs, therapeutic techniques, and others. In this regard, the promotional review board helps viewers to design and execute the advertisement strategies that lead to highly effective outcomes. Rabar [5] assessed the role of TV advertisements at HIV awareness broadcasted from 2005 to 2009 in Kenya to validate this further. Findings revealed that both male and female participants revealed that despite the advertisements being sensationalized, they worked well to spread HIV awareness. Respondents also indicated their positive influence on attitudinal changes.

Saraf & Balamurugan [11] cited studies have found that 70.0% of healthcarebased attitudinal changes are due to mass media campaigns. However, sometimes healthcare advertisements contain fear-based framed messages [12]. Although ordinarily such appeals are unethical/healthcare, they bring positive, constructive outcomes [13]. People gain exposure to authentic message senders, opinion leaders, and healthcare professionals that further help them consider healthcare [14]. **H1**: Media advertisements have significantly influenced healthcare awareness.

2.2 Public Service Advertisements and Their Impacts on Healthcare Awareness

The PSAs have been around for several decades in promoting and raising public awareness and changing behavior [15]. PSAs are designed to educate the public, increase their awareness and reasonably modify their behaviors see, e.g., [16]. Examples of PSAs can include addressing substance abuse, children's rights, healthcare awareness, Covid-19 measurements, etc. These PSAs work through sending messages in the public interest disseminated using different media platforms free of charge [17]. They are also seen as a highly effective source of healthy attitudinal changes. They use commercial advertising techniques for non-commercial purposes, especially to promote social welfare, as Suresh and Srinivasan [18] indicate. These advertisements aim at social well-being, perhaps without discrimination [19].

The contribution of public service healthcare advertisements (PSHAs) are further validated by Park et al. [17], who examined volunteers to help the players during a special Olympics by using either of the two routes described in Elaboration Likelihood Theory. Findings revealed that individuals highly used the central persuasion route along-with compassion to make a suitable decision. However, people with low and high empathy mainly depend on the primary cue and rational argumentation. Jones [15] assessed the role and impact of PSAs on the well-being of the young generation/teenager about drug abuse. Findings revealed that both messages that involved drug abuse awareness and organ donation awareness highly affected the participants.

Some also consider PSAs focused on the mutual benefits for all, significantly reinforcing positive environmental sustainability among the young generation. As a result, the audience would perceive these advertisements as influential and rationale for the practical execution. The PSAs often attain a positive response from the public. These advertisements focus on bringing attitudinal changes through attractive symbols, argumentations, and words [20].

Healthcare advertising is aimed at disseminating healthcare awareness among the public. Studies have validated how healthcare advertisements efficiently spread information regarding endemic such as Tuberculosis, Polio, Measles, and others [2]. These advertisements remained highly informative and influential for the public leading to greater behavioral change [15, 21, 22], as also highlighted by the social learning theory introduced by Albert Bandura [16]. Utulu [23] also assessed the role of HIVbased advertisements in Nigeria, and revealed that HIV-awareness-based advertisements greatly informed people about the cause and measures against the disease.

Notably, PSAs through media advertisements often play a vital role in supporting social causes. Campaign agents, advertisers, and involved stakeholders strategically execute these advertisements to raise public awareness, leading to the adoption of preventive measures [24]. These advertisements inform people about their unhealthy practices, making them vulnerable to catching the disease. As a result, the public cautiously adopts those behaviors [25] that may not undermine their health and help them live a healthy lifestyle [22, 26].

H2: PSAs have significantly influence healthcare awareness.

H3: Healthcare awareness has a significant influence on attitudinal change (Fig. 1).

Fig. 1. The proposed conceptual framework

3   Methodology

3.1   Study Design and Sampling

This study is based on a quantitative approach and sample from the Sahiwal city. It is therefore an exploratory, motivated by several previous PSAs healthcare studies. The study used an online pre-structured survey questionnaire for the data gathering purpose. The survey was administered in March-April 2021. It contained 15 items designed that were measured on a five-point Likert scale. These were related to media advertisements (MAD) (3 items), public service healthcare advertisements (PSHA) (4 items), covid-19 awareness (COA) (4 items), and attitudinal change (ACE) (4 items). Given Covid-19 restrictions, the survey method was considered suitable for gathering such data information directly from the participants and is relatively convenient. For the data manipulation and Structural Equation Modelling (SEM), the study runs the IBM SPSS software and AMOS. The study universe involves people from Sahiwal city, Pakistan. The study analysis was based on a randomly selected sample of n = 200 participants, with 79.5% rating response as n = 21 questionnaires were discredited due to incompletion.

3.2 Demographical Features

As shown in Table 1, most respondents were females (69.7%) compared to male partici-pants (30.3%). Their age ranged from 16–25 years old (47.2%), 26–35 years old (33.7%), 36–45 years old (11.2%), and 46 + (7.9%). The qualification level of respondents identi-fied that 39.9% of respondents had graduation degree, 24.2% had BA degree, 17.4% had post-graduation or MS degree, 10.7% of participants had an intermediate level, 5.1% had secondary school level, and 2.8% had Doctorate. After calculating the demograph-ics of respondents, the study conducted a one-way Analysis of Variance to assess any potential differences based on respondents' demographical characteristics. Thus, with the significance values ranging from .144 to .990, the study did not find any significant differences based on the respondents' demographical data.

Table 1. Demographical data

Variable	Factor	F	%
Gender	Female	124	69.7%
	Male	54	30.3%
Age	16–25	84	47.2%
	26–35	60	33.7%
	36–45	20	11.2%
	46 +	14	7.9%
Education	Secondary School	9	5.1%
	High School	19	10.7%
	Bachelor	43	24.2%
	Graduation	71	39.9%
	MS/Post-graduation	31	17.4%
	Doctorate	5	2.8%

3.3 Research Instrument

As the study involves the SEM software, two criteria (reliability and validity) analysis fur-ther strengthen the SEM pathway. In this regard, the study conducted both the convergent and discriminant validity assessments involving Factor Loadings (FL), Average Variance Extracted (AVE), Composite Reliability (CR), Inter-coder Reliability assessments, the Heterotrait-Monotrait Ratio Scale (HTMT) and the Fornell-Larker scale assessments [27].

The procedure for the validity and reliability assessments were as follows: First, the study examined the construct reliability of our measurement model. Table 2 shows the Cronbach Alpha (CA) values ranging from .732 to .811, and CR values ranged from .745 to .851. All these values were more significant than the threshold value of 0.7. Moreover,

Table 2. Convergent reliability assessment

Variable	Item	FL	CA	AVE	CR
MAD	MAD1	.934	.800	.915	.745
	MAD2	.848			
	MAD3	.964			
PSA	PSA1	.971	.780	.918	.851
	PSA2	.740			
	PSA3	.982			
	PSA4	.979			
COA	COA1	.927	.732	.935	.776
	COA2	.954			
	COA3	.950			
	COA4	.909			
AC	AC1	.695	.811	.792	.751
	AC2	.648			
	AC3	.880			
	AC4	.948			

the same Table also shows the FL values, ranging from .648 to .982, and AVE values ranged from .792 to .935, indicating all values were higher than the threshold value of .05. After examining the construct reliability and convergent validity, the construct validity value of each variable was accepted.

Table 3. The Fornell-Larker criterion scale

Construct	MAD	PSHA	COA	AC
MAD	**.837**			
PSA	.614	**.842**		
COA	.666	.369	**.874**	
AC	543	.212	.521	**.627**

Secondly, the study also examined the discriminant validity of the research model using the Fornell-Larker Criterion Scale. As shown in Table 3, all the values of Average.

Variance Extracted are higher than the given correlation matrix values, indicating that the discriminant validity is partially established. Further, the Heterotrait-Monotrait ratio scale to fully show the discriminant reliability was run and found its value was .329, suggesting that the discriminant value is fully established (Table 4).

Table 4. The Heterotrait-Monotrait ratio scale

Construct	MAD	PSA	COA	AC
MAD	.717			
PSA				
COA	.874	.710		
AC	.835	.712	.754	

3.4 Coefficient of Determination R2

The coefficient of determination R^2 provides a potential direction to perform SEM software, which affirms the research tool's validity. Calculating the coefficient of determination R^2 is possible both through manual and using SPSS. Table 5 summarizes the outcomes of the coefficient of determination R^2, showing the R^2 values ranged from .801 to .883 and indicating the study model contains a robust predictive power.

Table 5. The coefficients of determination R^2

Construct	R2	Correlation
PSAs	.801	Strong
HCAD	.883	Strong
AC	.877	Strong

3.5 Hypotheses Testing

This research also conducted the path analysis and regression analysis to examine the proposed relationships between independent and dependent variables [28]. To perform an in-depth analysis of the relationships, the study also run *t-values*, R^2, and significance values of the variables. Table 6 summarizes the results of pat and regression analysis, observing that there was a robust and significant relationship between media advertisements and health awareness ($\beta = .518, P = .000$), public services advertisements and health awareness ($\beta = .473, P = .000$), and health awareness and attitudinal changes ($\beta = .444, P = .000$). Thus, the study affirmed that all three hypotheses were strongly validated along with the path-values ranging from .444 to .518, indicating the significant role of media advertisements during the current healthcare crisis.

Table 6. Hypotheses testing with path analysis and regression analysis

H	Relationship	β	path	t-value	p-value	Direction	Decision
H1	MAD = > HA	.518	.872	8.027	0.000	Positive	Supported***
H2	PSAs = > HA	.473	.880	7.439	0.000	Positive	Supported***
H3	HA = > AC	.444	.813	6.422	0.000	Positive	Supported***

4 Discussions

Findings revealed a statistically significant relationship between media advertising campaigns, Covid-19 awareness, and positive attitudinal changes among the audience of Sahiwal city, Pakistan. It is understood that media platforms work as social institutions for public well-being and awareness without any discrimination. Especially during the current healthcare crisis, this role is even more significant as these healthcare advertising campaigns positively affected the people, leading them to follow the measures to halt the diseased transmission. As a result, people are adopting preventive measures such as social distancing, wearing masks, sanitizers, etc. [3, 14].

The paper found a similar aspect of the media advertisements in the current research regarding public service healthcare awareness during the Covid-19 pandemic. These results are consistent with earlier studies [1, 14] that have highlighted the positive, constructive role of media advertising for Covid-19 awareness in the Jordanian scenario. Similarly, the fundamental part of media healthcare advertising is affirmed and indicated greater consistency with the study conducted by [29]. They also found the positive impacts of media advertising on the audience's attitude during the Ebola epidemic. During the relevant epidemic, people primarily relied on media platforms for information. The media content kept them updated and motivated them to adopt all the preventive measures against the virus outbreak [30]. Likewise, the role of media advertisements to support healthcare awareness is also affirmed by others who highlighted its role regarding early breast cancer detection among Jordanian women.

Furthermore, media advertising plays a positive role in reinforcing positive behavioral change among the public. By resorting to rational argumentation, these advertisements help people evaluate the message on their own and make favorable decisions [22]. In this context, behavioral psychologists emphasize using social learning theory to analyze public behavior further and identify the core approaches to persuade the public [16, 21]. For example, people who prefer weight loss are well aware of the consequences of obesity. Thus, by keeping in view these consequences, they try to keep their weight under control. Similarly, in healthcare communication, media content is structured by keeping observational learning under consideration, leading to fruitful outcomes [31].

5 Conclusion

During the Covid-19 outbreak, the Government of Pakistan took several measures to control the virus transmission. Here the role of the NIH and other (non)-governmental

organizations remained highly prominent by broadcasting and publishing several PRadvertising campaigns on different media platforms to raise awareness and reinforce preventive measures. All the public advertising campaigns primarily emphasized adopting preventive measures, motivating the public to cooperate with the government strategies and obligate the preventive measures. However, despite the role of media, the vulnerability of the healthcare system in Pakistan is a thought-provoking phenomenon [1, 2]. As media being a social institution, is playing its part, weak healthcare measures and the system can undermine all the efforts to mitigate the adverse consequences of the Covid-19 outbreak [14]. Thus, the current study highlights the role of media advertising in healthcare awareness and the weakness of the local healthcare system in Pakistan, which needs much more consideration.

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The Job of Traveller Trust, Travel Imperatives, and Attitudinal Elements Towards Travel Choice Determinants Bangalore's During and After COVID-19

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Abstract. The emergence of COVID-19 has resulted in new tourism attractions. Restrictions on international travel are a precondition for increasing tourism. Having travelled widely, we've developed a comprehensive model to explain how travel advertising affects consumer behaviour.

Travel bans and incentives in the event of a pandemic the responses of 1711 Bangalore subway riders were analysed using probabilistic choice and tally models. The findings provide insight on the factors that influence travel decisions before to and during a pandemic. Effective COVID-19 tourism rehabilitation programmes now have the benefit of this study's theory and practise.

Keywords: COVID-19 travel-promoting/restricting factors · Travel restriction · Theory of extended planned · Travel decision

1 Introduction

The tourism industry is at peril from the 2019 coronavirus pandemic (COVID-19). It is predicted that worldwide tourism would decline by 75% by 2021. This might result in a $554 billion drop in GDP. Tourism is unlikely to recover to pre-COVID-19 levels when the pandemic has passed. Because of their fear of becoming ill, many individuals avoid travelling. Tourism researchers must foresee and communicate a new "new normal" in order for the business to survive this global calamity.

To attract tourists during and after the pandemic, tourism marketers must be aware of all the factors that impact travel, including the disease itself. During and after the outbreak, a forecasted "new normal" may challenge previously held travel beliefs. Three theoretical frameworks are used in this study to analyse pandemic travel intentions and preferences.

First, this study evaluates the impact of entire traveller trust frameworks on the choosing of a vacation destination. Instead of looking at traveller trust in destinations, the research evaluates the impact of macro political, micro destination, and macro-traveller variables on travel choices. People's views on the effectiveness of actions and the effect they have on travel are influenced by their level of trust during an epidemic.

During a pandemic, a traveller's confidence in destination safety precautions and other safety behaviours might influence their travel plans.

Travel restrictions during and after the pandemic will be examined as a secondary goal of this research. Travel limitations are often employed in tourism research to analyse travel constraints, but more study is needed to understand the process of travel restriction in diverse travel settings. There are several ways in which social distance affects travel decisions in the event of a pandemic catastrophe. Pandemic-related travel may be hindered if a person's safety concerns keep them from leaving their own country. Participation may also be limited by the absence of friends, family members, or other travel partners. Free mobility is restricted by social isolation. Pandemics need the detection of structural mobility restrictions.

Finally, this study reassesses the importance of planned behaviour in the research process. To further understand how the epidemic affects visitor behaviour, researchers must revisit long-held ideas and psychological characteristics. There are several factors that influence travellers' preparation to deal with a pandemic, including their expectations and past ideas about proper behaviour. In addition, the study investigates the impact of past travel experiences and health concerns on the idea of planned behaviour.

Topics for study addressed by this initiative include:

- Travel decisions are influenced by political, destination, and interpersonal trust.
- Intrapersonal, interpersonal, and structural social distances impact the traveller's choice of itinerary. Travel attitudes, perceived behavioural restrictions, and subjective standards are influenced by current and previous travel experiences.
- To get to the bottom of these research questions, researchers had to interview a colossal number of prospective Bangalore visitors! After the epidemic, the study's findings will aid tourism.

2   Literature Review

2.1   Trust

There are many different ways to look at the same thing. Self-confidence and reasonable expectations of others contribute to psychological fragility.

Theresa McCarthy and the other members of the team of researchers that worked on this project Confidence is a combination of intellectual and emotional trust. Emotional trust is built on the base of compassion, while cognitive trust is built on the foundation of competence, expertise, and reliability. A person's desire to serve you is the foundation of emotional trust. It puts pressure on the axis to the opposite.

Published by Mitchell and Cropazano in 2005 - Consumer-provider relationships that are built on trust are more likely to be successful, according to the idea of social exchange. Tourism marketing requires a high level of trust between visitors and the places they visit.

Visitors' trust in locations, online travel information, and careers in tourism and hospitality are the focus of current tourism study. Trust in business-to-business traveller relationships is the focus of these research.

Fancourt and colleagues, 2020 when people have faith in others, their attitudes and behaviours are shaped. Research on the COVID-19 pandemic is essential to public health.

Health authority 2020 is more likely to succeed if COVID-19 is communicated well, says Holroyd. Government policy, public trust, and individual behaviour are all intertwined. Building public trust may be accomplished in any of the following 10 methods.

There is a correlation between public trust in the government and underestimation of COVID-19, according to Wong and Jensen. COVID-19 preventive strategies 2020 are more trusted by older, better-educated females, according to the findings of this research. Bargain and Aminjonov (2020) examined the impact of a lack of public trust in governments on migration in relation to pandemics.

In order for tourism to rebound after the pandemic, passenger faith in COVID-19 safety requirements must be restored (World Travel Tourism Council 2020). It's possible that this will have an impact on how we plan future trips. The debate has come to an end.

Hypothesis 1: Trust in the government affects people's willingness to travel during and after a pandemic.

Hypothesis 2: Faith in the contagion influences pandemic travel choices, including whether or not to travel and how frequently.

Hypothesis 3: Trusts influence travel frequency and duration during and after a pandemic.

2.2   Travel Bans

The reasons for not being able to travel are as varied as the people who experience them. Self-perceived stress and worry are examples of intrapersonal constraints. Traveling with pals is out of the question due to your social handicap. Structural restrictions include financial, time, and travel resources. Studying how travel restrictions affect participation and future travel plans may aid in the development of pandemic travel strategies. Post-pandemic travel plans may be affected by this. The debate has come to an end.

Hypothesis 4: Traveling during pandemics (and how frequently) may be affected, as well as future travel plans.

Hypothesis 5: Interpersonal constraints impact travel during.

Hypothesis 6: Social Isolation affects travel frequency and duration during an epidemic.

It's commonplace to refer to travel as "planned behaviour." Subjective norm, perceptions of behavioural control, and attitudes are all factors that go into this construct. A person's opinion of a product, service, or place is based only on their own personal experiences. Perceived behavioural control (PBT) is an abbreviation. When individuals

in reference groups like family and friends affirm a person, they use a "subjective standard." As a result, several studies have explored the impact of travellers' impressions on future or current travel habits.

Thus, the study will investigate how the wider idea of planned behaviour influences travel decisions during and after the outbreak. To get you started, consider the following ideas.

Hypothesis 7: During the epidemic, passengers' intentions to go or not.

Hypothesis 8: Traveller perceptions of behavioural control impact pandemic travel frequency, duration, and post-pandemic travel plans.

Hypothesis 9: After a pandemic, individuals are more likely to travel, and how frequently.

Hypothesis 10: Anxiety about health is a key impediment to travel during a pandemic.

Hypothesis 11: Travel frequency and length are influenced by prior travel experience.

3   Collecting Data and Samples

Travellers and non-travellers alike are included in the study's target population. When it comes to a COVID-19 outbreak, Bangalore is one of the well-prepared cities in the world. It was possible for many Bangalore's to travel throughout India during the epidemic because of this deliberate social isolation. Consequently, Bangalore is an ideal location to explore post-pandemic travel plans.

A self-administered survey was done in Bangalore. In September 2021, a group of international tourists was surveyed. The quality and integrity of the data are protected by a number of measures.

To begin, the length of the poll was scrutinised in order to weed out any offensive comments. Second, we weeded out candidates who got a few questions wrong. Each responder received a different set of questions, which was done at random to ensure that there was no bias in the responses. No effect on the average or standard deviation is had by ordering the data collection. As a starting point, the poll identified terms like the COVID-19 pandemic and domestic/international travel as essential. Depending on the number of verified cases, a total of 20,000 questionnaires were dispersed equally throughout Bangalore's three major residential zones (Fig. 1).

3.1   Metrics

During the pandemic, a binary variable was constructed to signify whether or not a person was ready to relocate. Only domestic travel was reported because of the outbreak's stringent travel restrictions. We also tallied the number of responders that travelled inside the United States. Future travel plans are graded on a five-point scale (strongly disagree-1 to strongly agree-5). Examination of domestic and foreign travel was conducted using six
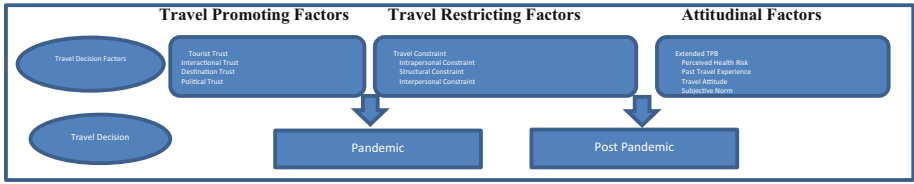
Fig. 1. The impact of travel decision factors on travel decision. Travel choice considerations have an impact on the decision to travel.

questions (three items per each). Cronbach's alpha values surpass 0.9 in both domestic and international travel choices. On a scale of one to five, the independent variables were ranked. From vehemently disagreeing to firmly agreeing. Political trust is 0.94, destination trust is 0.88, and interactional trust is 0.86, all of which are over the 0.8 threshold for trustworthiness. The study of trip-limiting characteristics made use of both within- and between-person limitations. Because of the epidemic, I was unable to bring along any family or friends. All of these variables may be controlled, including gender, age, and education (high school, bachelors, masters, and doctorates), as well as intrapersonal and social distance constraints. We grouped these six categories into three subgroups based on the baseline of our model (under 200000, 200001–400000, and beyond 400000). Table 1 displays the data.

3.2 Analysis of the Study

There were two models used to estimate how often people travelled during the pandemic: negative binomial logit models and positive binomial logit models. The following is anticipated from the trip option's utility function Un.

$$Un = \beta no + \sum_{g=1}^{G} \beta ngPF.PFng + \sum_{h=1}^{H} \beta nhRF.RFnh + \sum_{k=1}^{K} \beta nkAF.AFnk + \sum_{q=1}^{Q} \beta nqCV.CVnq + \varepsilon n$$

Positive Binomial Logit Models examined the impact of encouraging, restricting, and expanding planned behaviour on travel choices during the course of the pandemic, whereas Negative Binomial Logit Models examined the frequency of travel as assessed by E-views. We'll assume n's utility function is as follows for the trip option:

$$\int_{\beta}^{exp} \beta no + \sum_{g=1}^{G} \beta ngPF.PFng + \sum_{h=1}^{H} \beta nhRF.RFnh + \sum_{k=1}^{H} \beta nkAF.AFnk +$$

$$\sum_{q=1}^{H} \beta nqCV.CVnq + \varepsilon n/1 + exp\beta no + \sum_{g=1}^{G} \beta ngPF.PFng + \sum_{h=1}^{H} \beta nhRF.RFnh +$$

$$\sum_{k=1}^{H} \beta nkAF.AFnk + \sum_{q=1}^{H} \beta nqCV.CVnq + \varepsilon n \quad \varnothing(\beta n \backslash b, W)d\beta n.$$

Table 1. Descriptive statistics.

Promoting factors		
Destination trust	3.09	0.81
Interactional trust	3.13	0.88
Political trust	3.64	0.94
Attitudinal factors		
Behavioural control	3.38	0.76
Subjective norm	2.82	0.93
Travel attitude	3.81	0.85
Restricting factors		
Social distancing	3.67	0.84
Interpersonal constraint	2.15	0.87
Intrapersonal constraint	3.46	0.88
Control variables		
Used to make international trips	53%	
Used to make domestic trips	91%	
Health risk perception	3.64	0.84
Age	43%	
Gender	48%	
Doctorate	4%	
Master	13%	
Bachelor	72%	
High school	16%	
Income(1)	11%	
Income(2)	8%	
Income(3)	22%	
Income(4)	21%	
Income(5)	13%	
Income(6)	26%	

Its mean and its standard deviation. Using a random logit model instead of a conventional logit model provides a number of advantages. There was a Normal distribution in this case. One thousand drawings were randomly drawn as part of the experimentation. The results are steady and impartial after 1000 draws. Positive Binomial Count NegBin Model for Trip Frequency. Gurmu and Trivedi, 1996 as a consequence of this:

$$P(Yn) = \frac{\gamma\left(\alpha^{-1}+y1\right)}{\gamma\left(\alpha^{-1}\right)\gamma(y1+1)}$$

$$\frac{\alpha^{-1}}{\alpha^{-1}+exo\{\beta no+}$$

$$\sum_{g=1}^{G}\beta ngPF.PFng + \sum_{h=1}^{H}\beta nhRF.RFnh + \sum_{k=1}^{H}\beta nkAF.AFnk + \sum_{q=1}^{H}\beta nqCV.CVnq\}$$

$$exp\{\sum_{g=1}^{G}\beta ngPF.PFng + \sum_{h=1}^{H}\beta nhRF.RFnh + \sum_{k=1}^{H}\beta nkAF.AFnk + \sum_{q=1}^{H}\beta nqCV.CVnq\}/\alpha^{-1}$$

$$+ exp\{\sum_{g=1}^{G}\beta ngPF.PFng + \sum_{h=1}^{H}\beta nhRF.RFnh + \sum_{k=1}^{H}\beta nkAF.AFnk + \sum_{q=1}^{H}\beta nqCV.CVnq\}$$

$$\forall Yn = \{0, 1, 2\ldots\ldots\ldots n\}$$

Explanatory factors influence P through the Gamma function in this situation (yt). E(yn) is compared to V(yn) based on the parameter's importance (yn).

$$E(Yn) = exp\{\sum_{g=1}^{G}\beta ngPF.PFng + \sum_{h=1}^{H}\beta nhRF.RFnh + \sum_{k=1}^{H}\beta nkAF.AFnk + \sum_{q=1}^{H}\beta nqCV.CVnq\} = 1$$

When the number of trips is zero, the Negative Binomial model should be changed to reflect this. Both Cameron and Trivedi (1998):

$$P(Yn) = \frac{\gamma\left(\alpha^{-1}+y1\right)}{\gamma\left(\alpha^{-1}\right)\gamma(y1+1)}$$

$$\frac{\alpha^{-1}}{\alpha^{-1}+exo\{\beta no+}$$

$$\sum_{g=1}^{G}\beta ngPF.PFng + \sum_{h=1}^{H}\beta nhRF.RFnh + \sum_{k=1}^{H}\beta nkAF.AFnk + \sum_{q=1}^{H}\beta nqCV.CVnq\}$$

$$exp\{\sum_{g=1}^{G}\beta ngPF.PFng + \sum_{h=1}^{H}\beta nhRF.RFnh + \sum_{k=1}^{H}\beta nkAF.AFnk + \sum_{q=1}^{H}\beta nqCV.CVnq\}/\alpha^{-1}$$

$$+ exp\{\sum_{g=1}^{G}\beta ngPF.PFng + \sum_{h=1}^{H}\beta nhRF.RFnh + \sum_{k=1}^{H}\beta nkAF.AFnk + \sum_{q=1}^{H}\beta nqCV.CVnq\}$$

$$\forall Yn = \{0, 1, 2\ldots\ldots\ldots n\}$$

Probity models employ a variety of factors to predict future travel plans (we use Eviews to estimate this model). Ordered logit is a good fit since the scale is ordinal. The utility's function is to provide a service:

$$ITn = \delta 0 + \sum_{g=1}^{G}\beta ngPF.PFng + \sum_{h=1}^{H}\beta nhRF.RFnh + \sum_{k=1}^{H}\beta nkAF.AFnk + \sum_{q=1}^{H}\beta nqCV.CVnq\} + \mu 0$$

Table 2. Decision to travel during the pandemic

Variable	Logit model		Random parameter logit model				
	Coeff.	t	Coeff.	t	Var(β)	t	Marginal effect
Promoting factors							
Political trust	−0.1614[b]	−2.12	−0.2573[c]	−1.81	0.4238[a]	2.18	−0.0419
Interactional trust	0.3232[a]	3.21	1.0512[a]	7.69	0.3362	1.51	0.1614
Destination trust	0.0625	0.49					
Extended theory of planned behaviour factors							
Past (domestic) travel experience	0.7421[a]	2.61	0.7417[a]	3.40	1.7731[c]	1.80	0.1181
Past (international) travel experience	−0.0736	−0.38					
Subjective norm	0.1516[c]	1.59	1.6719[a]	8.89	0.7492[a]	3.41	0.2647
Perceived health risk	−0.1828	−1.57					
Travel attitude	0.4247[a]	4.59	1.1949[a]	4.28	0.2532[a]	2.59	0.1893
Behavioral control	0.0239	0.29					
Restricting factors							
Intrapersonal constraint	−0.4112[a]	−3.76	−1.4021[a]	−11.61	0.8628[c]	1.71	−0.2218
Social distancing	−0.2771[a]	−2.87	−1.0569[a]	−3.31	1.1221[a]	3.23	−0.1658
Interpersonal constraint	0.0136	0.27					
Control variables							
Age	0.0058	0.32					
Gender	0.1613	1.21					
Doctorate	−0.0886	−0.28					
Master	−0.0619	−0.32					
Bachelor	−0.4479[b]	−2.21	1.3823[a]	5.49	1.0626[c]	1.89	0.2196
Income(3) + Income(4)	0.1427	0.69					
Income(5) + Income(6)	0.5817[a]	2.73	1.2617[a]	3.91	1.2342	1.31	0.1978

(*continued*)

Table 2. (*continued*)

Variable	Logit model		Random parameter logit model				
	Coeff.	t	Coeff.	t	Var(β)	t	Marginal effect
Copula Past (international) travel experience	1.7672	0.58					
Copula Past (domestic) travel experience	0.0135	0.12					
Constant	0.9163	1.23	1.5359[a]	10.48			
Log-likelihood	−676.59		−695.59				

a = prob < 1%; b = prob < 5%; c = prob < 10%.

The parameters of the system Predicted future travel plans were made by the following groups: All of these traits have a bearing on how likely people are to travel in the future. The normalcy of the error term is my last point.

Latent variables, such as ITn, exist only in the mind of the observer. There are five unique classes from which respondents might choose. The ITn random term of the utility function may be used to estimate a person's likelihood of selecting a category.

P(Un k1) = P("Category 1").
P (k1Unk2) = P ("Category 2").
P (k2Unk3) = P ("Category 3").
P (k3Unk4) = P ("Category 4").
P (k4Un) = P ("Category 5").

Latent variables, such as ITn, exist only in the mind of the observer. There are five unique classes from which respondents might choose. Each category's random term ITn from the utility function is utilised to estimate the likelihood of.

$$\frac{\partial p(y=i)}{\partial x} = \frac{\partial \varnothing (Ki+1-x'\beta)}{\partial x} = \frac{\partial \varnothing (Ki-x\beta)}{\partial x}$$ Where ϕ is the normal cumulative function.

4 Results

Before creating travel models, we make sure that they aren't based on assumptions about the epidemic's spread. It wasn't possible to detect any correlation between coefficients with variance inflation factors smaller than 10. According to Neter and colleagues (1989), Following Breusch-Pagan, we utilised standard errors compatible with (F = 4.75) White City (p 0.01) (1980).

There are a plethora of possibilities because to the variable "experience." The inaccuracy of the previous utility function may be connected to the error of the present decision and utility function since experience is the product of a prior choice. Keeping everything in order is essential. A Gaussian copula-based approach is used to do this.

In order to generate copula words for domestic and international travel experience, a control function explicitly represents the combined distribution of the error term and the endogenous variable (Tables 3 and 4).

Table 3. Travel frequency

Variables	NegBin model 1		NegBin Model 2		
	Coeff.	t	Coeff.	t	Marginal effects
Promoting factors					
Destination trust	0.0234	0.46			
Interactional trust	0.0231	0.49			
Political trust	0.0423	1.41			
Extended theory of planned behaviour factors					
Past (domestic) travel experience	0.5227[a]	4.81	0.5151[a]	5.69	1.6736
Past (international) travel experience	0.0814	1.42			
Subjective norm	0.0612[c]	1.73	0.0879[a]	3.11	1.0917
Perceived health risk	−0.0814[b]	−2.21	−0.1128[a]	−3.72	0.8932
Travel attitude	0.0851[b]	2.32	0.1232[a]	3.49	1.1289
Behavioural control	0.06	1.61			
Restricting factors					
Social distancing	−0.0632[b]	−2.19	−0.0791[a]	−2.72	0.9262
Intrapersonal constraint	−0.0567	−1.38			
Interpersonal constraint	−0.0082	−0.43			
Control variables					
LR statistic	1737.4		1782.2		
Age	−0.0071[a]	−3.32	−0.0067[a]	−3.23	0.9939
Doctorate	0.2252	1.49			
Master	0.0517	0.69			
Bachelor	−0.0734	−1.28			
Income(3) + Income(4)	0.1642[b]	2.29	0.1822[a]	2.72	1.1989
Income 5 + Income 6	0.1738[b]	2.41	0.2141[a]	2.87	1.2391
Copula Past (international) travel exp	1.0371	1.21			
Copula Past (domestic) travel exp	−0.0317	−0.89			

(*continued*)

Table 3. (*continued*)

Variables	NegBin model 1		NegBin Model 2		
	Coeff.	t	Coeff.	t	Marginal effects
Constant	0.9321[a]	3.19	1.0813[a]	4.13	
α (dispersion parameter)	−0.8720	−14.83	−0.8661	−14.42	

a = prob < 1%; b = prob < 5%; c = prob < 10%.

The normal distribution has been flipped. HDPTE is the empirical distribution function for domestic travel.

The utility function must contain the copula argument if endogeneity is taken into account. Mathys et altwo-key stage copulas are used to arrive at the final estimations.

In each model, the first column comprises all of the hypothesised variables and copulas, whereas the second column provides the simplified model parameters. Every one of the three alternatives follows the same pattern.

4.1   Travel Choices and Frequency

Using data from the Random Parameter Logit Model, the right-hand side of Table 2 demonstrates heterogeneity owing to a large number of variables with significant variance (left hand section in Table 2). Several characteristics, including trust, attitude toward travelling, and domestic travel experience, are used to support these beliefs. Theories 4 and 6 are supported by the negative effects of political trust, internal restrictions, and social isolation. People feel more comfortable with one other as a result of this. Intrapersonal and social distance limits determine travel's harmful implications. Looking at the minor effects, we may make comparisons between different magnitudes. Hypotheses 1, 2, 5, 8, and 10 were shown to be untrue. High income and the ability to travel are significantly harmed by things outside one's control.

Those who had previously travelled domestically were more likely to travel often, while those who had health issues and social isolation were less likely to do so (hypotheses 6 and 10). Travel attitudes were influenced by a number of factors, including age (0.99), social isolation (0.92), and health risk information (0.92). (0.89). In contrast to money, ageing has the opposite effect.

4.2   Post-epidemic Travel Plans

Traveling to America requires careful consideration of these factors. Travel behaviour and attitude are positively influenced by behavioural control, while health risk perception is negatively influenced. There are serious repercussions to any kind of discrimination. The chance of travelling increases significantly with both a bachelor's and a doctorate degree, although the gender of the traveller decreases.

When planning a travel to another country, bear these things in mind: If we consider the notion of planned behaviour components, we see that behavioural predictability has a significant positive impact and that, for foreign travel, interactional trust is less

Table 4. Future intention to travel

Variables	Intention to travel domestic				Intention to travel abroad			
	Ordered Probit Model 1		Ordered Probit Model 2		Ordered Probit Model 3		Ordered Probit Model 4	
	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t
Promoting factors								
Destination trust	0.0243	0.26			0.2347b	2.52	0.2917a	4.00
Interactional trust	0.1804b	2.23	0.1945a	3.09	0.0832	1.08		
Political trust	0.2678a	4.33	0.2915a	5.09	−0.2241a	−3.86	−0.2226a	−3.84
Extended theory of planned behaviour factors								
Past (domestic) travel experience	0.3549c	1.75			−0.2952	−1.54		
Past (international) travel experience	0.1371	1.27			0.3974a	3.88	0.4568a	4.70
Perceived health risk	−0.1729b	−2.08	−0.1672b	−2.06	−0.0441	−0.57		
Subjective norm	−0.1052	−1.53			0.3521a	5.28	0.3606a	5.59
Behavioural control	0.3045a	3.73	0.2635a	3.47	0.1718b	2.19	0.1773b	2.32
Travel attitude	0.6735a	8.84	0.6175a	8.73	0.0088	0.14		
Restricting factors								
Interpersonal constraint	−0.2988a	−4.78	−0.3252a	−5.34	0.1844a	3.16	0.1733a	3.08
Intrapersonal constraint	−0.1861b	−2.36	−0.1625b	−2.09	−0.1569b	−2.08	−0.1687a	−2.89
Social distancing	0.1689a	2.59	0.1663a	2.57	0.0045	0.08		
Control variables								
Age	−0.1918c	−1.81			−0.3434a	−3.42	0.0105a	2.83
Gender	0.0069	1.61	−0.2298b	−2.23	0.0105b	2.57	−0.3529a	−3.63
Doctorate	0.7207b	2.11	0.7519b	2.31	0.2157	0.68		
Master	0.1364	0.67			0.1368	0.68		
Bachelor	0.3105b	2.09	0.2303b	2.01	0.2159	1.51		
Income(3) + Income(4)	0.1908	1.36			−0.1303	−0.97		
Income(5) + Income(6)	0.2099	1.38			0.0993	0.69		
Copula Past (international) travel experience	−1.1861	−0.64			−0.7522	−0.44		
Copula Past (domestic) travel experience	0.0127	0.19			−0.2284a	−3.41		
Threshold(k1)	0.2502	0.38	−0.6536	−1.25	0.5997	1.04	0.7713c	1.86
Threshold(k2)	1.8838a	3.02	0.9768c	1.94	2.0956a	3.58	2.2543a	5.41
Threshold(k3)	3.6137a	5.76	2.7018a	5.33	3.3492a	5.71	3.4935a	8.26

(*continued*)

Table 4. (*continued*)

Variables	Intention to travel domestic				Intention to travel abroad			
	Ordered Probit Model 1		Ordered Probit Model 2		Ordered Probit Model 3		Ordered Probit Model 4	
	Coeff.	t	Coeff.	t	Coeff.	t	Coeff.	t
Threshold(k4)	6.3765a	9.88	5.4467a	10.39	4.9717a	8.31	5.0993a	11.64
Pseudo(R-squared)	0.088		0.084		0.049		0.043	
LR statistic	312.1a		298.6		204.2		183.7	

a = prob < 1%; b = prob < 5%; c = prob < 10%.

Table 5. Marginal effects on intention to travel domestic.

Variables	Category 1	Category 2	Category 3	Category 4	Category 5
Political trust	−0.000009	−0.0021	−0.0668	0.0435	0.0262
Interactional trust	−0.000007	−0.0019	−0.0446	0.0287	0.0175
Interpersonal constraint	0.000010	0.0031	0.0745	−0.0483	−0.0290
Intrapersonal constraint	0.000006	0.0016	0.0373	−0.0243	−0.0146
Behavioural control	−0.000008	−0.0026	−0.0604	0.0393	0.0237
Social distancing	−0.000006	−0.0016	−0.0382	0.0248	0.0148
Age	−0.000008	−0.0022	−0.0528	0.0344	0.0208
Gender	0.000008	0.0022	0.0527	−0.0343	−0.0207
Travel attitude	−0.000019	−0.0056	−0.1414	0.0921	0.0553
Doctorate	−0.000019	−0.0071	−0.1722	0.1121	0.0673
Health risk perception	0.000006	0.0017	0.0384	−0.0248	−0.0148

relevant than destination trust. Hypotheses 4 and 8 are thus correct, but hypotheses 1, 2, 3, 5, 7, 9, 10, and iii are incorrect. Travel intentions are shown in Tables 5 and 6, with Table 5 focusing on domestic travel intentions; Health risk perception, gender, personal constraint, and social isolation all play a role in Category 1. Interpersonal trust and behavioural control may both be diminished via a PhD programme under certain circumstances. Specifically, the fifth-place placement in category 5 has been reversed: Anxiety over one's own physical and mental well-being, as well as discrimination based on gender, are all side effects that should be avoided.

There seems to be a negligible impact on travel plans as shown in Table 6. Category 1 is somewhat better off with respect to age, political trust, and personal restraint. Gender and past international travel experience will be discussed in the next section. Prior (foreign) travel experience had a greater impact on category 5 than confidence in the place, behavioural control, interpersonal constraints, and gender. All of the self-control, political confidence, and age trials are summarised in Table 7.

Table 6. Marginal effects on intention to travel abroad.

Variables	Category 1	Category 2	Category 3	Category 4	Category 5
Age	0.0643	0.0729	−0.0893	−0.0467	−0.00125
Gender	−0.0018	−0.0023	0.0027	0.0015	0.00005
Behavioural control	−0.0323	−0.0367	0.0449	0.0235	0.00063
Subjective norm	−0.0657	−0.0746	0.0913	0.0477	0.00128
Interpersonal constraint	−0.0316	−0.0359	0.0439	0.0228	0.00062
Intrapersonal constraint	0.0308	0.0349	−0.0428	−0.0224	−0.00058
Past (international) travel experience	−0.0832	−0.0944	0.1156	0.0604	0.00162
Destination trust	−0.0532	−0.0603	0.0739	0.0386	0.00104
Political trust	0.0406	0.0458	−0.0564	−0.0295	−0.00079

Table 7. Results of hypotheses testing.

Hypotheses	The decision to travel for domestic trip during the pandemic		Future intention to travel after the pandemic (Domestic and International travel) Whether to
	Travel Frequency	Whether to Travel	
Hypotheses1-Political trust → Travel decision	-Rejected-	-Rejected-	-Partially Supported-
Hypotheses2-Destination trust → Travel decision	-Rejected-	-Rejected-	-Partially Supported-
Hypotheses3-Interactional trust → Travel decision	-Rejected-	-Supported-	-Partially Supported-
Hypotheses4-Intrapersonal constraints → Travel decision	-Rejected-	-Supported-	-Supported-
Hypotheses5-Interpersonal constraints → Travel decision	-Rejected-	-Rejected-	-Partially Supported-
Hypotheses6-Social distancing constraint → Travel decision	-Supported-	-Supported-	-Supported-
Hypotheses7-Travel attitude → Travel decision	-Supported-	-Supported-	-Partially Supported-

Table 7. (*continued*)

Hypotheses	The decision to travel for domestic trip during the pandemic		Future intention to travel after the pandemic (Domestic and International travel) Whether to
	Travel Frequency	Whether to Travel	
Hypotheses8-Perceived behavioural control → Travel decision	-Rejected-	-Rejected-	-Supported-
Hypotheses9-Subjective norm → Travel decision	-Supported-	-Supported-	-Partially Supported-
Hypotheses10-Perceived health risk → Travel decision	-Supported-	-Rejected-	-Partially Supported-
Hypotheses11-Past travel experience → Travel decision	-Supported-	-Supported-	-Partially Supported-

5 Impact Statement

A pandemic tourism strategy may not be universally embraced, but even so, the study's results show how tourism specialists may successfully attract tourists following a pandemic. Tourism markets are included in this study. Traveling alone is becoming more popular, in part because it is free of social obligations. This market segment has to be identified and strategies devised to entice it. The pandemic's positive impact on future travel plans has highlighted the need of elder tourism. Many people plan to travel more inside the United States and abroad after the outbreak. Priority must be given to this market in the wake of the illness pandemic.

6 Conclusions

Massive tourist losses have been incurred because to the COVID-19 outbreak. As a consequence of the pandemic, this study evaluated how visitors' domestic travel experiences and future plans are influenced by variables that encourage and constrain travel. A new study explores the impact of different trust levels at the macro-, meso-, and micro-levels on people's decision to travel (interactional trust in other travellers). In the event of a pandemic, travel restrictions may be more accurately described by extending current frameworks. It's everything here. Last but not least, this study re-examines and broadens the idea of planned behaviour to include perceived health risk and past travel experience. These structures aid in tracing the spread of an epidemic both before and after it has begun.

6.1 Research Limitations and Future Scope

Recognizing the boundaries of investigation allows for the discovery of new pathways of study. Future research may call for a broader definition of plans and constraints on where participants may go. A person's choice to travel may be influenced by several factors (such as personal trust, geographic location, available time, and available funds) (Kim et al. 2009; Nyaupane and Andereck 2008). Government restrictions, family economy, personality traits, and emotional state should all be examined further in future research. To understand how the COVID-19 epidemic spread, it may be helpful to know how they work when travelling.

Foreign tourists should be the focus of future studies. Due to the study's concentration on Bangalore tourists, the findings cannot be generalised. Further investigation on the impact of cultural differences on decision-making is possible in the future (Crotts and Erdmann 2000). For example, individualism or collectivism may have an impact on how trust affects travel decisions (Hofstede and Bond 1984). By examining people's final destination and method of transportation, we may learn more about what motivates their decisions.

Post-pandemic study should look at what makes people want to travel and what keeps them from doing so. Decision-making and travel intentions may be influenced by a travel restriction during an epidemic of infectious disease. Analysis of travel plans after a pandemic outbreak may be improved.

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ESG and Implementation of Technology

The Determinants of Environmental Accounting Disclosure: A Review of the Literature

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Abstract. A review of relevant academic studies has yielded a range of environmental accounting disclosure determinants. This review aims to provide a comprehensive view of the determinants of environmental accounting disclosure. This paper reviews published environmental accounting disclosure studies to explore the effect of various factors on environmental disclosure. The findings show that the company's environmental performance, size, and profitability play a critical role in the environmental disclosure process. This paper notes that the determinants of environmental disclosure are varied, changeable, and limitless. It is desired that this structured examination of the factors influencing the current and future status of environmental accounting disclosure will provide a sufficient overview of the critical issues and concerns that must be addressed in order to comprehend and advance the critical application of environmental accounting disclosure in social, economic, and environmental development. This article is expected to have an impact on future policies, which will help to improve the disclosure process. This paper contributes to the ongoing debate about the environmental disclosure mechanisms that lead to more disclosure of the determinants of environmental accounting disclosure and highlights the need for a new approach on these issues.

Keywords: Environmental disclosure · Corporate governance · Environmental accounting

1 Introduction

It is a societal, environmental, and individual duty to address environmental challenges and determinants. The association of different environments with society reinforces decisions about companies' disclosure of their environmental activities. Typically, social and environmental disclosure refers to information about a companies' operations, ambitions, and public image in relation to environmental, community, employee, and consumer issues [1]. Therefore, this research presents the following question:

- What are the factors that affect environmental disclosure?

Enterprises have generated significant economic profits and social value through their economic activities. These accomplishments, however, have resulted in some environmental damage [2], such as emission, climate change, and waste. The world's most difficult environmental problem is global warming and climate change [3]. Based on that, this research seeks to present the factors that affect the environmental disclosure of companies, the outcomes of this research are to reach a healthy and clean environment by increasing the level of environmental disclosure by corporations. Taking these factors into consideration, the company will be able to make decisions that will help its survival and growth. Local governments, as well as individuals, enterprises, and other groups, can use urban sustainability reporting to keep track of their progress toward attaining environmental growth [4]. This boosts the companies social, market, and environmental reputation, putting it ahead of its competitors. Environmental disclosure, as one sort of voluntary environmental regulation, plays a significant role in fostering the sustainable development of businesses by increasing their environmental consciousness [5]. Environmental accounting data is made public so that users may see how company action affects the environment [2].

The literature on environmental disclosures quality, quantity, and determinants has mainly been integrated into the literature on corporate social responsibility (CSR) reporting [6]. In response to institutional pressure, firms have dramatically raised their environmental disclosure in relation to their environmental strategy over the previous 15 years [7]. Environmental disclosure can be a strategic tool for a company as it attempts to gain its desired image and obtain recognition and credibility [8].

The understanding of environmental accounting disclosure determinants is important for companies as it helps in developing and advancing a sustainable competitive advantage over others. Companies worldwide are witnessing great competition in the emerging green markets regarding the environment, so the environmental performance of companies is an important factor in determining the competitive success of the corporate environment, in response to an environmental or green challenge [9]. Therefore, this paper is associated with theoretical implications that might benefit the researchers, companies' managers, environment activists, and policymakers as it provides a comprehensive understanding of the determinants of environmental disclosure.

The Environmental, Social, and Governance (ESG) ratings appear to be an indicator of sustainability performance and improving it in the future, according to the literature on sustainability. Where sustainability allows companies, particularly those in developing nations, to stabilize their gains [10, 11]. In principle, a balanced approach to a company's environmental, social, and economic performance is required for CSR and sustainability management. Due to a global sense of urgency, media pressure, and stakeholders, recent developments have focused more on environmental responsibility (e.g. CO_2 emission reduction, global warming, and the after-effects of the 2004 tsunami). Environmental stewardship is regarded as an essential component of the larger notion of sustainability management. In addition, Elkington (1998) invented the term "triple bottom line" to describe corporate sustainability, which he defined as three components of sustainability (environmental, economic, and social) [12]. The periodicity of ESG disclosure is influenced by the ownership and membership status of various corporations.

ESG reporting, in turn, has an impact on both environmental and financial performance. Whereas accountability is the primary motivator for ESG disclosure [13].

The current study is conducted taking into consideration the importance and appropriateness of the social, economic, and environmental processes that affect disclosure procedures as being of value to all stakeholders at the corporate and community level, thus promoting the achievement of sustainability in the environment as a whole. Since disclosures are essential when made on the basis of rapid growth, the disclosure process contributes to preserving environmental damage. This paper is conducted to clarify a large number of factors affecting environmental accounting disclosure with an explanation of the measurements that are used for each of these factors and that facilitate the disclosure process in different sectors across different countries. Previous studies focus only on finding a certain number of variables and clarifying the relationships between them. In addition, this paper contributes to expanding the discussion about environmental disclosure mechanisms that serve disclosure processes. This paper fills this gap by organizing a large number of variables into finding the type of relationship between these variables and the appropriate measurements used for these variables to improve the efficiency of the disclosure procedure.

The remainder of this paper is organized as follows: The next section explores the motivation for the study, sparsely reviewing the previous literature and thus seeking to expand the discussion on environmental accounting disclosure and social responsibility reporting, and then presents the research theory used in the study. The third section explains the research design and the databases used in the study. The fourth section explains the factors affecting environmental disclosure through previous studies and then the measures used for each factor. Finally, shows the conclusion of the research through the conclusion sentence and clarification of the limitation, and then the future research.

2 Literature Review and Research Theory

2.1 Literature Review

The growing public awareness of environmental and social issues has contributed to a transition in business practices [14]. Multinational corporations originally proposed the concept of corporate social and environmental responsibility in the 1990s, but no attention was paid at the time [15]. CSR (corporate social responsibility) is an integral part of a business's operations [14]. CSR reports are important tools for organizations in establishing transparent communications with stakeholders regarding their environmental, social, and government performance [16]. As a result, corporations have begun to provide voluntary external, independent assurance of CSR reporting undertaken by a third party in order to boost its credibility [17].

Companies prioritize CSR efforts that are directly tied to maintaining the company and accomplishing financial goals, resulting in system improvements and more CSR disclosures [18]. Environmental disclosure improves the quality of information and the legitimacy of a company, allowing analysts to make more accurate predictions [19].

According to Albertini [7], all firms' environmental disclosure will become more technical and accurate, Furthermore, environmental innovations are promoted as a means of improving energy efficiency and gaining a competitive advantage in green market items. This has led to an increase in the interest of companies and stakeholders in the level of corporate environmental disclosure.

Environmental accounting data is still in its infancy when it comes to public disclosure. In many ways, environmental spending and environmental responsibility disclosure are driven by separate logic, including weak criteria and poor direction [20]. Corporations in strong financial standing disclose more information about the environment than corporations in bad financial standing [21]. Environmental disclosures are those that relate to the influence that an organizational activity or operation may have on the natural environment [22]. The term "environmental disclosure" refers to the amount of information regarding a company's environmental consequences and practices that are publicly available [23]. Mandatory environmental reporting has been viewed as a strategy to increase organizations' environmental accountability [24].

Disclosure of a company's environmental performance assists stakeholders to have a better understanding of how corporations may contribute to a more sustainable world [25]. In addition to the fact that environmental disclosure in financial reports lessens the impact of toxic discharge inventories, companies with poor environmental performance suffer from negative market reactions more than enterprises with excellent environmental performance [26]. Companies in environmentally sensitive industries are seen as the greatest potential harm to the natural environment [27].

Environmental issues are a major concern of the scientific community due to the multiple consequences they have on ecosystems and human life [28]. Companies utilize environmental disclosure as one of their techniques to get societal acceptance and approval of their activity [29]. On a more practical level, by better understanding the determinants of corporate environmental accountability in the context of corporate governance, stakeholders such as investors will be better informed about corporate sustainable behavior and will be able to assess and distinguish firms that disclose sustainable information, reducing information asymmetry [30].

Environmental disclosure practices are a means of communicating to stakeholders on the impact of an firm's actions on the environment, and stakeholders, (government, and international funding agencies) are putting increasing pressure on organizations to publish environmental reports [31]. Industry green leaders are likely to be making more disclosure since they are leaders in financial and environmental initiatives [32]. Social and environmental issues are becoming increasingly strategic in a growing variety of industries, and businesses are attempting to build strategies that will ensure long-term success [33].

Over the last ten years, the natural environment has become an increasingly critical commercial issue, and the issue of corporate environmental disclosure has been thoroughly researched from the perspective of shareholders [34].

Based on Burch [35], Corporations can interact with their stakeholders in a variety of ways these present, in addition to the typical annual report, in a wide range of media outlets accessible. Different disclosure types and issues are valued differently by

stakeholders. CSR reports provide more social and environmental information to stakeholders than annual reports [36]. While there is a link between the level of environmental actions conducted by firms and the reporting that follows, this is related to the process of organizational change: it depicts the business response to pressures to regard the natural environment [37]. A board of directors tends to increase a company's transparency, improve its reputation, decrease information asymmetry, lower agency costs and the cost of capital, improve cash flow, and raise share prices [38].

Companies that have increased their environmental performance as a result of their proactive environmental strategy have an incentive to inform investors and other stakeholders about their strategy by voluntarily disclosing more environmental data [39]. Large corporations need to satisfy a larger number of stakeholders that are concerned about environmental management and corporate objectives [40]. Large corporations pay a higher price for preparing and publishing environmental data because they should spend more financial and technical resources than medium and small businesses [41]. According to da Silva Monteiro and Aibar-Guzmán [41], the increasing interest by investors to obtain information about the social responsibility of listed companies affects their social and environmental disclosure practices and the extent to which they disclose environmental information.

2.2 Research Theory

The body of knowledge in the fields of CSR and corporate governance has aided in the development of a wide spectrum of empirical evidence, this provides a framework for this study [42]. Various theoretical frameworks have been used to understand the empirical evidence contained in the earlier literature, including legitimacy theory [19], stakeholders theory [42], agency theory [43], and institutional theory [44]. This research will use stakeholder theory. According to stakeholder theory, environmental disclosures are practiced because stakeholders demand and managers offer environmental information that they believe is truly what the stakeholders want [32].

Stakeholders are the parties affected by the achievement of the organization's goals, whether internal or external. Stakeholder theory is divided into two branches: the ethical branch, which takes normative views of how the organization operates, and the second branch, the management branch, which attempts to explain when company management is likely to care about the expectations of powerful stakeholders. Based on Lu and Abeysekera [45], stakeholder theory focuses on special interest groups' expectations. Furthermore, stakeholders differ in terms of the nature and degree of influence they have over the company's operations. Stakeholder theory describes the intensity of opposing demands and preferences of powerful stakeholders, indicating that companies emphasize broad conceptions of overall accountability to a diverse set of stakeholders [25].

3   Research Design

A review paper is the best way to discuss the conceptualization of this research design [46]. The primary goal of this paper is to provide a comprehensive view of the determinants of environmental disclosure based on the literature in this area. In order to meet the research goal, this study conducted two steps to search for environmental disclosure-related articles. The first step entails searching for keywords and keyword strings that were included in the research [environmental disclosure] and [corporate governance]; [environmental accounting].

In the first step, the following databases were searched for relevant studies: Elsevier; Springer Link; emerald; Willey Online Library; Taylor & Francis Online; SAGE Journals; Research gate; Scopus. The second step includes snowballing search for all identified articles' reference lists. Only articles written in English were included in the search. The articles chosen were scattered out over a period of 27 years (1994–2021), the majority of the articles were written in the recent few decades. Therefore, it is suitable to cover paper on environmental disculousre topic during the last 27 years. The relevant studies were discovered and rigorously analyzed as a result of the search. The studies that were chosen for the review were those that studied the determinants of environmental disclosure.

4   Environmental Disclosure Determinants

This study has primarily focused on factors indicating structural firm-specific factors, ownership structure factors, and corporate governance factors. powerful determinants, factors, or variables that have a significant impact on environmental accounting disclosure, and do not have a priority over others. The company's environmental performance, size, and profitability play a critical role in the environmental disclosure process. The firm size is an important variable and has a significant impact on the disclosure process, as companies with the largest size report high levels of environmental disclosure. In comparison to smaller organizations, larger companies report more disclosure due to the magnitude of their operations [47]. Previous studies assert that the highest environmental performance for firms is associated with more disclosure of environmental information. Environmental performance is more likely to be disclosed by green corporations [32]. The company's financial performance in terms of return on assets and return on equity is related to the level of environmental disclosure [48]. Highly profitable corporations are perceived as more trustworthy by the public, resulting in increased disclosure of environmental practices [45]. Companies with higher profits can commit more resources to interact with stakeholders than companies with lower profits [49].

A company in strong financial conditions is also expected to make more detailed environmental disclosure than one in weak financial conditions [21]. Environmentally sensitive industries are subjected to higher societal and political pressure and, as a result, make more elaborate disclosures [47]. Companies that are listed on a stock exchange release more environmental information than companies that are not listed on a stock exchange [41].

Firms having a lengthy history (older firms) are reported to be more concerned about their reputation since their legitimacy is threatened by society [50]. Environmental management in the workplace is becoming more widely acknowledged as a major source of risk (e.g. International Auditing Standards) [44]. Larger boards may be better suited to reflect the many stakeholder interests [48]. Several scholars agree that the efficiency of a board in dealing with non-financial disclosure is influenced by its independence, which is directly linked to the board's strength [51] Corporations with more media exposure have a higher level of CSR activities [42]. The formation of an environmental committee is seen as a firm's capital resource [25].

State-owned and family-owned businesses are two key ownership characteristics that may influence CSR efforts, as well as ownership structure [42]. Market participants need to obtain private data is reduced as a result of the firm's increased disclosure [44]. Because the dominant shareholders often have access to the information they require, firms with concentrated ownership are unlikely to respond to public investors' information costs [44]. Because women differ culturally, traditionally, and socially from men, female leadership is an important aspect of corporate governance [52]. Corporations that have developed an environmental management system (EMS) that has received ISO 14001 certification or are registered in the EMAS will reveal more environmental data than other corporations [41].

Table 1, shows a summary of the determinants that affect environmental accounting disclosure arranged in ascending order and the degree of significance (positive, negative, or not significant) with reference to previous studies and the number of studies referenced for each factor.

Table 1. Summary of results of environmental disclosure determinants in Prior Studies

Factors	Number of studies	Reported sign	Empirical studies
Environmental performance	17	(+)	Deegan and Gordon [53] Clarkson, Li [39] AlTuwaijri, Christensen [54] Boura, Tsouknidis [8] Agyemang, Yusheng [2] Baalouch, Ayadi [25] Iatridis [55] Radu and Francoeur [56] Khlif, Guidara [33] Cormier and Magnan [21] Lu and Taylor [32]
		(NS)	Sutantoputra, Lindorff [57]
		(−)	Patten [58] Lyon and Maxwell [59] Guidry and Patten [60] Fontana, D'Amico [61] Hassan and Guo [49]

Table 1. (*continued*)

Factors	Number of studies	Reported sign	Empirical studies
Firm size	15	(+)	Cormier and Magnan [21] Gray, Javad [1] Guidry and Patten [60] Burgwal and Vieira [40] da Silva Monteiro and Aibar-Guzmán [41] Lu and Abeysekera [45] Andrikopoulos and Kriklani [62] Rabi [63] Chandok and Singh [64] Déjean and Martinez [65] Fontana, D'Amico [61] Prasad, Mishra [47] Juhmani [15]
		(NS)	Ohidoa, Omokhudu [66] Smith, Yahya [67]
Profitability	10	(+)	Aerts, Cormier [68] Iatridis [55] Juhmani [15] Lu and Abeysekera [45] da Silva Monteiro and Aibar-Guzmán [41]
		(NS)	Burgwal and Vieira [40] Smith, Yahya [67]
		(−)	Wichianrak, Wong [69] Chandok and Singh [64] Hassan and Guo [49]
Leverage	8	(+)	Chandok and Singh [64] Juhmani [15] Hassan and Guo [49]
		(NS)	Ohidoa, Omokhudu [66]
		(−)	Chaklader and Gulati [31] [65] Prasad, Mishra [47] Cormier and Magnan [21]
Industry membership high-profile	8	(+)	Burgwal and Vieira [40] Fontana, D'Amico [61] Prasad, Mishra [47] Lu and Abeysekera [45] da Silva Monteiro and Aibar-Guzmán [41]
		(−)	Lu and Taylor [32] Hassan and Guo [49]
		(NS)	Smith, Yahya [67]

Table 1. (*continued*)

Factors	Number of studies	Reported sign	Empirical studies
Book-to-market ratio	5	(+)	Cormier, Magnan [44] da Silva Monteiro and Aibar-Guzmán [41] D'Amico, Coluccia [70] Andrikopoulos and Kriklani [62] Cormier and Magnan [21]
Gender diversity	3	(+)	Raimo, de Nuccio [71] Baalouch, Ayadi [25]
		(−)	Rupley, Brown [72]
Concentrated ownership	3	(−)	Cormier, Magnan [44] Gerged [73] Lu and Abeysekera [45]
Firm age	3	(+)	Wichianrak, Wong [69] Prasad, Mishra [47] Juhmani [15]
Firm risk	3	(+)	Cormier, Magnan [44] Chandok and Singh [64] Cormier and Magnan [21]
Board size	3	(+)	Raimo, de Nuccio [71] Rabi [63] Gerged [73]
Board independence	3	(+)	Baalouch, Ayadi [25] Gerged [73]
		(−)	Rupley, Brown [72]
Media exposure	3	(+)	Rupley, Brown [72] Wichianrak, Wong [69]
		(NS)	Brammer and Pavelin [74]
CSR committee	2	(+)	Raimo, de Nuccio [71]
		(−)	Plumlee, Brown [75]
Trading volume	2	(+)	Cormier, Magnan [44] Cormier and Magnan [21]
Environmental certification	2	(+)	Chaklader and Gulati [31] da Silva Monteiro and Aibar-Guzmán [41]
Legislation	2	(+)	Fontana, D'Amico [61] Cormier and Magnan [21]

Note that (+) significantly positive; (−) significantly negative; (NS) Insignificant

Based on previous studies, Table 2 shows the measures that are used for each of the factors that affect environmental accounting disclosure and the references for each factor.

Table 2. Summary of variable measurements

Variables	Measurements	Reference
Environmental performance	Toxic release inventory (TRI) emissions by total revenue	Clarkson, Li [39]
Firm size	Employees number, sales volume, total assets, or index rank	Burgwal and Vieira [40]
Profitability	ROE or ROA	Burgwal and Vieira [40]
Leverage	Total debt divided by total assets	Abdullatif, Alhadab [76]
Industry membership high-profile	The classification criteria outlined in Roberts. or 1 if the firm is in environment sensitive sector and a 0 otherwise	Fontana, D'Amico [61]
Book-to-market ratio	The proportion of equity capital's market value to its book value	Andrikopoulos and Kriklani [62]
Gender diversity	The percentage of female members on the board	Baalouch, Ayadi [25]
Concentrated ownership	Total percentage of share owned by control blocks higher than 5%	Cormier, Magnan [44]
Firm age	Years number of the company's existence	Wichianrak, Wong [69]
Firm risk	Capital assets pricing	Cormier, Magnan [44]
Board size	Board members number	Prado-Lorenzo and Garcia-Sanchez [77]
Board independence	The percentage of independent directors on the board	Prado-Lorenzo and Garcia-Sanchez [77]
Media exposure	The average number of CSR-related articles published by local newspapers	Patten [78]
CSR committee	1 if a firm has CSR committee and 0 otherwise	Baalouch, Ayadi [25]
Trading volume	Annual trading volume (on domestic and foreign stock exchanges)/total number of shares outstanding	Cormier, Magnan [44]
Environmental certification	'ECO label' or 'ISO 14000'	Chaklader and Gulati [31]
Legislation	1 if the firm has faced legal actions in a given year, 0 otherwise	Cormier and Magnan [21]

5   Conclusion

Based on previous studies, this paper notes that the determinants of environmental disclosure are varied, changeable, and limitless. In addition, this paper explored the most important determinants of environmental disclosure and the measures that were used for each determinant. Although companies make great profits through economic activities, they also cause some damage to the environment. The company's environmental performance, size, and profitability play an important role in the environmental disclosure process. Environmental disclosure helps in the process of sustainable development where it is a prominent topic in business.

The importance of the study comes from the demands of stakeholders for more trustworthy disclosures of environmental information. Maintaining the company by achieving its financial goals and preparing social responsibility reports on an ongoing basis. Environmental issues are becoming increasingly important for economic decision-making, and ethical investors provide incentives for environmental information disclosure, which becomes increasingly important for thorough corporate valuation [48]. Moreover, maintaining the level of environmental disclosure that gives the company a competitive advantage with stakeholders. The term "environmental disclosure" refers to the amount of information regarding a company's environmental consequences and practices that are publicly available [23].

This paper contributes to environmental accounting researchers by identifying a large number of environmental disclosure determinants. In addition, this paper provides a contribution to the environmental activists to understand the best way for stimulating companies' environmental information disclosure.

This paper is associated with some limitations. First, there are limited studies to explain a large number of company characteristics. Second, some studies do not state the measurements of the variables explicitly. Third, there is a lack of studies that examined the most important determinants of environmental disclosure. Fourth, the insufficiency of previous studies on some important factors such as the formation of an environmental committee.

Future researchers should conduct more research on environmental disclosure because it is a renewable, developing, and necessary topic. Future research could examine the impact of gender diversity, ownership structure, and media exposure on environmental reporting. In addition, future studies could study environmental issues, such as the existence of an environmental committee for the company and its impact on environmental disclosure. Moreover, future studies could study how environmental reporting is affected by board attributes such as board ownership, board size, and board independence.

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Effect of Using Management Accounting Strategies on Financial Performance in Palestinian Industrial Companies

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Abstract. The aim of this study is to assess the effect of using management accounting strategies on financial performance from Palestinian industrial companies' employees point of view. To collect data from Palestinian industrial companies' employees in the Gaza Strip, a questionnaire was constructed utilizing a descriptive-analytical technique. Multiple regression analysis was used to evaluate the data from 276 respondents. The results showed that the independent factors (i.e. value chain, target costing, just in time, and quality cost) impacted the dependent variable (i.e. financial performance). While this research improves on previous findings, it also provides information that academics and practitioners may use to help people in financial performance.

Keywords: Financial performance · Value chain · Target costing · Just in time · Quality cost · Palestine

1 Introduction

In the highly competitive environment in which international enterprises try to survive since the late twentieth century, many organizations in both the manufacturing and service sectors have faced dramatic changes in their business environment, and many new management methods and manufacturing technologies have emerged. Because of technical advancements and the need to fulfill increasingly discerning client demands, product life cycles have been significantly reduced. Companies have made customer satisfaction a top priority in order to compete successfully in today's highly competitive global economy. They've also modified their management styles, updated their production processes, and invested in new technology. Management accounting systems have been significantly impacted by these changes [1]. As a result, management accounting is becoming increasingly important in the industrial sector as a critical instrument for achieving efficiency and cost control. Management accounting is the use of suitable procedures and ideas to analyze an entity's historical and projected economic data in order to aid management in developing a strategy for realistic economic objectives and making logical decisions in order to achieve them [2].

Management accounting is a field of accounting that aids in the planning, decision-making, control, and analysis of a company's operations. Operational management's

effective use of this instrument will assure profitable development and business optimization. Company owners and managers want financial and economic information that is relevant and tailored to their needs, as well as an analysis of information resources and business outcomes, in order to make business choices. However, financial statements prepared by accountants are difficult to comprehend in terms of economic substance and are insufficient for determining the sources of a company's income and loss, as well as measures to stabilize financial and economic optimization. As a result, it is necessary to develop management accounting business, which entails developing a system for recording financial and non-financial information according to the needs of business management, monitoring sources of income and losses, developing initial reports, analyses, and dashboards on revenues and costs, debts and liabilities, receipts and disbursements, funding needs and sources of business; and continuous management accounting business adaptation [3]. Traditional management accounting systems offer insufficient evidence of technological improvement in response to important advances in manufacturing technology in recent years. Financial reporting was controlled by management accounting. Because of its concentration on the production floor, it was of limited use. As a result, it was necessary to create a management accounting project that focused on strategic accounting rather than management control [4].

Therefore, management accounting has become more and more of an autonomous science, with techniques and instruments geared toward the adoption of good management decisions [5]. To achieve its goals, an organization's strategy explains how it aligns its own skills with market opportunities. One of two major strategies is followed by businesses. Some businesses use a cost-cutting approach. They've been successful and expanded over time by delivering high-quality products or services at reasonable rates while keeping expenses under control. Other businesses use a strategy of product differentiation. Managers must choose between these tactics on a regular basis. Management accountants assist managers in the formulation of strategy by giving information on sources of competitive advantage, such as their company's cost, productivity, or efficiency edge over rivals [6].

Overall, the explanatory literature suggests that contextual variables (e.g., the organization's strategic goals), Management Accounting's own technical features (Management Accounting design), individual variables (e.g., individuals' responses to Management Accounting practices), and interactions influence Management Accounting's impact on financial performance. However, the exact factors and interactions involved have not been well conceptualized and empirically studied thus far [7]. Value chain, target cost, just in time, and quality cost are some of the strategic initiatives methodologies. In Palestine, there were 20,710 industrial companies in 2019 (15,899 in the West Bank, 4,811 in the Gaza Strip), employing 121,763 workers (95,722 in the West Bank, 26,041 in the Gaza Strip) [8]. As a result, the aim of this paper is to look at the link between the independent variables (value chain, target costing, Just in time, and quality cost), and the dependent variable (financial performance) in the Palestinian industrial sector.

The remainder of the paper is divided into the following sections: The research model and hypotheses are developed in Sect. 2. Section 3 of the paper explains the methodology. The findings of the study are presented in Sect. 4, and the discussion of the findings, limitations, and future research is concluded in Sect. 5.

2 Theoretical Background

2.1 Financial Performance

Financial performance is a cause for a company's success, and its preservation is a sign of effective resource management and an essential and crucial prerequisite for the company's survival [9]. Financial performance may be defined in a variety of ways, including comparing the outcomes of a company's efforts over time to an industry index. Financial performance is a broad measure of a company's overall financial status over a period of time that may be used to compare similar firms in the same sector or to compare the company's success to past years [10].

The financial performance of a company reveals whether or not its strategy adds to increased profits. The company's good financial performance, according to Kaplan [11] (2009), may be enhanced in two ways: growth strategy and productivity strategy. Increasing productivity through innovation, product innovation, and process innovation allows businesses to prosper. Productivity may be improved by: (1) lowering direct and indirect expenses or making better use of financial and physical assets, and (2) lowering the amount of working capital and fixed capital required to support particular levels of operation. When firms establish a balance between growth and productivity, the financial linkage approach emerges. To measure financial performance, three key indicators are used: (1) revenue growth, (2) cost reductions or cost savings and greater asset utilization, and (3) enhanced customer value [12].

2.2 Value Chain

Dr. Michael E. Porter, a professor of business administration at Harvard Business School, proposed the value chain analysis technique in his 1985 book "Competitive Advantage: Creating and Sustaining Superior Performance." Porter used the term "Value Chain" in this book, emphasizing that an enterprise's competitive competence is dependent not only on the optimization of sub functions, but also on the effective interlinking of chain members. It's a tool for confirming and analyzing a company's competitive edge. An organization has several resources, capabilities, and competitive advantages, such as technology advantage, human resources advantage, managerial advantage, and inventive edge, among others. If we look at a business as a whole and are unable to identify these competitive advantages, we must resolve the enterprise activity and validate the competitive advantages of companies by looking at the individual activities and their relationships [13]. The value chain is the series of business operations that add customer value to products. There are six key business functions: research and development, design, manufacturing, marketing, distribution, and customer service. Johnson and Scholes [14] explain that there are five primary and four secondary activities within the value chain [6], while Johnson and Scholes [14] explain that there are five primary and four secondary activities within the value chain. The key actions are [6]:

a. Inbound logistics refers to the actions of receiving, storing, and distributing the components of a product or service.

b. Operations: machining, packing, assembling, testing, and so on, turn these diverse inputs into the finished product or service.
c. Outbound logistics: tasks including the collection, storage, and distribution of goods to customers. If the goods are tangible, the operations will include warehousing, material handling, transportation, and so forth. In the case of services, the corporation may be more concerned with making arrangements to get the consumer to the service site.
d. Marketing and sales; These operations are involved with making consumers aware of the product or service and allowing them to purchase it. Advertising, sales administration, and selling are examples of specialized activities.
e. Service; Installation, repair, training, and other actions that improve or sustain the value of a product or service.

Each category of primary activities is related to support activities, according to Johnson and Scholes [14]. These support activities aid in the improvement and enhancement of the primary activities' efficacy and efficiency. The main activities may be broken down into four categories:

a. Procurement: This is the process of acquiring the various resource inputs for the primary operations.
b. Technology development; Every activity that adds value has a "technology," even if it's simply a simple know-how at times. The main technology may be directly related to the product, operations, or a particular resource.
c. Human resource management is a critical domain that encompasses all key tasks. Recruiting, managing, training, and rewarding employees are all part of these operations.
d. Infrastructure: This is the planning, financing, quality control, and information management system that is critical to an organization's principal activity performance. The infrastructure of an organization is made up of the structure and procedures that keep its culture alive [15].

As a result, the following hypothesis can be considered.
H1: Value chain has statistically significant influence on financial performance from Palestinian industrial companies' employees point of view.

2.3 Target Costing

The target costing approach is presented as a strategic profit and cost management technique that supports cost planning in the product design process. It uses a variety of strategies to cut costs during the design, research, and development phases, while also meeting consumer needs for speed, quality, and dependability. It also aims to lower a product's life-cycle cost. The basis of the target costing approach, target cost, is computed based on the sale price in order to achieve a target market share and reflects market-based cost. In contrast to typical "cost plus," the target cost is a function of the sale price and profit rather than costs [16]. As a consequence, the following hypothesis is proposed:
H2: Target costing has statistically significant influence on financial performance from Palestinian industrial companies' employees point of view.

2.4 Just-in-Time Manufacturing

Just in time employs a precise inventory management system, as well as an effective information system, to ensure complete coordination between productivity and suppliers on the one hand, and suppliers on the other. Furthermore, cooperation is necessary for shipping goods in accordance with suitable specifications, amounts, and timeliness, all while maintaining a stable corporate environment [4].

Just in time manufacturing initially referred to the manufacture of items in a timely, high-quality, and sufficient quantity to fulfill consumer demand. While it has now come to signify creating with the least amount of waste possible. In its broadest definition, "waste" encompasses both time and resources, as well as materials. Just in time consists of the following elements [17]:

a. Continuous improvement entails addressing fundamental issues such as anything that does not add value to the product, devising systems to identify problems, striving for simplicity - simpler systems may be easier to understand, manage, and less likely to go wrong, a product-oriented layout - results in less time spent moving materials and parts, quality control at source - each worker is responsible for the quality of their own output, and quality control at the source. Preventative maintenance, also known as total productive maintenance, entails ensuring that machinery and equipment is in excellent working order when it is needed, as well as constantly improving it.
b. Waste elimination included waste from overproduction, waiting time waste, transportation waste, processing waste, inventory waste, motion waste, and product defect waste.
c. Good housekeeping – cleanliness and organization in the workplace.
d. Reduced setup time provides for greater flexibility and smaller quantities. One item is the ideal batch size. Multi-process handling - a multi-skilled staff is more productive, flexible, and satisfied with their work.
e. Leveled/mixed production - to ensure that items move smoothly through the facility.

Based on the foregoing, we propose the following hypothesis:

H3: Just in time has statistically significant influence on financial performance from Palestinian industrial companies' employees point of view.

2.5 Quality Cost

Different academics have defined quality in a number of ways. Some of the definitions provided are listed below. Quality is the sum of a product's or service's traits and characteristics that influence its ability to meet certain demands [18]. Quality also refers to the absence of flaws, restrictions, and items that do not offer value to consumers in goods, services, processes, and relationships [19]. The several definitions above are each distinctive in their own way, yet they all point to the same end goal: customer satisfaction. In other words, it is acceptable to conclude that there is no quality when there is no customer satisfaction [20].

Quality cost is one of the most essential and current approaches for cost reduction, quality improvement, and a positive influence on performance [21]. The total costs of

quality-related activities are defined as the overall costs of quality-related activities [18]. Quality costs are divided into four categories: prevention costs, appraisal costs, internal failure costs, and external failure costs [20]. As a consequence, the following hypothesis is proposed:

H4: Quality cost has statistically significant influence on financial performance from Palestinian industrial companies' employees point of view.

Figure 1 illustrates the study's conceptual framework. In this model, the dependent variable (i.e. financial performance) is linked to the independent factors (i.e. value chain, target costing, just in time, and quality cost).
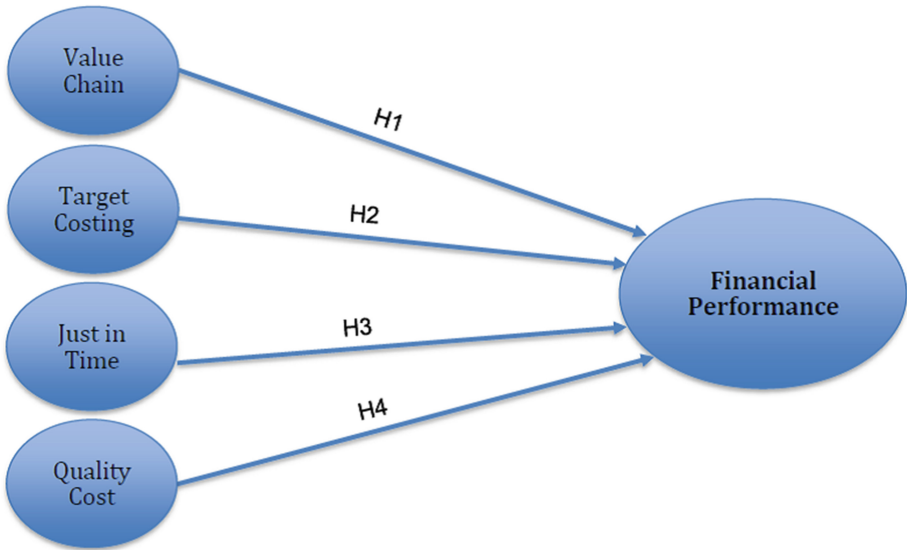
Fig. 1. The research framework

3   Methodology

3.1   Participants

As shown in Table 1, 276 respondents completed and returned the questionnaire. The findings of the demographic variables were displayed in the table.

Table 1. Profile of respondents ($n = 276$)

Variables	Groupings	No. of respondents	%
Age	Less than 25	18	6.4
	26–35	51	18.6
	36–45	134	48.7
	46–55	62	22.4
	More than 55	11	3.9
Years of experience	Less than 5	29	10.4
	6–10	38	13.6
	11–20	157	57.2
	21–30	46	16.8
	More than 30	6	2.0
Education level	Diploma	44	15.9
	Bachelor	154	55.8
	Master	72	26.1
	PhD	6	2.2

3.2   Procedures

The descriptive technique was used to characterize the existing situation and react to important issues about the effect of using management accounting strategies on financial performance in Palestinian industrial companies. As a result, the survey, which was conducted via a Google form, was the primary method of gathering data for this study. The Google form's URL was widely disseminated on social media (Facebook, WhatsApp, and emails). The original questionnaire was accurately translated into Arabic to meet with local language limits. It was then assessed and pilot tested by three proficient Arabic speakers for accuracy. For statistical analysis, IBM SPSS software version 21 was employed.

3.3   Measures

A 5-point Likert scale was used in the survey, with 1 denoting strong disagreement, 2 denoting disagreement, 3 denoting no opinion/neutral, 4 denoting agreement, and 5 denoting strong agreement. The survey was divided into four components. In the first section, value chain is assessed using five questions based on Johnson and Scholes [14], and Horngren et al. [6]. Aksoylu and Aykan [16] investigated target costing and developed five items based on their findings. In the third section, five questions based on Al-Khadash and Feridun [4], and Podolsky and Cheng [17] are used to examine Just in time. In the fourth section, quality cost is evaluated using five questions based on Lari [19], James and Luke [20], and Abulaila and Abdulrahman [21]. In the last phase, five questions based on Saymeh [9], and AlAntari [10] are used to assess Financial performance.

4   Results

4.1   Factor Analysis

The KMO and Bartlett's tests were used to check if the factor analysis was appropriate for the study. The results of the reliability test should be more than 0.7. The Bartlett's Sphericity test scores should generally be less than 0.05. The KMO value of 0.746 is higher than the acceptable threshold of 0.000, indicating that this analysis is sufficient for the study.

To construct the factor score coefficient matrix formed by principal components analysis [22–25], one principle factor is rotated using the varimax normalization, as

Table 2. Reliability and factor loading of the constructs.

Construct	Item	MV	SD	FL	Cronbach's α
Value chain	1	3.62	.852	.746	.757
	2	3.34	.846	.753	
	3	3.28	.976	.772	
	4	3.57	.934	.781	
	5	3.24	.846	.727	
Target costing	1	3.36	.834	.759	.752
	2	3.51	.863	.763	
	3	3.67	.873	.776	
	4	3.43	.890	.758	
	5	3.59	.803	.624	
Just in time	1	3.56	.924	.734	.748
	2	3.47	.864	.728	
	3	3.27	.763	.754	
	4	3.46	.842	.761	
	5	3.18	.832	.728	
Quality cost	1	3.64	.982	.764	.779
	2	3.53	.927	.782	
	3	3.43	.984	.765	
	4	3.52	.921	.774	
	5	3.49	.843	.774	
Financial performance	1	3.45	.734	.764	.764
	2	3.75	.869	.753	
	3	3.58	.947	.728	
	4	3.37	.761	.793	
	5	3.61	.935	.786	

shown in Table 2. There are 25 items in the factor. The lowest loading threshold for factor loadings on various scales, according to the research, is 0.30 [26–30]. Table 2 reveals that all of the loadings are more than 0.30, implying that the scales' construct validity has been preserved.

4.2   Hypotheses Testing

The relationship between the independent components (i.e. value chain, target costing, just in time, and quality cost) and the dependent variable (i.e. financial performance) was investigated using multiple regression analysis. The researchers wanted to explore how independent factors affected financial performance in the multiple regression analysis.

Independent variables explain for 48.2% of the variation in financial performance (adjusted R2 = 0. 482), according to Table 3. The model's quality was confirmed since the F value was significant at 0.000. Table 3 shows that value chain (t = 2.864, p 0.000), target costing (t = 2.653, p .000), just in time (t = 2.524, p .000), and quality cost (t = 3.204, p 0.000) were all positively related to financial performance. As a result, the data demonstrated that the analysis significantly supported H1, H2, H3, and H4, correspondingly.

Table 3. Results of multiple regression analysis.

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	2.846	.426		3.452	.000
	Value chain	.261	.136	.175	2.864	.000
	Target costing	.276	.145	.159	2.653	.000
	Just in time	.244	.134	.164	2.524	.000
	Quality cost	.314	.168	.216	3.204	.000

Notes: Dependent variable: Financial performance; adjusted R2 = .482, F = 115.376, and sig. = 0.000

5   Discussion

5.1   Discussion of Findings

The relationship between the independent variables (i.e. value chain, target costing, just in time, and quality cost) and the dependent variable (i.e. financial performance) is investigated in this study. The findings show that value chain has statistically significant influence on financial performance from Palestinian industrial companies' employees point of view. This is consistent with previous studies, which have shown that the term "value chain" is used to emphasize that an enterprise's competitive competency is based

not just on sub-function optimization, but also on the successful interlinking of chain members. It's a tool for verifying and assessing a firm's competitive advantage. Technology advantage, human resources advantage, managerial advantage, and innovative edge are only a few of the resources, capabilities, and competitive advantages that a firm possesses. If we look at a company as a whole and can't find these competitive advantages, we need to resolve the enterprise activity and confirm the competitive advantages of enterprises by looking at specific activities and their linkages [13]. The value chain is a set of commercial procedures that provide value to items for customers.

The findings also revealed a link between target costing and financial performance from Palestinian industrial companies' employees point of view. This is in line with prior research that indicate that the target costing strategy is described as a strategic profit and cost management technique that aids in product cost planning. It employs a number of cost-cutting measures during the design, research, and development phases, all while fulfilling consumer demands for speed, quality, and dependability [16].

Additionally, the data demonstrated a link between just in time and financial performance from Palestinian industrial companies' employees point of view. This is consistent with prior studies that show that just-in-time manufacturing referred to the production of items in a timely, high-quality, and sufficient quantity to meet consumer demand. While it has since come to mean creating with as little waste as possible. "Waste" involves both time and resources, as well as materials, in its fullest sense [4, 17].

Furthermore, the findings identified a correlation between quality cost and financial performance from Palestinian industrial companies' employees point of view. This is in line with previous research findings that revealed that one of the most important and current ways for cost reduction, quality improvement, and a favorable impact on performance is quality cost [21]. The total costs of quality-related activities are defined as the entire costs of quality-related activities plus the costs of quality-related activities plus the costs of quality-related activities plus the costs of quality-related activities [18]. Prevention costs, appraisal costs, internal failure costs, and external failure costs are the four types of quality costs [20].

Based on the above, value chain, target costing, just-in-time, and quality cost are predicted to have a favorable impact on financial performance. As previously stated, financial performance is a factor in a company's success. It is a sign of good resource management and a necessary condition for survival [9]. Financial performance can be measured in a number of ways, including by comparing a company's efforts over time to an industry index. Financial performance is a broad measure of a company's overall financial condition over time that can be used to compare similar companies in the same industry or to compare the company's success to previous years [10].

5.2 Limitations and Further Research

The study's empirical findings included contextual and application restrictions. Based on responses from Palestinian industrial companies' employees in the Gaza Strip, we've made certain assumptions. As a result, broad generalizations about Palestinian industrial companies' employees are impossible to make. The findings are solely applicable to the Gaza Strip region because the study only looked at Palestinian industrial companies' employees in the Gaza Strip. The findings may be valuable for emerging economies

with similar cultural roots, such as Palestine, but they may not be relevant to regions with different cultural characteristics.

Future studies should re-examine the model to include Palestinian industrial companies' employees in the West Bank. Furthermore, the model may include moderating and/or mediating elements to enhance comprehension of the current situation's links and dynamics.

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Determinants of Corporate Social Responsibility Disclosures: Evidence from Insurance Companies of GCC Countries

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Abstract. This research investigates the determinants of corporate social responsibility (CSR) disclosures of insurance companies listed in the Gulf Cooperation Council (GCC) countries based on selected indicators from the Global Reporting Initiative (GRI). These determinants are classified into three categories such as financial characteristics (ROA), corporate governance characteristics (the board size, women on the board) and firm-specific characteristics (internationalization, audit firm size, and company size). The study sample consists of 84 out of 89 insurance listed companies for five years from 2016 to 2020. The data was collected from the Thomson Reuters database and annual reports. Regression analysis and correlation matrix were used to identify the factors that influence the extent of CSR disclosures. The results indicate that financial characteristics, corporate governance characteristics (the board size) and firm-specific characteristics were positively correlated with CSR disclosures. On the other hand, corporate governance characteristics (presence of female board members) negatively correlated with CSR disclosures. The findings are important for shareholders, regulators, management, and other stakeholders.

Keywords: Corporate social responsibility disclosures · Financial characteristics · Corporate governance characteristics · Firm-specific characteristics

1   Introduction

Corporate social responsibility (CSR) has become a growing global concern during the last five decades. This concern arises mainly from the risk presented by the negative consequences of economic expansion, such as environmental and social issues. The study suggests that several financial, corporate governance, and firm-specific characteristics determine CSR disclosure. This investigation attempts to discover the factors that encourage corporations to disclose CSR information and contribute to a better understanding of the differences in CSR disclosures among companies. It shows evidence from GCC insurance companies, which is an interesting case because corporations are not obligated to publish CSR information in these countries. Therefore, providing CSR

data is entirely voluntary and unrestricted by law. Now there is some movement of sustainability reporting across GCC countries from last couple of years [5]. As Zaman and Farooq [57] found, there was an increase in CSR disclosures rates throughout the time, as it increased from 25% in 2013 to 40% in 2017, while a large portion of listed GCC firms (60%) failed to issue a report. According to KPMG, 90% of North American corporations would have generated sustainability reports by 2019, followed by 84% in the Asia Pacific, 77% in Europe, and 59% in the Middle East and Africa [51].

There are five CSR disclosure theories which explains, why companies contain CSR disclosures in their annual reports and websites. Firstly, the *legitimacy theory* argues that a company needs to disclose detailed information about its contributions to society to conduct its activities in the community [16, 50]. It also indicates that a company's legitimacy can be enhanced by sharing environmental and social issues [16]. Legitimacy theory is based on the concept that an organization and the society in which it operates have a social contract [41]. Secondly, the *agency cost theory* shows the importance of voluntary disclosures that reduce agency costs by using them as a tool to reduce conflicts between managers and shareholders, as well as its creditors [32]. Moreover, firms employ the disclosure of various information connected to a company's performance to reduce these asymmetries. Thirdly, *signaling theory*, successful organizations are more likely to provide information than distressed businesses [46]. When information is available, managers will share both positive and negative information since non-disclosure will be seen negatively by stakeholders [25]. Fourthly, the *political economy theory* has been proposed as a reasonable explanation for business social disclosure activities in accounting literature. This theory indicates that companies with high profits attract the attention of politicians; thus, they demand a portion of the profits to benefit from them in society, which tends companies to show less income by using different accounting methods and procedures in addition to the disclosures of managers to avoid implicit and explicit taxes [55]. Lastly, the *stakeholder theory* states that companies should care for their customers, suppliers, employees, investors, communities, and others interested in the organization by providing information satisfying all stakeholders' needs, not just stockholders [22]. The corporation should strive to create a balance between the interests of its various stakeholders, and a sustainability report could be a valuable instrument for meeting those needs and reducing information asymmetry.

Because of building economic visions in the GCC countries and the absence of legislation for corporate social responsibility disclosures in these countries, this paper aims to fill the gap of previous research in this field that excluded financial sectors. Here the study focuses on listed insurance companies in GCC countries to identify the determinants influencing the extent of corporate social responsibility disclosure in order to spread awareness among stakeholders and to use the results of the research to consider whether the GCC countries need to establish legislation for CSR disclosures in the financial reports. This investigation studies the impact of a company's financial characteristics, corporate governance characteristics, firm-specific characteristics on CSR disclosures.

Through the few studies that attracted the countries of the Cooperation Council, most of which focused on the non-financial sectors, it is worth noting that the rates of disclosure of corporate social responsibility are still low compared to developed countries. Unlike

the previous investigations in this field that excludes financial sectors, and due to the absence of legislation regulating corporate social responsibility disclosures in developing countries, this study aims to determine the factors that affect the extent of disclosure of corporate social responsibility by focusing on listed insurance companies in the Gulf Cooperation Council countries.

2   Research Questions

1. Are the selected determinants of CSR disclosures (profitability, board size, women on the board, company's size, Internationalization, and audit firm size) influence the level of CSR disclosures in GCC insurance companies?
2. What is the relationship between the selected determinants (profitability, board size, women on the board, company's size, internationalization, and audit firm size)and the extent of CSR disclosures in GCC insurance firms?
3. What are the most disclosing items among GCC countries related to social responsibility disclosures?

3   Research Objectives

- To discover whether selected determinants (profitability, board size, women on the board, company's size, Internationalization, and audit firm size) affect CSR disclosures in GCC insurance companies.
- To explore the relationship between the company's profitability, the number of board members and the role of women (gender diversity), the company's size, Internationalization, and the audit firm size with the amount of CSR disclosures.
- To determine the most disclosing items among GCC countries related to social responsibility disclosures.

4   Scope of Study

To measure the impact of financial characteristics, corporate governance characteristics, and firm-specific characteristics, expressed in profitability, the board size, women on the board, company size, internationalization, and audit firm size, on the level of CSR disclosures. This research depends on quantitative data from secondary sources such as annual reports to give more understandable and accurate information about the factors that would influence the practices of corporate social responsibility disclosure. A sample of 84 insurance companies listed on the stock exchanges of the GCC countries was relied upon as they are the most active companies and have the largest market capitalization. The sample contains 29 companies in Saudi Arabia, 8 companies in Kuwait, 5 companies in Qatar, 7 companies in Oman, 5 companies in Bahrain, 30 companies in the UAE, distributed as follows: 17 companies on the Abu Dhabi Securities Exchange and 12 companies on the Dubai Financial Market. The study relies on the past five years (from 2016 to 2020) to give more reliable results since most past papers only focus on one year.

5 Literature Review

Since the mid-20th century, CSR disclosure has attracted academic attention and generated considerable literature [15, 18, 20]. The second section of the study includes findings of previous investigations that argued the importance of corporate social responsibility practices and the extent to which users are interested in them, in addition to addressing the results of some research that targeted the countries of the Gulf Cooperation Council. In recent years, CSR disclosures have become one of the essential components of annual reports due to the increased awareness of individuals about the negative consequences caused by companies at the societal and environmental levels. However, compulsory CSR disclosure changes company behavior and builds positive externalities at the expense of stockholders [13]. At the same time, some researchers believe that those investors focus on short-term information to make their decisions and ignore CSR disclosures as medium and long-term information [17]. Especially in challenging economic conditions, the participants oppose allocating limited resources to non-profit social associations [4]. Nevertheless, [8] emphasized that investors value this kind of report positively. Despite CSR promotion, there is great debate about this issue due to the considerable expense and uncertain benefits [38]. While [49] found no noticeable impact on firms' profitability when annual reports include this type of disclosure, many researchers have proven the opposite. As pointed out by [36], CSR disclosure significantly improves the market value of companies, and the importance of which varies according to the nature and extent of the information disclosed [48]. Furthermore, the importance of social responsibility disclosures may include reducing stock price fluctuations and improving stock liquidity [56]. Finally, the results of previous studies indicated that social responsibility disclosures have a significant role in building a good reputation for businesses rather than allocating excess resources [29, 35]. Whatever the position of the opponents and supporters and their arguments, CSR reports remain the primary tool used by all institutions to communicate their economic, social and environmental performance [11].

Khasharmeh and Suwaidan [34] explored the influence of business characteristics in examining variation between the sampled companies in this form of disclosure in annual reports by manufacturing listed companies in the Gulf Cooperation Council (GCC) countries. According to the findings, sampled companies disclosed only 26% of the 45 items included in the indices on average, with only eight companies achieving disclosure scores of 40% or higher. Moreover, the UAE outperformed other GCC countries in CSR disclosure, with firm size and audit firms identified as critical drivers in describing the variation in CSR disclosure.

In addition to the role of factors that will be raised, additional issues might affect the level of disclosures. For example, countries with strong institutions at the national level are working to encourage more disclosures of corporate social responsibility [12], and private companies are less likely to issue social responsibility disclosures than public sector companies [14]. At the same time, [7, 10] provided evidence that the state has a prominent role in disclosing the practices of social responsibility, as well as through the political system such as corruption and the labor system like unemployment rates in the country and the cultural system.

According to the legitimacy theory, organizations should present information about their practices that serve the society and the environment to maintain their profitability and presence in the community. However, many studies have measured the impact of profitability on the level of corporate social responsibility disclosures. At the same time, several papers found that profitability is not considered a determinant of CSR disclosures [27, 52, 54], some studies have found a positive relationship between profitability and CSR disclosures [10, 24, 26, 28, 45]. In contrast, [30] clarified an inverse relationship between the level of disclosures and firms' profitability, as the less profitable companies disclose more.

Many papers focus on the impact of corporate governance on CSR reports. These studies have suggested many factors that reflect corporate governance, such as the size of the board [21, 37], the women on the board [6, 31, 53], the board's independence [9, 19], the educational background of board members [33, 44], and the presence of foreign members on the board [23]. Since this study focuses on CSR determinants in general, the board's size and women on the board were chosen to reflect corporate governance.

The issue of the ideal board size is considered one of the most significant issues that concern companies, as some believe that the size of the board positively affects voluntary CSR disclosures [1, 3, 39, 58]. On the contrary, other researchers found that the board size does not affect companies' level of social responsibility disclosures [40, 42, 47]. However, some studies showed that the more board members, the negative impact on corporate social responsibility disclosures [43].

6 Research Hypotheses

H_{01}: There is no significant impact of firm characteristics (profitability, board size, women on the board, company's size, Internationalization, and audit firm size) on CSR disclosures.

H_{02}: There is no relationship between companies' profitability and CSR disclosures.

H_{03}: There is no relationship between the number of members in the Board of Directors and the CSR disclosures.

H_{04}: There is no relationship between the existence of female members on the board and the CSR disclosures.

H_{05}: There is no relationship between the Company Size and CSR disclosures.

H_{06}: There is no relationship between internationalization and CSR disclosures.

H_{07}: There is no relationship between audit firm size and CSR disclosures.

7   Research Methodology

7.1   Research Design

This research used a quantitative approach, statistical analysis, tables, and graphs were commonly used. The evaluation and assessment of the CSR disclosures were according to the annual reports, corporate governance reports, and sustainability reports, if any.

7.2   Sample Construction and Data Collection

In order to create a homogeneous dataset, this study emphasizes companies with identical political and societal backgrounds, and therefore only the insurance sector was selected. There are 89 insurance companies listed on the stock exchanges of the GCC countries (the most active companies and have the largest market capitalization). Due to some companies' lack of annual reports, 84 firms were relied upon of all the population. The sample contains 29 companies in Saudi Arabia, eight companies in Kuwait, five companies in Qatar, seven companies in Oman, five companies in Bahrain, 30 companies in the UAE, distributed as follows: 17 companies on the Abu Dhabi Securities Exchange and 12 companies on the Dubai Financial Market. Table 1 consists the indicators used to measure the extent of CSR disclosures in GCC as follows:

Table 1. The indicators used to measure the extent of CSR disclosures

1	Environmental indicators (4)	Reduction of energy consumption
		Pollution reduction
		Recycling
		Water consumption
2	Social indicators (6)	Employee training and education
		Financial supports and donations
		Customer relations and support
		worker health and safety
		Gender diversity
		Engagement in social activities
3	Governance indicators (3)	Board members
		Audit committee
		External auditor

After the dependent and independent variables have been identified, the model below will be hypothesized and tested:

$$CSRD = \beta_0 + \beta_1 PROFIT + \beta_2 BOSIZE + \beta_3 WOMEN + \beta_4 COSIZE + \beta_5 INTERN + \beta_6 AUDIT + \varepsilon$$

where:

β_0 is a constant;

CSRD represents the corporate social responsibility disclosures

β_1 PROFIT represents the profitability;

$\beta2$ BOSIZE represents the board size;

β_3WOMEN represents the women ontheboard;

β_4 COSIZE represents the company size;

β_5 INTERN represents the Internationalization;

β_6 AUDIT represents the audit firm size, and

ε is an error term

The above model includes six independent variables, which are: Profitability (PROFIT), Board Size (BOSIZE), Women on the Board (WOMEN), Company Size (COSIZE), Internationalization (INTERN), and Audit Firm Size (AUDIT). The description and measurements of all the variables mentioned previously are summarized in the following Table 2.

Table 2. The independent variables and dependent variable description and measurement

Variables' symbol	Variable name	Description and measurement
Dependent variable		
CSRD	Corporate social responsibility disclosures	Corporate Social Responsibility Disclosure Index (based on the number of items) Dummy variable: Value 1 if the information on an item is disclosed, otherwise value 0
Independent variables		
PROFIT	Profitability	Return on Assets (ROA): Net Income/Total Assets
BOSIZE	Board size	Total number of directors on a board [2]
WOMEN	Women on the board	Dummy variable: Value 1 if there are one or more women on the board, otherwise value 0
COSIZE	Company size	Natural logarithm of total assets
INTERN	Internationalization	Dummy variable: Value 1 if the company has branches outside the GCC countries, otherwise value 0
AUDIT	Audit firm size	Dummy variable: Value 1 if the company is audited by one of the big four accounting firms, otherwise value 0

7.3   Analytical Tools and Techniques

Excel program was used to assess and analyze the collected data to examine the relationship between the company's financial determinants, corporate governance determinants, firm-specific determinants, and CSR disclosures. There are two methods of analysis used in this study: regression and correlation analysis.

8   Data Analysis and Interpretation

This section constitutes the first step of analyzing the collected data, where regression analysis and correlation matrix were used to reach precise results that accept or reject the hypotheses proposed in the study, then confirm some results by summarizing them in Tables 3, 4, 5, 6 and 7.

Table 3. Regression statistics

Regression statistics	
Multiple R	0.398
R square	0.158
Adjusted R square	0.092
Standard error	2.300
Observations	84

Table 4. ANOVA

ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	76.445	12.741	2.409	0.035
Residual	77	407.236	5.289		
Total	83	483.681			

Table 5 illustrates the results of the analysis of the correlation matrix between the variables in this research, which indicate that the level of corporate social responsibility disclosures is positively correlated with companies' profitability, the board size, company's size, internationalization, and audit firm size, while negatively correlates with the presence of women in the board of directors. The Table 7 shows the result of testing the hypotheses.

Table 5. Correlation matrix

	PROFIT	*BOSIZE*	*WOMEN*	*COSIZE*	*INTERN*	*AUDIT*	*CSRD*
PROFIT	1						
BOSIZE	0.070317872	1					
WOMEN	−0.257427321	−0.137514055	1				
COSIZE	0.185390329	0.148028265	−0.09959	1			
INTERN	0.002956916	0.188650586	−0.05928	0.103052	1		
AUDIT	0.37189582	0.217738279	0.012855	0.347773	0.167494	1	
CSRD	0.009242334	0.330223367	−0.06931	0.141817	0.263171	0.109611	1

Table 6. Regression analysis

	Coefficients	*Standard error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	−3.326	5.115	−0.650	0.517	−13.511	6.859	−13.511	6.859
PROFIT	−1.742	6.785	−0.257	0.798	−15.252	11.769	−15.252	11.769
BOSIZE	0.440	0.173	2.550	0.013	0.096	0.784	0.096	0.784
WOMEN	−0.030	0.181	−0.164	0.870	−0.391	0.331	−0.391	0.331
COSIZE	0.459	0.612	0.750	0.456	−0.760	1.678	−0.760	1.678
INTERN	0.198	0.106	1.864	0.066	−0.014	0.409	−0.014	0.409
AUDIT	−0.004	0.156	−0.024	0.981	−0.315	0.307	−0.315	0.307

The Table 6 above shows the regression analysis results, where 95% was relied upon as the confidence level. However, the R squared of 15.8% (approximately 16%) representing fluctuation in the previously suggested determinants, or the independent variables (profitability, board size, women on the board, company's size, Internationalization, and audit firm size) explains the variation in the dependent variable of CSR disclosures practices of the 84 insurance companies sampled in the study. In addition, the Significance F of 0.035 is less than the significance level; therefore, this indicates that the variables investigated in this paper were well fitted for the model expressed and that jointly measured all the determinants have a significant impact on the extent of CSR disclosures in GCC insurance firms.

Table 7. Testing of hypotheses

No.	Hypotheses	Accept/Reject[*]
H_{01}	There is no significant impact of firm characteristics (profitability, board size, women on the board, company's size, Internationalization, and audit firm size) on CSR disclosures	Reject
H_{02}	There is no relationship between companies' profitability and CSR disclosures	Reject
H_{03}	There is no relationship between the number of members in the Board of Directors and the CSR disclosures	Reject
H_{04}	There is no relationship between the existence of female members on the board and the CSR disclosures	Reject
H_{05}	There is no relationship between the size of companies and CSR disclosures	Reject
H_{06}	There is no relationship between internationalization and CSR disclosures	Reject
H_{07}	There is no relationship between audit firm size and CSR disclosures	Reject

[*] *(Based on P-Value* Table 6*)*

9   Findings and Discussion

Many years ago, economists were trying to figure out why corporations voluntarily share information about environmental and social issues. Five theories were used to support the benefit of disclosing corporate social responsibility practices in this study.

This investigation explored the determinants of corporate social responsibility disclosure practices in insurance companies listed in the Gulf Cooperation Council countries. The result of the regression, it was found that the selected independent variables impact the practices of corporate social responsibility disclosures. However, based on the value of R square, which is approximately 16%, the independent variables weakly explain the variation in the extent of corporate social responsibility disclosures. Therefore, the quantity of corporate social responsibility disclosures that companies publish in their annual reports in the GCC countries should be considered by decision-makers, especially since the results show the inconsistency of insurance companies' profitability during the past five years. If these firms want to survive and gain their legitimacy in the market, they must use CSR disclosures as a tool to gain community support.

Some companies have social responsibility practices towards individuals in society, but they do not disclose them in their annual reports, making them invisible to stakeholders. In GCC countries, many companies support women and consider them an essential part of their success. However, a tiny percentage of the selected companies revealed the presence of gender diversity and the number of male employees versus female employees, which confirms the accountant's role in making information visible to the community, and this is not limited only to gender diversity, but includes donations, financial support, social participation, and other practices, as when the accountant puts this information and support them with numbers will be recognized by external users.

However, if it does not exist in the annual reports, it will not be visible to investors and other stakeholders.

The exceptional result supported by the paper is that surrounding circumstances guide the level of voluntary disclosures during the financial year. For example, some companies did not share any information about sustainability practices that support the safety and health of the employees during the previous years, except for 2020, when the Coronavirus spread throughout the world, these companies are now accurately disclosing the procedures they follow for the safety of their employees, such as working from home, social distancing, distributing sterilizers and face masks, contracting with cleaning and sterilization companies, and supporting employees infected with the Coronavirus psychologically.

The current research can be considered a starting point for future studies related to the determinants of CSR disclosures targeting the insurance sector, especially at the local level. However, the research work may be subject to many limitations. First, the scope of this study is limited to 84 insurance companies listed on the stock exchanges of the GCC countries. However, the study could not collect information on all the 89 listed insurance companies due to the lack of sufficient information and disclosures. Second, it cannot be generalized due to countries' different environments and cultures. Third, this study discusses only six independent variables to represent the financial characteristics, corporate governance characteristics, and firm-specific characteristics, while many variables may significantly impact CSR disclosures.

To bridge the gap in the level of voluntary disclosures between developed countries and the GCC countries, the research suggests establishing unified laws that specify the minimum items of CSR disclosures, in addition to using the tax system as a tool to encourage companies to activate these practices and make them part of the primary activities that they carry out, such as exempting companies from a percentage income taxes (if they are imposed in the future in the GCC countries), as the main reason companies disclose CSR information may be to reduce the potential impact of different laws, increased taxes, and other activities that may negatively affect the company's value.

Furthermore, the study highlights the significance of repeating these analyzes on various sectors in the GCC countries and other countries in the Middle East to find out the reasons for the gap in the voluntary disclosure between these countries and developed countries, and it will be interesting to include the determinants that the research did not deal with and concentrate on the impact of the gulf people culture on CSR disclosures.

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The Impact of the Code of Professional Conduct for Internal Auditors on the Effectiveness of Internal Auditing Units in Banks Listed on the Palestine Stock Exchange During COVID-19 Pandemic

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Abstract. The study aimed to identify the impact of the Code of Professional Conduct for Internal Auditors on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, The sample of the study consisted of 50 employees from the internal audit department employees in the banks listed in the Palestine Stock Exchange, randomly selected, and a descriptive approach has been implemented to achieve the study's objectives. In addition, a questionnaire was designed to fit the purpose of the study, and after implementation and data analysis, the results indicated that there is a high impact of the attributes (integrity, objectivity, confidentiality, and competency) on the effectiveness of internal auditing units. According to a mean of 4.07 and an overall standard deviation of 0.41, Consequently, the study recommended that it is necessary to strengthen the ethical environment and its principles in the work of internal audit units in banks because of their great impact on achieving goals during crises, especially at the COVID-19 pandemic.

Keywords: Internal audit unit · Banks listed on the Palestine Stock Exchange · Code of Professional Conduct · COVID-19 pandemic

1 Introduction

Internal audit plays a vital role in improving operational performance and identifying the main risk factors by identifying current and future strengths and weaknesses and finding possible opportunities to improve or develop them. The role of the internal auditor is to ensure that the risk management, governance, and internal control processes operate effectively and implement all the objectives, policies, procedures, and plans approved by senior management in their annual plans, identify potential threats that may affect their profitability, and provide the necessary suggestions to mitigate those risks and threats and identify areas that can be improved in them [1].

Therefore, we care about all institutions of internal audit units, including banks, by laying down several pillars for them, the most important of which are the ethical principles and rules that are necessary for the internal audit activity, considering that the internal audit profession is based mainly on confidence in its objective assertion regarding risk management, control and governance, and breaching the rules of ethics of the profession is considered as unacceptable behavior, it will be evaluated and acted upon in by the laws and administrative regulations in force the institutions, and reflect all Palestinians economy [2].

During the COVID-19 pandemic, the internal audit profession has transformed from being a tool for internal control to becoming more comprehensive than this traditional concept, with the predictive information they provide that contributes to the prediction of risks that may hinder the company's achievement of its goals, and no doubt achieving this will help companies face risks. unexpected ones, such as the COVID-19 epidemic, and trying to deal with it in a way that reduces the size of losses and costs resulting from what it imposes on the environment and working conditions that differ fundamentally from what was followed previously [3].

Where institutions seek to improve performance by strengthening the work ethics system, which in turn reflects on the growth of society, Therefore, some internal auditors may not adhere to the ethics of the profession, which leads to the weakening of confidence of the public and beneficiaries of services, and, consequently to the loss of a lot of objectivity and position in society. Given the possibility that the principles and rules of ethics for the internal audit profession will not have an impact on the effectiveness of internal auditing units in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, given that the ethical principles of the internal audit profession are expectations that govern the behavior of individuals and institutions in the context of conducting internal audit work, as shown by the limit minimum requirements and behavioral expectations, not specific activities, according, there is a need for this study to answer the main study question:

Is there an Impact Code of Professional Conduct for Internal Auditors on the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic?

Therefore, this study will be implemented to examine the impact of each of the attributes of (integrity, objectivity, confidentiality, and Competency) on the effectiveness of the internal auditing units in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic to enhance the strengths of these units and address the weaknesses that exist in them to advance their work and achieve the purpose of their presence, and to identify the factors that affect the effectiveness of the internal auditing units in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.

So, the study derives its significance from the importance of the internal audit activity in the business environment, especially the banks listed on the Palestine Stock Exchange during crises and instability, given the effective role it plays in achieving the goals it seeks. and the extent of its impact on the profession's achievement of its objectives in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, it's also contributing to increased interest in the ethical environment in banks by decision-makers.

Thus, the paper makes an important and novel contribution to the literature on the code of professional conduct. So far as we are aware, it is the only paper to examine the impact of each of the attributes (integrity, objectivity, confidentiality, and competency) on the effectiveness of the internal auditing units in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic. Moreover, it is the first paper to identify the factors that impact the effectiveness of internal auditing units in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.

2   Literature Review

The researchers dealt with previous studies that dealt with the subject of the study, and those studies can be summarized as follows:

Study [4] aimed to examine the effect of competence, objectivity, independence on the effectiveness of internal audit with management support as moderating variables and showed that competence, objectivity, and independence significantly affect the effectiveness of the audit internal, as well a study [5] is to aim at the impact of auditor's competency, integrity, and ethics on audit quality from the perceptions of auditors. and the findings showed that the attributes of competence, integrity, and ethics have a significant impact on audit quality, while the study [6] showed Internal audit effectiveness in steel enterprises in Vietnam is influenced by various internal factors, including the size of internal audit, the scope of internal audit, the capacity of internal auditors, the independence of the internal auditor, and the operational base and methods of internal audit.

However, the study [7] purposed was to determine the purpose of integrity, objectivity, moral courage on the effectiveness of the internal audit. The result of the research indicated resources significantly influenced the effectiveness of internal audit and moral courage that significantly influenced the effectiveness of internal audit, while a study [8] revealed that internal auditor's integrity has a positive and significant effect on internal audit effectiveness of government departments.

Also, the study [9] purpose to investigate the effects of internal audit independence and objectivity on internal audit effectiveness in the Malaysian context, and the findings revealed that internal audit independence was positively affecting internal audit effectiveness. However, the effect of internal audit objectivity does not appear in the relationship with internal audit effectiveness.

While dealing with the study [10] which was entitled "The effect of internal auditor competence and objectivity, and management support on the effectiveness of internal audit function and financial reporting quality implications at local government" which aimed to examine the effect of the internal auditor competence and objectivity, and management support on the effectiveness of the internal audit function, and it showed that the internal auditor competence and objectivity, and management support have significant influence to the effectiveness of the internal audit function, which increases sustainability and gaining increasing attention among different stakeholder groups [11].

Commenting on Previous Studies

By presenting and analyzing some of the previous studies, it is possible to monitor the similarities and differences between them and this study, the aspects of benefiting from them, the most important thing that distinguishes this study from it, and explaining that as follows: where they are similar This study with many previous studies in its handling issue of principles and rules of professional conduct, its use of the descriptive approach, and the questionnaire as a tool for collecting information, moreover the researchers will benefit from the previous studies in several aspects, including choosing the study method used, building the study tool, the theoretical framework, the type of statistical treatments, and discussing and analyzing the results, But what distinguishes the current study is that it is the first attempt to study the impact of the principles and rules of ethics for the internal audit profession on the effectiveness of the internal auditing units in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, which is more important to adhere to ethics in times of crises than in normal circumstances, and study of independent variables related to the principles and rules of code professional ethics issued by the Institute of Internal Auditors.

3 Research Framework and Development Hypotheses

See Fig. 1.
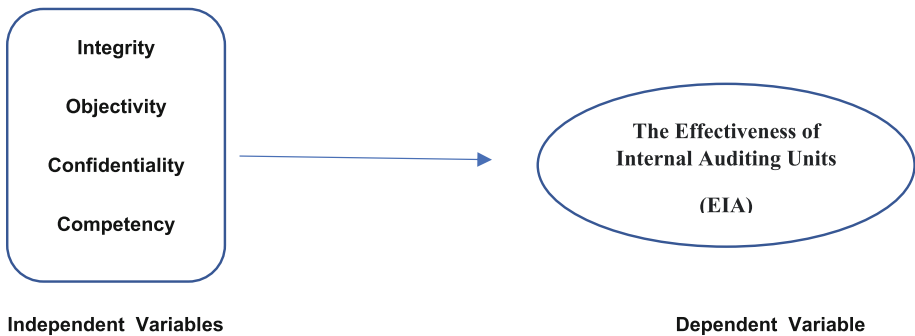
Fig. 1. The research framework

Independent Variables: It was built according to instructions No. (10) of 2017 regarding the guide to rules and best practices for bank governance in Palestine, the principles of professional ethics issued by the Institute of Internal Auditors (2017), and from the researcher's suggestion that he works in this field.

– **Study Concepts:**

The Effectiveness Internal Audit: Is the ability of IA to achieve specified goals in monitoring and improving internal control, risk management, and governance process

that contributes to creating added value for businesses. IA does not only play an important role in audited units but also the whole organization, it helps senior managers fulfill their governance responsibilities, allows the harmonization of stakeholders' interests, and increases the efficiency of the overall businesses [6].

Code of Ethics: The Code of Ethics is a statement of principles and expectations governing the behavior of individuals and organizations in the conduct of internal auditing Principles from the Code of Ethics: [12].

1. **Integrity:** The integrity of internal auditors establishes trust and thus provides the basis for reliance on their judgment.
2. **Objectivity:** An unbiased mental attitude that allows internal auditors to perform engagements in such a manner that they believe in their work product and that no quality compromises are made. Objectivity requires that internal auditors do not subordinate their judgment on audit matters to others.
3. **Confidentiality:** Internal auditors respect the value and ownership of information they receive and do not disclose information without appropriate authority unless there is a legal or professional obligation to do so.
4. **Competency:** Internal auditors apply the knowledge, skills, and experience needed in the performance of internal auditing services.

The framework of the research illustrates the association between the dependent variable and explanatory variables of the study, it depicts those four factors that may influence the effectiveness of internal auditing units.

The independent variables are Integrity, Objectivity, Confidentiality, Competency while the dependent variable is the effectiveness of internal auditing units. Four hypotheses were developed to measure the effect of the Code of Professional Conduct for Internal Auditors on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.

H: The auditor's the Code of Professional Conduct for Internal Auditors has a positive influence on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.
From the main hypothesis ramify the following hypotheses:
H1: The auditor's Integrity has a positive influence on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.
H2: The auditor's Objectivity positively influences the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.
H3: The auditor's Confidentiality has a positive influence on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.
H4: The auditor's competency positively influences the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.

4 Methodology

4.1 Study Methodology

The method used is the descriptive approach. At the level of the descriptive approach, a desk survey was conducted, and a review of Arab and foreign research, studies, and theoretical and field research was conducted to crystallize the foundations and premises on which the theoretical framework is based and to stand on the most important previous studies that represent a vital tributary in the study. A questionnaire was used, which was prepared based on the theoretical literature of previous studies and based on standards developed by many researchers and in a manner that suits the existing environment in the banks listed on the Palestine Exchange, intending to collect primary data and testing hypotheses.

4.2 The Study Population

The study population consists of (55) employees of the Internal Audit Department in the banks listed on the Palestine Exchange, which are: Bank of Palestine, Palestine Islamic bank, Arab Islamic Bank, Palestine investment bank, The national bank, Quds bank.

4.3 The Study Sample and the Demographic Characteristics of the Study Sample Members

According to the Krejcie and Morgan method [13], researchers had selected 50 employees from the internal audit department employees in the banks listed in the Palestine Stock Exchange and were selected randomly and systematically at a percentage of 90% of the total study population.

Nevertheless, the failure to retrieve all the questionnaires distributed to the study sample is due to the absence of some employees within reason of the outbreak of the new Corona epidemic, Covid-19, in Palestine and the world.

The data on the demographic characteristics of the study sample were analyzed using descriptive statistics indicators (frequencies, percentages), and the results were shown in Table 1 as follows:

Statistical analysis of the above table data indicates the following:

1. The majority of the study sample members have their position (Internal auditor) repeating (29) times and at a rate of 58% of the total, followed by the sample members with position (Head of a department) repeating (16) times for each of them and at a rate of 32% of the total, followed by The sample members with the position (Director of the Department) repeat (5) times for each of them and at a rate of 10% of the total, so the target sample in the study is considered representative of the original community.

Table 1. The demographic characteristics of the study sample

Variables	Categories	Frequency	% Percentage
Position	Director of the Department	5	10
	Head of the Department	16	32
	Internal Auditor	29	58
	Total	*50*	*100*
Educational qualification	Master's degree and above	6	12
	Bachelor	43	86
	Intermediate Diploma	1	2
	Total	*50*	*100*
Years of experience	Less than 5 years	16	32
	5–15 years old	26	52
	More than 15 years	8	16
	Total	*50*	*100*
Obtaining professional certification in auditing	Yes	10	20
	No	40	80
	Total	*50*	*100*

2. That 100% of them are university-qualified, and they hold certificates from specializations that deal in their study plans with the subject of the research (internal auditing and its ethics), where the percentage of the sample members who hold a bachelor's degree reached 86%, and this reflects the fact that most of the workers in banks are holders of a bachelor's degree, while the graduate studies holders (Masters and above) have a small percentage, amounting to 12% of the total sample of the study.

3. That 84% of them have more than five years of professional experience in the jobs they practice, which makes them aware of the internal audit activity, and then realize its effects and repercussions on the efficiency and effectiveness of operations and operational activities at banks, and this is an indication of the availability of sufficient expertise for the study sample's vocabulary to understand the purpose of the questionnaire and thus enhances Trust their answers.

4. In terms of the number of obtains of professional certificates in auditing, 80% of the study sample do not have specialized audit certificates, while 20% have specialized certificates in auditing.

4.4   The Study Tool and Sources for Obtaining Data and Information

To achieve the objectives of the study, the researchers developed a questionnaire to answer the study questions and test its hypotheses, the Data is collected through a self-designed English-Arabic questionnaire using Google online. The tool was developed

concerning the relevant theoretical literature, and two main sources were used to collect information:

Secondary Sources: In addressing the theoretical framework of the study, the researcher used secondary data sources, which are related to foreign books and references, periodicals, articles, reports, research, and previous studies that dealt with the subject of study, research, and reading on various internet sites, and the researcher's goal were to resort to secondary sources in the study, identifying the sound scientific foundations and methods in writing studies, as well as taking a general perception of the latest developments that occurred in the subjects of the study.

Primary Sources: To address the analytical aspects of the subject of the study, the primary data collection was resorted to through the questionnaire as the main tool for the study, which included several phrases that reflected the study objectives and questions to be answered by the respondents, and a five-dimensional Likert Scaling Method was used, so that each answer was taken relative importance.

The main study tool (the questionnaire) included three sections:

The First Section: contains the demographic data of the study sample members through (4) variables: (position, educational qualification, years of experience, obtaining professional certification in auditing), to describe the characteristics of the study sample.

The Second Section: The measure of factors affecting the effectiveness of the internal auditing units in the banks listed on the Palestine Exchange included four dimensions (Integrity, Objectivity, Confidentiality, and Competency) across (15) paragraphs to measure.

Third Section: The measure of the degree of effectiveness of the internal auditing units in the banks listed on the Palestine Stock Exchange included (4) items to be measured.

The response ranged from (1–5) according to the Five Likert Scale, as follows:

Answer alternatives	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Degree	5	4	3	2	1

Thus, the questionnaire (the study tool) in its final form consisted of (19) items on a five-point Likert scale.

4.5   Data Analysis

The result will be interpreted according to the following table:

Categories	More than 4.2	More than 3.4 and less than 4.2	More than 2.6 and less than 3.4	More than 1.8 and less than 2.6	Less than 1.8
Answer alternatives	Strongly agree	Strongly agree	Agree	Neutral	Strongly disagree
Significance	*Very high*	*High*	*Average*	*Low*	*Very low*

4.6 The Reliability of the Study Tool

The Reliability of the questionnaire means the stability of the results of the questionnaire and not changing them significantly if it was redistributed to individuals several times during certain periods. Cronbach's alpha can also be interpreted as the internal consistency coefficient between the answers, and its higher value indicates a higher degree of stability, and its value is acceptable at (60%) and above according to [14], where the stability coefficient of the tool is (91.3%). This indicates that the study tool has a high stability coefficient and its ability to achieve the objectives of the study.

5 Descriptive Analyses

It shows through the analysis of the questionnaire:

1. The most important factors that affected the effectiveness of the internal audit units in the banks listed on the Palestine Exchange during the COVID-19 pandemic showed the following:

The factors	Mean	Std. deviation	Significance
The auditor is obligated to respect the confidentiality of information obtained about the bank's business during the COVID-19 pandemic	4.30	0.67	1
The internal auditor is obligated not to be a party to any illegal activity that harms the profession of internal auditing or the bank during the COVID-19 pandemic	4.28	0.38	2
The auditor is concerned not to use the information for his benefit or the benefit of a third party during the COVID-19 pandemic	4.26	0.63	3
The internal auditor is keen not to engage in any activity that would misrepresent his impartial assessment during the COVID-19 pandemic	4.24	0.55	4

2. Descriptive Analysis: for the attributes of the Code of Professional Conduct and the Effectiveness of Internal Auditing units:

It shows in Table 2 **that:**

Table 2. Descriptive analysis:

Variables	Mean	Std. deviation
Integrity	4.03	.38
Objectivity	4.13	.50
Confidentiality	4.20	.52
Competency	3.94	.59
Code of professional conduct	4.07	.41
Effectiveness of internal auditing	4.10	.49

1. The attribute of Confidentiality has a high impact on the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, followed by the attribute of Objectivity, then Integrity, and finally the factor competency.
2. The degree of Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic is high.
3. The Code of Professional Conduct for Internal Auditors has a high impact on the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.
4. When looking at the figures for the standard Deviation, it indicates relative consistency between the opinions of all the samples, in the sense that the opinion of the sample is not dispersed.

6 Hypothesis Testing

H: The auditor's the Code of Professional Conduct for Internal Auditors has a positive influence on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.

To test the hypothesis, the researchers used Simple linear regression analysis:

Table 3. Simple linear regression analysis of the impact of the Code of Professional Conduct for Internal Auditors on the effectiveness of internal auditing units.

Variable	R	R square	F value	Sig
The code of professional conduct for internal auditors	*75%*	*56.2%*	*61.673*	*0.000*

Table 3 shows that the Code of Professional Conduct for Internal Auditors impact the effectiveness of the internal auditing units in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, where the value of the correlation coefficient (R) was 0.75, and the impact of the code of conduct on the effectiveness of the internal

auditing units in banks (0.562), which means that the variable the Code of Professional Conduct for Internal Auditors the independent was able to explain (56.2%) of the changes that occurred in the variable of the effectiveness of the internal auditing units in banks, and the rest (43.8%) was attributed to other factors.

This relationship is considered statistically acceptable because the calculated F value of 61.673 is statistically significant at 95% confidence level and with a level of significance $\alpha \leq 0.05$, and based on the calculated F value, this relationship is accepted because the significance level Sig of 0.000 is less than 0.05 and therefore we conclude the significance of the relationship between the Code of Professional Conduct for Internal Auditors and the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during COVID-19 pandemic, which means rejecting the null hypothesis, and accept the alternative hypothesis.

Consequently, the researchers elucidate the high level of impact of the code of professional conduct on the effectiveness of internal auditing unit is due to the commitment of internal audit workers to the principles and rules of professional conduct, to achieve confidence in the reports and work of the internal audit unit in banks during crises, especially the COVID-19 pandemic, in addition to contributing to improving the effectiveness of governance and internal control system in it.

Table 4. Estimating the relationship between variables according to Simple linear regression analysis:

Coefficients[a]

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	*.489*	*.462*		*1.058*	*.295*
Code of professional conduct	*.887*	*.113*	*.750*	*7.853*	*.000*

[a]Dependent Variable: EIA

Table 4 shows the value of the regression coefficient of the Code of Professional Conduct, and this can be summarized by the regression line equation:

$$EIA = 0.489 + 0.887 \text{ code of conduct} + e$$

Moreover shows that the value of the code of conduct coefficient is 0.887, which means an increase in the value of the code of conduct by one unit leads to an increase of 0.887 units in the effectiveness of the internal auditing units in the banks listed in the Palestine Stock Exchange, accordingly, this means the existence of a significant, positive Impact the Code of Professional Conduct for Internal Auditors on the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during COVID-19 pandemic.

H1: The auditor's Integrity has a positive influence on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.

To test the hypothesis, the researchers used Simple linear regression analysis:

Table 5. Simple linear regression analysis of the impact of integrity on the effectiveness of internal auditing units.

Variable	R	R square	F value	Sig
Integrity	*52.6%*	*27.7%*	*18.408*	*0.000*

Table 5 shows that integrity impacts the effectiveness of the internal auditing units in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, where the value of the correlation coefficient (R) was 0526 and the impact of Integrity on the effectiveness of the internal auditing units In banks (0.277), which means that the variable integrity the independent was able to explain (27.7%) of the changes that occurred in the variable of the effectiveness of the internal auditing units in banks, and the rest (72.3%) was attributed to other factors.

This relationship is considered statistically acceptable because the calculated F value of 18.408 is statistically significant at 95% confidence level and with a level of significance $\alpha \leq 0.05$, and based on the calculated F value, this relationship is accepted because the significance level Sig of 0.000 is less than 0.05 and therefore we conclude the significance of the relationship between integrity and the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during COVID-19 pandemic, which means rejecting the null hypothesis, and accepting the alternative hypothesis.

Consequently, the researchers expound on the high level of influence of the integrity on the effectiveness of the internal auditing unit is due to the obligation of the internal auditor not to be a party to any illegal activity that harms the internal audit profession or the bank during the COVID-19 pandemic.

Table 6. Estimating the relationship between variables according to Simple linear regression analysis:

Coefficients[a]					
Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	*1.417*	*.628*		*2.255*	*.029*
Integrity	*.667*	*.155*	*.526*	*4.290*	*.000*

[a]Dependent Variable: EIA

Table 6 shows the value of the regression coefficient of the Integrity, and this can be summarized by the regression line equation:

$$EIA = 1.417 + 0.667 \text{ Integrity} + e$$

Moreover, shows that an Integrity coefficient is 0.667, which means an increase in the value of the Integrity by one unit leads to an increase of 0.667 units in the effectiveness of the internal auditing units in the banks listed in the Palestine Stock Exchange, accordingly, this means the existence of a significant, positive impact of an Integrity attribute on the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during COVID-19 pandemic.

H2: The auditor's Objectivity positively influences the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.

To test the hypothesis, the researchers used Simple linear regression analysis:

Table 7. Simple linear regression analysis of the impact of Objectivity on the effectiveness of internal auditing units.

Variable	R	R square	F value	Sig
Objectivity	*70.6%*	*49.9%*	*47.721*	*0.000*

Table 7 shows that an Objective impact the effectiveness of the internal auditing units in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, where the value of the correlation coefficient (R) was 0.706 and the impact of the Objectivity on the effectiveness of the internal auditing units In banks (0.499), which means that the variable objectivity the independent was able to explain (49.9%) of the changes that occurred in the variable of the effectiveness of the internal auditing units in banks, and the rest (50.1%) was attributed to other factors.

This relationship is considered statistically acceptable because the calculated F value of 47.721 is statistically significant at 95% confidence level and with a level of significance $\alpha \leq 0.05$, and based on the calculated F value, this relationship is accepted because the significance level Sig of 0.000 is less than 0.05 and therefore we conclude the significance of the relationship between an Objectivity and the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during COVID-19 pandemic, which means rejecting the null hypothesis, and accepting the alternative hypothesis.

Consequently, the researchers explain the high level of impact of the objectivity on the effectiveness of the internal auditing unit is due to the internal auditor's keenness not to participate in any activity that would harm his impartial assessment during the COVID-19 pandemic.

Table 8 shows the value of the regression coefficient of the Objectivity, and this can be summarized by the regression line equation:

$$EIA = 1.249 + 0.690 \text{ Objectivity} + e$$

Table 8. Estimating the relationship between variables according to Simple linear regression analysis:

Coefficients[a]

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	*1.249*	*.416*		*3.005*	*.004*
Objectivity	*.690*	*.100*	*.706*	*6.908*	*.000*

[a]Dependent Variable: EIA

Moreover, shows that an Objectivity coefficient is 0.690, which means an increase in the value of the Objectivity by one unit leads to an increase of 0.690 units in the effectiveness of the internal auditing units in the banks listed in the Palestine Stock Exchange, accordingly, this means the existence of a significant, positive impact of an Objectivity attribute on the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during COVID-19 pandemic.

H3: The auditor's Confidentiality has a positive influence on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.

To test the hypothesis, the researchers used Simple linear regression analysis:

Table 9. Simple linear regression analysis of the impact of Confidentiality on the effectiveness of internal auditing units.

Variable	R	R square	F value	Sig
Confidentiality	*64.3%*	*41.3%*	*33.803*	*0.000*

Table 9 shows that Confidentiality impacts the effectiveness of the internal auditing units in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, where the value of the correlation coefficient (R) was 0.643 and the impact of Confidentiality on the effectiveness of the internal auditing units in banks (0.413), which means that the variable a Confidentiality.

the independent was able to explain (41.3%) of the changes that occurred in the variable of the effectiveness of the internal auditing units in banks, and the rest (58.7%) was attributed to other factors.

This relationship is considered statistically acceptable because the calculated F value of 33.803 is statistically significant at 95% confidence level and with a level of significance $\alpha \leq 0.05$, and based on the calculated F value, this relationship is accepted because the significance level Sig of 0.000 is less than 0.05 and therefore we conclude

the significance of the relationship between the Confidentiality and the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during COVID-19 pandemic, which means rejecting the null hypothesis, and accepting the alternative hypothesis.

Consequently, the researchers interpret the high level of the impact of confidentiality on the effectiveness of the internal auditing unit as due to the auditor's commitment to respecting the confidentiality of information obtained about the bank's business during the COVID-19 pandemic.

Table 10. Estimating the relationship between variables according to Simple linear regression analysis:

Coefficients[a]					
Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	*1.574*	*.438*		*3.596*	*.001*
Confidentiality	*.602*	*.104*	*.643*	*5.814*	*.000*

[a]Dependent Variable: EIA

Table 10 shows the value of the regression coefficient of the Confidentiality, and this can be summarized by the regression line equation:

$$\text{EIA} = 1.574 + 0.602 \text{ Confidentiality} + e$$

Moreover, shows that a Confidentiality coefficient is 0.602, which means an increase in the value of the Confidentiality by one unit leads to an increase of 0.602 units in the effectiveness of the internal auditing units in the banks listed in the Palestine Stock Exchange, accordingly, this means the existence of a significant, positive impact of a Confidentiality attribute on the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during COVID-19 pandemic.

H4: The auditor's competency positively influences the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.

To test the hypothesis, the researchers used Simple linear regression analysis:

Table 11 shows that the Competency impact the effectiveness of the internal auditing units in the banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, where the value of the correlation coefficient (R) was 0.587 and the impact of the Competency on the effectiveness of the internal auditing units in banks (0.344), which means that the variable a Competency.

The independent was able to explain (34.4%) of the changes that occurred in the variable of the effectiveness of the internal auditing units in banks, and the rest (65.6%) was attributed to other factors.

Table 11. Simple linear regression analysis of the impact of Competency on the effectiveness of internal auditing units.

Variable	R	R square	F value	Sig
Competency	*58.7%*	*34.4%*	*25.177*	*0.000*

This relationship is considered statistically acceptable because the calculated F value of 25.177 is statistically significant at 95% confidence level and with a level of significance $\alpha \leq 0.05$, and based on the calculated F value, this relationship is accepted because the significance level Sig of 0.000 is less than 0.05 and therefore we conclude the significance of the relationship between the Competency and the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during COVID-19 pandemic, which means rejecting the null hypothesis, and accepting the alternative hypothesis.

Consequently, the researchers explicate the high level of the impact of Competency on the effectiveness of the internal auditing unit is due to the internal auditor exerting the necessary professional care in his work during the COVID-19 pandemic.

Table 12. Estimating the relationship between variables according to Simple linear regression analysis:

Coefficients[a]					
Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	*2.197*	*.383*		*5.731*	*.000*
Competency	*.484*	*.096*	*.587*	*5.018*	*.000*

[a]Dependent Variable: EIA

Table 12 shows the value of the regression coefficient of the Competency, and this can be summarized by the regression line equation:

$$EIA = 2.197 + 0.484 \text{ Competency} + e$$

Moreover, shows that a Competency coefficient is 0.484, which means an increase in the value of the Competency by one unit leads to an increase of 0.484 units in the effectiveness of the internal auditing units in the banks listed in the Palestine Stock Exchange, accordingly, this means the existence of a significant, positive impact of a Competency attribute on the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during COVID-19 pandemic.

7   Conclusion and Recommendations

This research was focused primarily on the Code of Professional Conduct for internal auditors and the factors that affected the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic. The Effectiveness of Internal Auditing is not primarily concerning auditing standards but the ethic of internal auditors, their Integrity, Objectivity, Confidentiality, Competency, and how they respond to the regulations of the professional review standards.

By analyzing the answers to questionnaires and testing the hypotheses, the results can be summarized as follows:

1. The auditor's the Code of Professional Conduct for Internal Auditors has Significantly a positive influence on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.
2. The auditor's Integrity has Significantly a positive influence on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, this result was similar to the studies [7, 8].
3. The auditor's Objectivity has Significantly a positive influence on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, this result was similar to the studies [3, 7, 10], but it is not similar to the study [9].
4. The auditor's Confidentiality has Significantly positively influenced the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic.
5. The auditor's Competency has Significantly a positive influence on the effectiveness of internal auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, this result was similar to the studies [3, 10].
6. The attribute of Confidentiality has a high impact on the Effectiveness of Internal Auditing units in banks listed on the Palestine Stock Exchange during the COVID-19 pandemic, followed by the attribute of Objectivity, then Integrity, and finally the factor competency.
7. It showed that the most influential factor on the effectiveness of internal auditing units in banks during the COVID-19 pandemic is (The auditor is obligated to respect the confidentiality of information obtained about the bank's business during the COVID-19 pandemic), followed by the factor (The internal auditor is obligated not to be a party to any illegal activity that harms the profession of internal auditing or the bank during COVID-19 pandemic).

The Result of this study is the basis for the following recommendations for banks in Palestine in the current context:

1. Strengthen the potentials and capabilities of auditors through specialized training courses in the field of the Code of Professional Conduct for Internal Auditors.

2. Increasing the awareness of employees in the internal auditing units of the importance of obligation to the attributes of integrity and competency more during crises.
3. It is necessary to strengthen the ethical environment and its principles in the work of internal audit units in banks because of their great impact on achieving goals, during crises, especially at the COVID-19 pandemic.
4. Attention to developing the capabilities of employees in the internal audit units in banks and raising their competency.
5. Strengthening the independence of the internal audit unit in banks to increase the objectivity of the internal auditors, as it has a significant impact on the effectiveness of the unit's work.
6. Enhancing the values of integrity among employees of the Internal Auditing Unit through incentives and rewards.

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The Expected Impact of Applying IFRS17 on the Quality of Financial Reports for Insurance Companies Listed on the Amman Stock Exchange. (An Analytical Study)

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Abstract. This study aims to identify the expected impact of applying IFRS 17 on the quality of financial reports for insurance companies listed on the Amman Stock Exchange. To achieve the objectives of the study, a questionnaire was distributed to several accounting employees of all categories in insurance companies who were selected randomly as sample. The results showed that there is a strong impact relationship between applying IFRS 17 to the relevance of financial reports in insurance companies. The study has also shown a strong impact relationship between applying IFRS 17 and the establishment of financial reports credibility for insurance companies. The study recommended the need to apply the IFRS 17 in insurance companies since it will allow comparability with other companies in the same sector and other sectors.

Keywords: International Financial Reporting Standard No. 17 · Financial reporting · Financial reporting quality

1 Introduction

The importance of financial reports is increasing in the era of economic progress and modern technologies. The development of information systems we witness today and linking global markets require obtaining the best, most accurate, most appropriate, and flexible information, which posed as challenges for companies' management to improve the level of disclosure and transparency in their financial reports to rationalize various economic decisions for all users of these statements [8].

IFRS17 emerged, aiming to provide information of benefit to users of financial reports. Information must be characterized by appropriateness and reliability, which helps users to make rational decisions or correct previous decisions, and this is how IFRS17 paved the way for improving the quality of financial reports for insurance companies. Thus, these reports and financial statements, including credible and transparent accounting and financial information and data, fairly representing the financial position

of these companies. Hence, this study came to identify the expected impact of applying the international financial standard Reporting IFRS17 on the quality of financial reports for insurance companies listed on the Amman Stock Exchange.

The standard was supposed to be applied on January 1, 2021, but due to the Corona pandemic, IAS 17 will become effective for annual reporting periods beginning on or after January 1, 2023, with early application permitted if IFRS 9 is also applied.

To understand the effects of the new standard, this study asks the following question: What is the expected impact of applying the International Financial Reporting standard IFRS17 on the quality of financial reports for insurance companies listed on the Amman Stock Exchange?

Branch out from the main question, are the following sub-question:

1) Is there an expected impact from the application of the IFRS17 on the relevance of financial reports?
2) Is there an expected impact from the application of IFRS17 on the reliability of financial reports?

2   Literature Review

Al-Najjar [1] found a strong correlation between the implementation of IFRS 17, the development of recognition and measurement, and improved presentation and disclosure of financial reports of insurance companies. It also found a strong correlation between the application of IFRS 17 and the improvement of the quality of the financial reports of insurance companies. Al-Mashhadani, [6] reached several conclusions, the most important of which is the statistically significant influence relationship between IFRS 17 scale models and capital solvency in insurance companies.

On other hand Kansal [4] studied the actuarial challenges to the implementation of IFRS 17. He tried to highlight some of the critical areas to the implementation of IFRS 17 and ensured that businesses can align with or reflect commercial practices in their accounting. He gave recommendations that companies should perform a detailed impact analysis to know the influence of all items for which choices can be made. In particular, they should know the impact of any choices to make an informed decision.

Longonia. Philip [5] indicated that the introduction of IFRS 17 is accompanied by an adverse price reaction for IFRS insurers, while Fleischmann, [3] presented simultaneous quantitative simulation of the impact of IFRS 9 and IFRS 17 in Taiwan.

This study presents the importance of the insurance sector and the percentage of its impact on the domestic product and the economy; this study is also characterized by the scarcity of previous studies and research addressing the expected impact of the applying of the international financial standard IFRS17.

3   The Research Methodology

This study aims to highlight the expected impact of the applying of the IFRS 17 on the quality of financial reports for insurance companies and to test the extent to which accountants in insurance companies rely on the applying of IFRS 17. This study relies

on the descriptive analytical approach as it is one of the most widely used approaches in the study of social and human phenomena and because it fits the objectives of the research. The data analysis relied on the Statistical Analysis Program (SPSS), and some well-known tests were applied to reach some proposed results and recommendations.

3.1 Data Collection Method

This study will depend on both primary and secondary data sources, as follows:

A - Secondary Data Sources
This study relies on some secondary data sources, which are mainly represented in books, references, research, studies, and some related websites on the World Wide Web (Internet), as well as the annual published bulletins and reports of the Amman Stock Exchange.

B - Preliminary Data
This study mainly depends on a questionnaire designed and distributed to answer the study questions to identify the extent of the expected impact of applying IFRS17 on the quality, reliability, and relevance of financial reports for insurance companies.

3.2 Sample of the Study

Insurance companies listed on the Amman Stock Exchange were chosen as a study community because the scope of IFRS 17 is concerned with companies that issue insurance contracts or reinsurance contracts, and this applies to insurance companies, in addition to that all Jordanian insurance companies must be listed on the Amman Stock Exchange according to the Jordanian Companies Law. The study population consists of accountants in insurance companies. The study sample includes a random sample of all categories of accounting employees in insurance companies. The researchers distributed the questionnaire to the electronic study sample, and (86) questionnaires were retrieved.

3.3 Instrument of Study

In collecting data, the researchers relied on two main types of data: the first, books and periodicals, the second, the questionnaire (Table 1). After reviewing the studies, the questionnaire was designed considering the study's objectives and hypotheses in the appropriate and required manner.

The questionnaire was divided into two parts as follows:

1 - Part One
It consists of six questions related to demographic information about the sample members. This part contains (6) questions such as gender, age, educational qualification, job title, years of experience, and professional certificates.

2 - Part Two
It consists of forty-one questions related to relevance and reliability.

The Stability of the Questionnaire
The researchers verified the stability of the research resolution through the Cronbach Alpha coefficient, as follows:

Table 1. Cronbach's alpha test

Number of phrases for the survey list	Stability coefficient (Alpha)	Honesty coefficient
41	0.948	0.965

It is clear from the previous table that the coefficient Cronbach Alpha for the questionnaire amounted to 0.948, which is a high value from the statistical point of view, as well as the values of the Cronbach Alpha coefficients in all areas, are statistically high and enjoy a high degree of stability.

Statistical Techniques Used:

The researchers used statistical equations to answer the study questions, and they were as follows:

1. Frequencies, percentages, mean and median.
2. Pearson correlation coefficient.
3. Simple regression test.
4. Correlation test.

Description of the Sample Characteristics:

A set of general questions were devoted to identifying the characteristics of the research sample in terms of (gender, age, academic qualification, job title, number of years of experience, professional certificates) to provide a basis for analyzing the results of the study through the following results (Table 2):

Table 2. Personal and job data

Statement	Number	Category	Repetition	Percentage
Job title	4	Financial Manager	11	12.8
	3	Head of the Department	16	18.6
	1	Accountant	40	46.5
	2	Other	19	22.1
	Total		86	100
Years of experience	3	Less than 5 years	13	15.1
	2	From 5 years to less than 10 years	23	26.7
	2	From 10 years to less than 15 years	23	26.7
	1	15 years and over	27	31.4
	Total		86	100
Professional certificates	3	ACPA	7	8.1
	2	JCPA	13	15.1
	4	AICPA	2	2.3
	5	ACCA.AC	0	0
	4	CPA	2	2.3
	1	Other	62	72.1
	Total		86	100

It is found that 31.4% of the sample have years of experience of more than 15 years, and their number is 27 individuals, followed by (26.7%) of the sample from 5 years to more than 10 years. This percentage indicates the desire of insurance companies to retain competencies, experiences, and skills to continue the best performance. It indicates that the respondents have high experience in their field of work, especially that employees' access to leadership positions requires a minimum level of experience determined according to the job description of insurance companies.

3.4   Hypothesis Test

The researchers collected the data that were analyzed according to the SPSS program in light of the study's objectives and hypotheses. To test these hypotheses, the researchers used correlation analysis and regression analysis, and the results were as follows:

A - Test the First Hypothesis
Here, the researchers reviews the results of the first hypothesis test, which states that "There is no expected impact of statistical significance at the level ($\alpha \leq 0.05$) of applying

the IFRS17 on the quality of financial reports." The variables of this hypothesis are as follows:

1 - Correlation Analysis

Table 3. The results of the correlation between the variables of the first hypothesis

Independent variable	Correlation coefficient (R)	Coefficient of determination (R2)	Sig
The expected impact of applying IFRS17	0.975	0.951	0.000[**]

[**] Indicates the significant correlation coefficient at the (0.01) significance level.

The following results are evident from the previous table (Table 3):

- The (positive) correlation coefficients sign indicates the existence of a positive (positive) relationship between the application of IFRS 17 and the quality of financial reports.
- The value of the total correlation coefficient (0.975) indicates the strength of the positive correlation between the application of IFRS 17 and the development of the quality of financial reports.
- The researchers concludes that there is a strong direct correlation between the application of IFRS 17 and the development and quality of financial reports.

2 - Regression Analysis

Table 4. The results of the regression analysis for the variables of the first sub-hypothesis

Statement	Regression coefficient (B)	
Fixed amount (BO)	0.350	
Independent variable	(X) Implementation of IFRS 17	0.920

A quantitative model for simple regression between the variables of the first hypothesis can be formulated as follows (Table 4):

Quality of financial reports $= 0.350 + 0.920$ Application of the International Financial Reporting Standard IFRS 17.

The researchers concludes from the results of the regression analysis of the first hypothesis that there is a strong influence relationship between the application of IFRS 17

and the development of the quality of financial reports, and he rejects the null hypothesis and accepts the positive hypothesis.

B - Testing of the First Sub-hypothesis

Here, the researchers reviews the results of the first sub-hypothesis test, which states that "There is no expected impact of statistical significance at the level ($\alpha \leq 0.05$) of applying the IFRS17 on the relevance of financial reports." The variables of this hypothesis are as follows:

- The independent variable (X): IFRS17.
- The dependent variable (Y): relevance of financial reports.

1 - Correlation Analysis

Table 5. The results of the correlation between the variables of the first sub-hypothesis

Independent variable	Correlation coefficient (R)	Coefficient of determination (R2)	Sig.
The Expected Impact of Applying IFRS17	0.972	0.946	0.000[**]

[**] Indicates the significant correlation coefficient at the (0.01) significance level.

The following results are evident from the previous table (Table 5):

- The (positive) correlation coefficients sign indicates the existence of a positive (positive) relationship between the application of IFRS 17 and the development of relevance for financial reports for insurance companies.
- The value of the total correlation coefficient (0.972) indicates the strength of the positive correlation between the application of IFRS 17 and the development of relevance foundations for financial reports for insurance companies.
- The researchers concludes that there is a strong correlation between the impact of the application of the IFRS 17 and the development of the recognition, measurement and improvement of presentation and disclosure of financial reports for insurance companies, which resulted in rejecting the null hypothesis and accepting the positive hypothesis which states "There is an expected impact of statistical significance at the level ($\alpha \leq 0.05$) of applying the IFRS17 on the relevance of financial reports."

2 - Regression Analysis

A quantitative model for simple regression between the variables of the first hypothesis can be formulated as follows (Table 6):

Table 6. The results of the regression analysis for the variables of the first sub-hypothesis

Statement	Regression coefficient (B)	
Fixed amount (BO)	0.353	
Independent variable	(X) Implementation of IFRS 17	0.912

The basis for the relevance of financial reports for insurance companies $= 0.353 + 0.9125$ Application of IFRS 17.

The researchers concludes from the regression analysis results of the first hypothesis that there is a strong influence relationship between the applications of the IFRS 17 of the relevance of financial reports for insurance companies, which supports the rejection of the null hypothesis of the study.

C - Second Sub-hypothesis Test

Here, the researchers reviews the results of the second hypothesis test, which states that: "There is no expected impact of statistical significance at the level ($\alpha \leq 0.05$) of applying the IFRS17 on the reliability of financial reports." The variables of this hypothesis are as follows:

The independent variable (X): IFRS 17.

Dependent variable (Y): reliability of the financial reports.

1 - Correlation Analysis

Table 7. The results of the correlation between the second hypothesis sub-variables

Independent variable	Correlation coefficient (R)	Coefficient of determination (R2)	Sig
The Expected Impact of Applying IFRS17	0.980	0.961	0.000**

** Indicates the significant correlation coefficient at 0.01. Significance level

The following results are evident from the previous table (Table 7):

The (positive) correlation coefficients indicate the existence of a positive (positive) relationship between the applications of IFRS 17, the foundations of the reliability of financial reports for insurance companies.

The value of the total correlation coefficient (0.980) indicates the strength of the positive correlation between the application of IFRS 17 (as an independent variable) and the foundations of the reliability of financial reports for insurance companies (as a dependent variable).

The researchers concludes from the above that there is a strong direct correlation between the application of the IFRS 17, and the foundations of the reliability of financial reports for insurance companies, which resulted in the rejection of the null hypothesis

and the acceptance of the positive hypothesis, which states that: "There is expected impact of statistical significance at the level ($\alpha \leq 0.05$) of applying the IFRS17 on the reliability of financial reports."

2 - Regression Analysis

Table 8. The results of the regression analysis for the variables of the second hypothesis

Statement	Regression coefficient (B)	
Fixed amount (BO)	0.361	
Independent variable	(X) Implementation of IFRS 17	0.905

A quantitative model of simple regression between the variables of the second hypothesis can be formulated as follows (Table 8):

The foundations of the reliability of the financial reports of insurance companies = $0.361 + 0.905$ Application of the International Financial Reporting Standard IFRS 17.

The researchers concludes from the results of the regression analysis of the second hypothesis that there is a strong influence relationship between the application of the IFRS 17, and the foundations of the reliability of financial reports for insurance companies, which resulted in the rejection of the null hypothesis and the acceptance of the positive hypothesis which states that: "There is expected impact of statistical significance at the level ($\alpha \leq 0.05$) of applying the IFRS17 on the reliability of financial reports." The result conforms to the study of Al-Najjar [1].

4 Conclusions

Based on the theoretical and field study carried out by the researchers on (the expected impact of the application of the IFRS 17 on the quality of financial reports for insurance companies listed on the Amman stock exchange), the researchers reached the following results:

- IFRS 17 is an essential step in the field of controlling the accounting practices of the insurance activity and improving the quality of its financial reports, and this is since the standard has been allocated to the insurance activity only and not to the economic entity, so that the application of the standard is limited to all insurance contracts that are included in its scope throughout the duration of these contracts, regardless of the nature of the activity of the entity issuing those contracts.
- The application of IFRS 17 requires separating the contract components into three non-insurance components according to their characteristics and conditions to be separately accounted for, which affects improving the quality of financial reports and providing more appropriate information for users of these reports on the cash flows associated with these components and the company's operational performance.

- The application of IFRS17 depends on estimates based on current market conditions and not unreal historical estimates, which impact the improvement of the quality of financial reports and make the information contained therein more appropriate and honestly reflect the company's current situation.

5   Recommendations

Considering the findings of the study and in order to highlight the expected impact of the application of the IFRS 17 on the quality of financial reports for insurance companies listed on the Amman Stock Exchange, the researchers recommends the following:

- The necessity of applying the IFRS 17 in insurance companies since it will allow comparability with companies in the same sector and other sectors.
- Increasing the knowledge of insurance companies' workers with the requirements of the IFRS 17 by engaging them in specialized courses and setting sufficient budgets for training and development.
- The necessity of conducting more research and studies related to the impact of adopting the IFRS 17 in improving the quality of financial reports and the obstacles to its application, such as current laws, professional qualification for preparers of financial reports in insurance companies, as well as auditors, and the increasing needs of information by current and prospective investors.

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An Understanding of 'Sustainable Development' from a Shariah Perspective and the Role Played by Islamic Finance in Its Attainment to Absorb COVID-19 Pandemic Effect

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Abstract. Sustainable development has been gaining wide emergence in the western and Islamic world as a new paradigm of development, seeking the consideration of social and environmental aspects while pursuing economic growth. While the concept, in its modern form, only emerged in the 1980s, Islamic teachings reinforced it since its inception through its rulings that aim to achieve justice and social welfare, reflected in Maqasid Al Shariah (objectives of Islamic rulings). In this paper, we look to explain further, through qualitative secondary research, the link between Shariah and sustainable development and evaluate if Islamic finance, which theoretically should be aligned with the concept of sustainable development given its basis on Shariah, is contributing to its attainment. We find that, while some efforts are being done by Islamic financial institutions (IFIs) to prove this view, IFIs largely lack today in fully aligning their activities with Maqasid Al Shariah which has been limiting their role in the attainment of sustainable development.

Keywords: Sustainable development · Maqasid Al Shariah

1 Introduction

In this paper, we aim to explore this topic further by gaining an understanding of the alignment of the concept of sustainability with Shariah and examining the role played by the IFSI in its attainment compared to what is theoretically assumed. In particular, the paper will aim to answer the following research questions linked to the respective objectives.

Question 1: How does Shariah guide sustainability?

- Objective 1: To understand the link between sustainability and Shariah.

Question 2: How does the concept of Islamic finance align with responsible and ethical financing and what are the Islamic financial instruments that allow achieving the UN SDGs?

- Objective 2: To analyze the viability of Islamic finance as a tool for attaining sustainability.

Question 3: What are the various initiatives linked to sustainability in the IFSI and how aligned are the activities of Islamic financial institutions (IFIs) with Maqasid Al Shariah?

- Objective 3: To evaluate the extent to which the current practices of the IFSI contribute to achieving sustainability.

The rest of the paper is structured as follows. Section 2 will look at defining sustainability and its link with Shariah. Section 3 will present how Islamic finance is considered a viable tool in attaining sustainability given its alignment with Shariah.. Finally, Sect. 4 concludes.

2 Sustainability and Its Link with Shariah

The concept of sustainable development, while widely referred to today through the Brundtland Report and the UN SDGs, is intrinsic to the teachings of Islam since the 7th century. In Islam, the universe is seen as the creation of Allah (swt) which was developed in the most harmonious and perfect balance allowing a good sustenance of life as long as it exists. Allah (swt) entrusted mankind as vicegerents or Khalifas in earth to manage its resources and prosper them through just and fair interactions that do not transgress the placed balance or inflict any harm through greed or misuse. Indeed, Allah (swt) warn mankind that any unjust act, it being to the environment, society, or economically, will inflict consequences on mankind through calamities and hardship, as outlined in the verse: "*Calamities have appeared on land and sea because of what the hands of the people have earned, so that He (Allah) makes them taste some of what they did, in order that they may return (to the right way)*" (Ar-Rum [30]:41). Thus, Islam calls for the wise management of resources that allows attaining today's needs without affecting those of the future, making sustainability an intrinsic obligation that all Muslims are required to fulfill (Matali 2012; Sarkawi et al. 2016).

A key reflection of this obligation is in the intents and objectives of Islamic rulings (Maqasid Al Shariah) which aim for the attainment of social welfare (Maslaha) through the primarily preservation of five key necessities: religion, life, intellect, progeny, and wealth, as explained by Al Gazali (Auda 2008; Rkiouak 2016). To that end, the Quran outlines several principles that permit the human's enjoyment of the blessings that Allah (swt) bestowed on him but in a manner that does not inflict negative implications on the trust (Amanah) that Allah (swt) entrusted him with (Matali 2012; Ibrahim et al. 2014). Some of these principles include balance and moderation (Ar-Rahman [55]:8–9), justice and equity (Al-Ma'idah [5]:8), avoidance of wastage (Al-A'raf [7]:31), and wealth circulation and fair distribution (Al-Hashr [59]:7). Consequently, Muslims are

prescribed to consume resources moderately, in a manner that does not cause injustice to others, by depleting these resources for example, and should not create waste through this consumption that would inflict harm on the balance placed by Allah (swt), through pollution for example.

Several key environmental, social, and economic issues are addressed by Shariah, in both Quran and the Sunnah (Mukhtar et al. 2018). In terms of the society, Shariah outlined several obligations to eliminate inequality, encourage education, facilitate safety and health, and promote peace for conducive and inclusive communities. Allah (swt) says: "*O mankind, We have created you from a male and a female, and made you into races and tribes, so that you may identify one another. Surely the noblest of you, in Allah's sight, is the one who is most pious of you. Surely Allah is All-Knowing, All-Aware*" (Al-Hujurat [49]:13). Also, as in the saying of the Prophet Muhammad (saw), narrated by Abu Hurairah: "*If anyone pursues a path in knowledge, Allah will thereby make easy for him a path to the Paradise …*" (Sunan Abu Dawud 3636).

Shariah also addressed environmental aspects, including the protection of natural resources, caring for all living beings, encouraging disaster management, among others. This is seen in several verses; Allah (swt) says: "*There has come to you a clear sign from your Lord. Give the measure and weight in full, and do not make people short of their things, and do not make mischief on the earth after it has been set in order. That is good for you, if you are believers*" (Al-A'raf [7]:85). Also, the Prophet Muhammad (saw) said, narrated by Sahih Al-Bukhari: "*There is none amongst the Muslims who plants a tree or sows seeds, and then a bird, or a person or an animal eats from it, but is regarded as a charitable gift for him*" (Sahih al-Bukhari 2320).

On the economic front, Shariah has put in place several rulings that ensure the establishment of a just economic system where wealth is preserved through the protection of the ownership and value of wealth, its acquisition and development, its circulation, and its preserving from any damage. Shariah has thus prohibited usury (riba), uncertainty (gharar), and gambling (maysir) in transactions, as well as the transacting in any prohibited goods that do not achieve Maslaha for society. Also, it obligated Zakat (compulsory charity[1]) and encouraged Saqdah to achieve economic equality. Indeed, Allah (swt) says: "W*hatever fai' Allah has passed on to His Messenger from the people of the towns is for Allah and for the Messenger, and for the kinsmen and the orphans and the needy and the wayfarer, so that it may not circulate only between the rich among you…*" (Al-Hashr [59]:7).

Sources: Mukhtar et al. (2018), Abdel and Tarshany (2016).

Through this, it is generally agreed that sustainability in Islam is a much stronger concept than in the western view as it reflects an obligation from the Creator imposed on mankind and on which he will be questioned on the Day of Resurrection, unlike the non-accountable nature of sustainability in the western view (Shaikh and Ismail 2015). Consequently, many believe that the concept of sustainability, as conceived by the western world, lacks an important pillar of ethics/religion for its comprehensiveness (Sarkawi et al. 2016). In fact, some even propose a reconstruction of the concept through the Islamic worldview and principles. For example, Rkiouak (2016) outlined an Islamic

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[1] Zakat is a mandatory charity for Muslims that reach a certain level of wealth, known as Nisab (OECD 2020).

model of sustainable development through Maqasid Al Shariah which is based on five pillars: justice, education, social welfare, human stewardship, and wealth.

3 Islamic Finance as a Tool for Attaining Sustainability

It is widely agreed that the financial sector can play an important role in the attainment of sustainable development, through channeling funds to responsible investments, innovating new financial instruments that contribute to sustainable goals, and influencing management decisions of companies through lending practices (Delphi International Ltd. 1997). This can be seen in Fig. 1 below. Accordingly, recognizing this potential, several frameworks have emerged over the past years to facilitate a paradigm shift in the financial sector, traditionally driven by the maximization of profits, and encouraging the employment of capital for the attainment of sustainable development. These include Socially Responsible Investment (SRI); Environmental, Social, and Governance (ESG) values; UN Principles for Responsible Investment (UN PRI); and UNEP FI Principles for Responsible Banking (PRB) (Khan 2019; Islamic Finance Council UK 2021a).
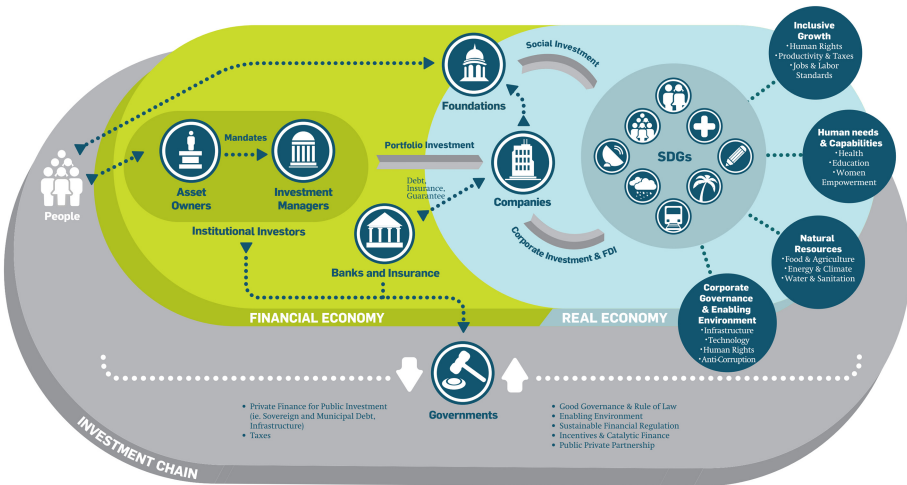
Fig. 1. Role of Financial Institutions in Achieving Sustainable Development through Investments. Source: (UN Global Compact, UNCTAD, UNEPFI, PRI 2015)

By virtue of following Shariah, Islamic finance is seen to have a natural alignment with the concept of responsible financing and sustainable development. This is because IFIs are obligated to conduct their operations in line with moral consciousness where they should not solely focus on self-gains but consider the impacts on the society as well (Dusuki and Bouheraoua 2011).

Islamic finance, when correctly applied, allows achieving several benefits to the society, making it perceived as an ethical mode of financing. These benefits include channeling of funds for economic growth, reducing unethical activity that causes societal destruction, reducing excessive debts, increasing stability in financial markets, among

others. Islamic finance also allows Muslims, who may otherwise be excluded from the financial sector due to religious reasons, to fulfil their obligations according to Shariah, contributing to social welfare and financial inclusion (Olanipekun et al. 2015). In addition, Dusuki and Bouheraoua (2011) state that Islamic finance allows achieving one of the main objectives of Shariah which is the preservation of wealth. Islam gave an important status to property and wealth, encouraging its preservation, circulation, and development to attain societal welfare. This is seen for example in the saying of the Prophet Muhammad (saw): "If anyone revives dead land, it belongs to him, and the unjust root has no right" (Muwatta Malik, Book 36, Hadith 1430). Accordingly, through fair and just financing and investment transactions, Islamic finance allows circulating and developing wealth, contributing to the attainment of balanced societies.

Various Islamic financial instruments are tailored to contribute to the attainment of sustainable development, among which two of the most important are Islamic social finance and Sukuk. Islamic social financing instruments, Zakat and Waqf, help in redistributing wealth in the society where Zakat is said to be a means to purify wealth by allocating a specific amount for distribution in charity or Shariah-approved investments and Waqf is given as charity in the form of Qard Hassan (interest-free loans) or a piece of land or equipment to people, community, educational institutes, health, and/or agriculture over a long period of time. This helps in achieving SDGs by maintaining the balance in the society through uplifting the deprived, reducing the pressures of debts and costs, and preventing harms. Sukuk are also another important instrument. These refer to Islamic notes that are used as an alternative to conventional bonds and which grant holders an ownership in a certain asset allowing an entitlement to a certain revenue/income. Sukuk play an important role in infrastructure and development financing, having the potential to address several SDGs among which some are quality education, clean water, and sustainable cities (OECD 2020).

Some other Islamic financial instruments that can potentially contribute to sustainable development include equity-based financing (Musharaka and Mudaraba), Islamic micro-finance, Takaful (Islamic insurance), and Islamic financial technology (FinTech) (Alawode et al. 2018). Table 3 below outlines the definition of each of these instruments and their role in attaining sustainable development.

Through its underlying values that are based on Shariah principles and the various tailored instruments it provides, Islamic finance is thus considered an important and viable tool for achieving sustainable development.

The role of Islamic finance in attaining sustainability has been further accentuated in the recent COVID-19 pandemic. The pandemic that has hit the world in early 2020 caused important economic and social destruction globally; the high number of human losses, the exhaustion of health systems, and the important containment measures caused a global economic recession and worsened socio-economic inequalities, especially in poorer countries. Governments and central banks globally took several actions to lessen the economic and social impacts, including expansionary monetary policies, deferment of loan payments, and support packages for households and businesses. However, while these responses allowed alleviating partly the effects of the pandemic, they only constituted short-term responses, mostly consisting of debt, not allowing for a sustainable recovery. Indeed, these responses result in the accumulation of debt by countries in the

long term, prompting future potential crises and socio-economic inequalities as economic growth is financed by unsustainable means. In this context, Islamic finance, through its ethical and value-based proposition, emerges as an alternative financing model that allows for economic recovery as well as the attainment of sustainable long-term resilience (Islamic Development Bank [IsDB] 2020).

Islamic finance is based on several precepts that allow facilitating economic recovery and resilience post-crisis. Firstly, the prohibition of riba allows controlling the growth of debt in crisis responses as debt taken is not subject to interest charging. This reduces the burden on debtors and allows synchronizing wealth creation with economic activity, preventing the promotion of other potential crises such as sovereign crises. Second, the principle of risk-sharing in Islamic finance decreases the concentration of debt with specific economic agents which allows a better absorption of losses during the downturns and a lessening of the effects of non-payment on the economy. Thirdly, social obligations, such as Zakat, allow distributing wealth fairly in society, supporting vulnerable groups and alleviating the adverse crisis impacts on them during and after crises (IsDB 2020).

The various Islamic financial instruments previously discussed can tackle the drastic economic and social impacts of the pandemic in both the short and long terms. Zakat and Sadaqah play an important role in the short-term response as they allow for immediate benefits and are targeted to vulnerable groups, while Waqf and Sukuk facilitate a long-term resilience by mobilizing resources and tackling social issues. In addition, Islamic microfinance, Islamic social finance instruments, and Islamic fintech solutions allow increasing financial inclusion and advancing capital for micro, small, and medium enterprises and more vulnerable groups, which are severely hit by the pandemic, relieving inequalities in societies and supporting long-term economic growth (Rehman 2020).

4   Conclusion

The concept of sustainable development has been emerging since the 1980s, gaining wide attraction by the public and policymakers alike. However, while many refer to the origins of sustainable development to that period, it is found that the concept is intrinsic to the teachings of Islam which was developed since the 700s. Given that, Islamic finance, an alternative mode of financing to the conventional system, is regarded as a key tool for the attainment of sustainable development given its basis on Shariah that calls for the same values. A large debate exists today though on whether IFIs are playing that role and contributing to the attainment of sustainable development in general, and the UN SDGs in particular. In this paper, we aimed to take a deeper look at this question through an understanding of the concept of sustainable development from a Shariah perspective and critically assessing the role played by the IFSI in its attainment.

Our study finds that Islam emphasizes the concept of sustainable development through its dictation of the role of mankind as vicegerent on earth and his obligation to wisely manage the resources bestowed on him by Allah (swt) while not inflicting any harm to the society, environment, or the economy in the process. Maqasid Al Shariah, which aim for the attainment of Maslaha of the society, are thus aligned with the UN SDGs and it is even argued that a model of sustainability based on Maqasid is more robust than the western view where the concept of accountability to the Creator is missing. In line with this, Islamic finance, which is based on Shariah, represents an ethical

and responsible mode of financing which aim for attaining societal benefit through value-based activities and tailored instruments.

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The Impact of the IFRS 16 Adjustments "Coronavirus-Related Lease Contracts" on the Financial Performance (Royal Jordanian Case Study)

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Abstract. The study aimed to clarify the impact of the IFRS 16 Adjustments (Coronavirus-related lease contracts) on the financial performance (Royal Jordanian case study). The descriptive-analytical method was used as the quarterly data were collected from the financial reports of the Royal Jordanian for the period (first quarter, 2019 - second quarter, 2021). In addition, the SPSS was used to analyze the data by applying the accompanying one-way variance model (ANCOVA) and knowing the size of the effect from the Eta Square. The results showed that there is a significant effect of the privilege of adjustments of the IFRS 16 "Coronavirus-related lease contracts" on the financial performance. As well, there is a significant effect of the privilege of the IFRS 16 adjustments on each of the current ratio, the quick ratio, the cash ratio, the debt to assets ratio, plus to the accounts payable turnover ratio. Conversely, the results showed that there is no significant effect of the debt to equity ratio. Accordingly, the study recommended measuring the impact of the IFRS 16 adjustments during the Corona pandemic on the Royal Jordanian by using other financial ratios. In addition, the researchers recommended conducting more studies on the IFRS 16 adjustments.

Keywords: IFRS 16 · IFRS 16 adjustments · Coronavirus · Financial performance · Royal Jordanian

1 Introduction

Lease contracts, whether operational or financing, are one of the important sources of financing that are used by companies to support their business [8]. In view of the importance of leasing contracts in the financial structure of companies, the International Council issued on 28/5/2020 an adjustment to the IFRS 16, which took into account the impact of the Corona pandemic (Covid-19) [16]. The adjustment concentrated on preparing the financial statements in a way that helps the lessee in light of the COVID-19 without affecting the lessor [16]. In a related context, the financial factor is the main reason for the entities' success, and the financial statements are the main source of

information for stakeholders who are interested in analyzing the financial statements to help themselves in making wise decisions and exploring new opportunities for investment [13].

In order to benefit from the information contained in the financial statements, users resort to use financial ratios that provide them with a scientific translation of a set of financial data [9]. In this vein, the liquidity ratios[1], the efficiency ratios[2], and the leverage ratios[3] are among the most important financial performance indicators used by stakeholders [9]. According to the aforementioned, it is necessary to study the reflection of the IFRS 16 adjustments that related to the COVID-19 on the financial statements of companies to ensure the efficacy of these adjustments in achieving the desired goals.

1.1 Problem and Question of Study

Companies that rely on leasing assets have suffered from major financial problems during the COVID-19 due to the suspension of business in most countries of the world, especially airlines companies. In order to mitigate the negative consequences of the COVID-19, adjustments were made to IFRS 16, which regulates leasing contract transactions at the level of all countries of the world. Making the aforementioned adjustments without ensuring their effectiveness does not help in addressing the negative effects of the COVID-19, especially in the case of major companies at the level of countries that face major financial problems such as Royal Jordanian.

COVID-19 has affected the work of Royal Jordanian greatly, in terms of a decrease in the number of travelers and the suspension of travel movement. Consequently, Royal Jordanian incurred huge financial losses, since the company leases planes and the rent of these planes is commensurate with the volume of operation. Thus, the operating volume has decreased compared to the high rent. In line with this pandemic, the International Council has issued an adjustment to the IFRS 16 (Lease Contracts) to mitigate these effects on the Royal Jordanian and companies facing similar circumstances around the world. Therefore, the following questions arise:

R.Q. Is there an impact of the IFRS 16 adjustments "Coronavirus-Related Lease Contracts" on the financial performance of Royal Jordanian?

1.2 Aims of Study

The current study aims mainly to ensure the effectiveness of IFRS 16 adjustments, as a response to the negative consequences of the COVID-19, and the reflection of these adjustments on the financial statements of the Royal Jordanian. The results of the current study may highlight the strengths and weaknesses of the IFRS 16 adjustments, and guide Royal Jordanian to some available solutions to mitigate negative financial results in its financial statements.

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[1] Liquidity ratios describe the company's ability to meet its current obligations.

[2] Efficiency ratios describe the extent to which the company uses its investments in assets in order to produce sales.

[3] Leverage ratios describe the degree to which debt is used to finance purchases of the company's assets.

1.3 Significance of Study

The importance of this study lies in shedding the light on the adjustments made to the IFRS 16 due to the COVID-19 and their impact on the financial performance of the Royal Jordanian, specifically liquidity indicators, efficiency ratios, and financial leverage ratios. Thus, it is possible to ascertain the efficacy of the adjustments made to the IFRS 16 and if there are some shortcomings associated with these adjustments.

2 Literature, Theoretical Framework and Developing Hypotheses

The revised IFRS 16 relating to lease contracts is likely to have a significant impact on the financial statements of many companies over world. In this regard, [17] has found that the IFRS 16 affects positively the financial performance of Slovak IFRS adopters. In addition, [16] has concluded that the potential difference in the accounting treatment of lease concessions between lessees could be reduced by disclosing the effect of applying the practical expedient under the adjustment in IFRS 16 Lease Contracts. Further, [10] has deduced that the application of IFRS 16 lease contracts standard limits the financing gap and its implications for the quality of future cash flows. Moreover, [15] has discovered that the application of IFRS 16 has a positive impact on the return on assets, return on equity, and earnings per share. Furthermore, [2] has found that the application of IFRS 16 does not contribute to improving the suitability of financial information for users of financial reports in the Algerian business environment. As well, [7] has concluded that accounting conservatism affects negatively the items of the statement of financial position, whether before or after the application of IFRS 16 in the airlines' industry.

As for the financial performance, the results of the literature varied according to the different aspects studied. In this regard, [12] has found that the financial performance of entities is sensitive for the BSC perspectives, especially the financial perspective, which indicate that the financial statements are subject to change based on relevant surrounding factors. In this vein, [4] supported [12] results as they have discovered that the implementation of IFRS 16 may lead to significant increase in the amounts of balance sheet, the gross profits, and the leverage ratios. Similarly, [8] have deduced that the application of IFRS 16 leads to increase the leased assets, financial liabilities, and decrease the equity in the balance sheet. While in the income statement, the profit before income tax and the finance costs increase. Finally, [5] have concluded that the implementation of the new IFRS 16 will influence the volume of information presented in financial statements, which will be reflected on the financial ratios of a lessee. All these results imply that the financial statements and performance of entities will be affected by the new adjustments of the IFRS 16.

2.1 Theoretical Framework

Based on the results of previous studies, and given that the adjustments of IFRS 16 - related to lease contracts - came as a result of the emergence of COVID-19, and to mitigate its effects on companies, there is no doubt that these adjustments will affect the financial performance of companies that depend on leasing their assets.

Based on the contingency theory, contingent circumstances - such as COVID-19 - may affect the operations, the standards, or the environment of entities, which require these entities to adjust their processes or standards to ensure their adaptation with these contingent circumstances and to ensure the achievement of their goals. Thus, adjusting the IFRS 16 would mitigate the negative effects and consequences of COVID-19 [1].

Given that Royal Jordanian is one of the major Jordanian companies that depend on leasing its planes and suffers from poor financial performance, the current study presents the following hypothesis:

Null. R.H. There is no statistically significant effect of the IFRS 16 "Coronavirus-Related Lease Contracts" adjustments on the financial performance in Royal Jordanian.

2.1.1   Model of Study

According to the prior hypothesis, Fig. 1 shows the model of current study.
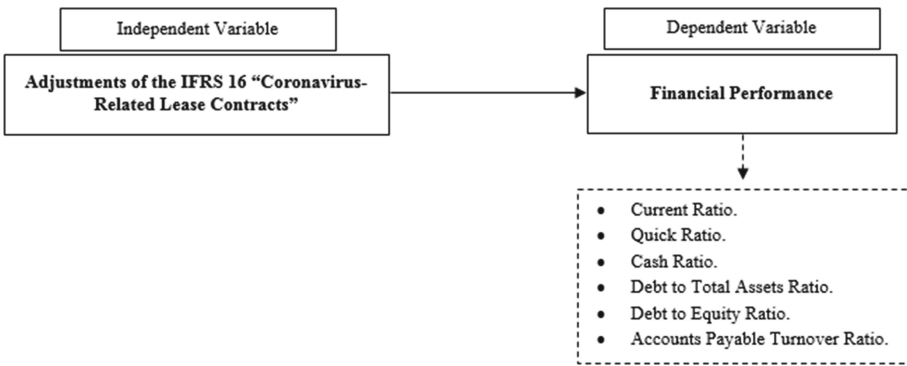
Fig. 1. Model of study

Since the financial ratios reflect the financial performance of entities, the researchers used the most used ratios that represent the volume of assets, liabilities, and owners' equity in the financial statements instead of using the profitability ratios. This is due to the fact that the adjustments of the IFRS 16 came to mitigate the negative consequences of COVID-19 on the assets, liabilities, and owners' equity of entities. Accordingly, the current ratio, the quick ratio, the cash ratio, the debit to total assets ratio, the debit to equity ratio, and the accounts payable turnover ratio were used.

3   Methodology of Study

The current study relied on the descriptive analytical approach. Accordingly, to achieve the objective of the study, the researchers calculated the financial ratios under study for the study sample company, relying on rent adjustments as shown in the quarterly financial statements of the Royal Jordanian. In addition, the researchers compared the calculated financial ratios before and after the adjustments to know the effect of the

IFRS 16 "Leasing Contracts" adjustments on the financial performance of the Royal Jordanian. The selection of Royal Jordanian as a case for the current study came from the fact that Royal Jordanian is one of the biggest Jordanian companies that relies on lease contracts to conduct its operations.

3.1 Statistical Methods Used

Excel software was used to calculate the arithmetic mean and standard deviation of the data collected from the annual reports of the Royal Jordanian company. The calculation results displayed in tables and graphics. Then, the researchers used the statistical analysis program (SPSS) to analyze the Royal Jordanian data collected from the quarterly reports after it was processed and recalculated the financial ratios without applying the IFRS 16 adjustments, and described them statistically as the arithmetic mean and standard deviation. Finally, the researchers made the Levin test, and tested the study hypotheses through the accompanying one-way analysis of variance (ANCOVA).

4 Data Analysis and Results

In addition to the descriptive analysis, the researchers relied on testing the correlations between the financial ratios for the years from 2019 up to 2021.

4.1 Results of Descriptive Analysis

In order to investigate the effect of the privileges of adjusting the IFRS 16 during the COVID-19 period, the values of all financial ratios under study were recalculated without applying the privileges of the IFRS 16 during the COVID-19. Table 1 shows the values of the arithmetic mean and standard deviation of the study variables before and after applying the IFRS 16 during the COVID-19.

Table 1. The mean and standard deviation of the study variables

Variable/ratio	The mean before adjusting the IFRS 16	The standard deviation before adjusting the IFRS 16	The mean after adjusting the IFRS 16	The standard deviation after adjusting the IFRS 16
Current ratio	0.686	0.055	0.603	0.112
Quick ratio	0.288	0.091	0.247	0.106
Cash ratio	0.252	0.090	0.235	0.089
Debt to assets ratio	0.965	0.135	0.934	0.087

(continued)

Table 1. (*continued*)

Variable/ratio	The mean before adjusting the IFRS 16	The standard deviation before adjusting the IFRS 16	The mean after adjusting the IFRS 16	The standard deviation after adjusting the IFRS 16
Debt to equity ratio	−4.131	29.506	−2.554	28.901
Accounts payable turnover ratio	0.368	0.062	0.294	0.074

According to the descriptive metrics in Table 1, it can be noted that the means of all study variables before adjusting the IFRS 16 were greater than the means after adjusting the IFRS 16, with the exception of both the accounts payable turnover ratio and the debt to equity ratio. Through the results, it can be noted that a significant increase in the standard deviation of the debt to equity ratio, due to the fact that the company obtained a loan of 50 million dinars on May 18, 2020 (Royal Jordan 2020).

4.2 Results of Levene's Test

The purpose of applying the Levene's test is to assess the equality in the differences or the variances of a calculated variable for two or more groups, and the null hypothesis of the test assumes that there are no differences in the variance at the level of significance $\alpha \geq 0.5$.

Table 2. Values of Levene's test

Variable/ratio	Statistic value	Significance
Current ratio	0.150	0.826
Quick ratio	0.194	0.665
Cash ratio	0.437	0.517
Debt to assets ratio	0.372	0.549
Debt to equity ratio	0.123	0.956
Accounts payable turnover ratio	0.000	0.985

Based on the results in Table 2, it can be noted that all the statistical significance values are greater than 5%, and therefore the alternative hypothesis can be accepted, which states that there are differences for the variable between the two groups; before and after the adjustment of IFRS 16.

4.3   Results of Testing Study's Hypothesis

The main null hypothesis of the current study stated, "There is no statistically significant effect of the IFRS 16 "Coronavirus-Related Lease Contracts" adjustments on the financial performance in Royal Jordanian". To answer the hypothesis of the study and to identify the significance of the differences in the value of the financial performance before and after the application of the adjusted IFRS 16, one-way analysis of variance (ANCOVA) was used. Table 3 shows the results of ANCOVA test.

Table 3. One-way variance analysis (ANCOVA), to examine the variances in the application of the IFRS 16 adjustments to the financial performance of Royal Jordanian

Source	Sum of squares	DF	Mean square	F-ratio	P-value	Sig.
Model	194.571	1	194.571	67.48	0.001	0.413
FP	0.065	2	0.032	78.51	0.000	0.624
Error	0.104	7				
Total (Adj.)	208.824	10				

The results of one-way analysis test (ANCOVA) in Table 3 show that there is a statistically significant difference between the financial performance that was calculated after the adjustments of the IFRS 16 and the financial performance that was calculated before the adjustments of the IFRS 16. In this vein, the F value was (78.51) which is a statistically significant value at the level of significance of 1%. In addition, Eta Square was calculated to find the size of the effect of adjusting the IFRS 16 on the financial performance. Eta Square value (0.624), which is mean that the adjustments of the IFRS 16 explain about 62.4% of the variance in the value of the financial performance. Consequently, the null hypothesis is rejected and the alternative hypothesis is accepted, which states, "There is a statistically significant effect of the IFRS 16 adjustments on the financial performance of the Royal Jordanian".

Except for the debt-to-equity ratio, the results of One-way variance analysis (ANCOVA) showed that all ratios under study have a statistically significant relationship with the adjustments of the IFRS 16.

4.4   Discussion of Results

The study found a statistically significant impact of the adjustment of the IFRS 16 on the financial performance of Royal Jordanian during the year 2020 and the first and second quarters of 2021. Meaning that the financial performance of the company was better compared to the failure to apply the privilege of the IFRS 16 adjustments. This result is consistent with [17] who found a positive effect of the application of the IFRS 16 on the financial performance of Europe companies. Similarly, it was found that the adjustment of the IFRS 16 has a significant positive impact on the current ratio, quick ratio, cash ratio, debt-to-assets ratio, and accounts payable turnover ratio. Meaning that the application

of the IFRS adjustments affect positively the aforementioned ratios. These results are in line with the results of [15] who deduced that the current ratio and the debt-to-assets ratio are became better after applying the adjustments of the IFRS 16. As well, [3] who concluded that the adjustments of the IFRS 16 are mitigated the negative impact of COVID-19 on the quick and cash ratios. In addition, [14] has found that the accounts payable turnover ratio has improved for the better after applying IFRS 16. Finally, [11] have found that the current ratio and the debt to total assets ratio were slightly better after implementing the adjustments of the IFRS 16. All these studies justified that the positive affect of the IFRS 16 adjustments is a result of eliminating the rigid financial treatments regarding the recognition of the leased assets in the financial statements and taking into account the exceptional circumstances resulting from the emergence of the COVID-19.

On the other hand, the results showed that there is no effect of the IFRS 16 adjustments on the debt-to-equity ratio. This result imply that the debt-to-equity ratio was lower in the case of applying the concession of financial leasing compared to if the company did not benefit from the privileges of adjustments of the IFRS 16. This result is consistent with [15] who found that the debt-to-equity ratio did not improved either before or after the adjustments of IFRS 16. In addition, [6] have concluded that the IFRS 16 adjustments did not mitigate significantly the negative influence of COVID-19 on the debt-to-equity ratio. Regarding the insignificant effect of the IFRS 16 adjustments on the debt-to-equity ratio, the researchers pointed out that the absence of such this relationship is due to the fact that the IFRS adjustments came to mitigate the negative effects of the COVID-19 on the financial statements and not to cancel or distort the volume of debts in companies.

5   Recommendations of Study

Based on the findings of the study, and a review of previous related literature, the researchers recommend the following:

1. Conducting more studies to investigate the impact of the IFRS 16 adjustments and its privilege during the COVID-19 on other companies, which rely heavily on lease of assets.
2. Measuring the impact of the IFRS 16 adjustments and its privilege during the COVID-19 on the Royal Jordanian using other financial ratio.
3. Conducting further studies on the IFRS 16 adjustments "Leasing" and compare the results of the future studies with the results of the current study.

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Impact of Board Characteristics
on the Corporate Dividends Payout: Evidence
from Palestinian Stock Market

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Abstract. This research aims to examine the impact of board characteristics on
dividends payout policy of companies listed on the Palestine Stock Exchange
during the period 2013 to 2019 with a total number of 311 firm-year observations.
Governance attributes included in this study are gender existence, board size,
CEO duality, independence director, and institutional investors. The study uses
dividend per share as dependent variable. A robust least square regression model
used to evaluate the empirical model in the current study using panel data analysis.
Data was gathered from the (PEX) website as well as the annual reports of the
companies sampled. The research found that at the 5% level of confidence, there
is a positive significant relationship between board size, gender participation, and
dividend per share. Furthermore, at the 5% level, there is a significant positive
relationship between firm size, profitability, audit firm, and DPS. Firm leverage,
on the other hand, has a negative impact on the DPS at the 1% level of confidence.
The research's main contribution in focuses data analysis on the final result of
firms operations which is the core concern of investment decisions, it may also
assist legislative and official institutions in this field in making their best efforts
to establish governance codes in the manner that society wishes.

Keywords: Corporate governance · Board characteristics · Dividends · Payout
policy · Board size · Board independence

1 Introduction

Palestinian economy consists of many kinds of projects, such as individual projects,
partnerships, limited privacy companies and limited public companies. The public shar-
ing companies have a material part of Palestinian resources, which allow to concentrate
searching efforts to improve this kind of projects in all respects in which enhancing
investors' confidence, as well as expanding this kind of firms instead of investing large
number of resources in banks, in which reflecting on high returns, more resources and
more investments as part of sustainable development. From this point of view, there
is a need to do more and more care to the public held sharing firms, this caring sup-
posed to contain all respects of these firms and the various environmental effects like

law, governance, and social environment. The Companies Law No. (12) Of 1964 and its subsequent amendments were designed to give the right of managing companies to the majority of its shareholders [36]. The Palestinian Companies Law of 2008 reaffirmed the determination of a shareholder's number of shares in a company that allows him to compete for membership in the Board of Directors to be more than 10% of total firms share, or as the company's internal system indicate, this system prepared by a committee of the company's founders, who normally own the majority of shares. As the result of corporate performance for the majority of investors are the dividends, this study is conducted to examine the impact of board characteristics on dividends pay-out, in companies listed on the Palestine stock exchange. According to the Companies Law of 2008, (Article No. 216), the public shareholding company may not distribute returns to its shareholders except from its net profits realized after settling its retained losses from previous years [36]. The company must deduct 10% of its net profits to the compulsory reserve account, and it is not permissible to distribute any profits before this deduction is made. According to the agency theory and the conflict between management (agent) and shareholders (principal) interests, the goal of board of directors is controlling on CEOs performance which is supposed to achieve shareholders' interests in the first place by maximizing firm value which is reflected in more profits, more cash and more dividends. Some studies have confirmed the existence of relationships between boards characteristics and firm's performance by multi-indicators to measure. Researchers like [1] assures that there is a negative significant relationship between Institutional Investors, audit firm, and independent director and dividend per share (DPS) on one side. On the other side assuring that board of director size and firm profitability positively affect the DPS. Furthermore, Duality of CEO and chairman position, director nationality, firm size and financial leverage were found to have no impact on DPS, [1]. On the other hand, some studies like Chen, and his partners assure that firms with relatively high institutional ownership, and those with strong boards, consistent with new CEOs receiving higher pay as compensation for greater dividend pressure, [2]. As these studies and many others, referred to later on in this research, emphasis on the relationship between these factors, and as the overall objective of firms is to maximize their owner's wealth through maximizing total profits and return on equity, there is a need to search the issue of the relationship between board characteristics and dividends pay out. Since the concepts of the board characteristics in the companies are multiple and varied in measure, the researchers notes that reviewed studies handled different variables such as size, institutional investors, and directors independently, [1]. Accordingly, this study considered the impact of these variables on the firm's dividends pay-out (DPS) of companies listed on the Palestine Exchange commission, in other words, the aim of this study is to examine any impact of board's characteristics on dividends pay-out (DPS) as represented by dividends per share of listed companies in Palestine during the period of 2013 to 2019. The concern is focused on analyzing the listed firm's operation results as they represent the core concern of investment decisions and assist legislative and official institutions in this field in making their best efforts to establish governance codes in the manner that reveals the society's best interest.

2   Literature, Theoretical Framework and Developing Hypotheses

According to the agency theory, there is a conflict of interests between shareholders and managers. Since the managers works to get goals may not necessarily the same goals of best interest of shareholders, and even sometimes opposed them, it was the duty of the Board of Directors to exercise control over the work of the management and formation of committees that assisting in achieving its role. Being a board member means being able to influence managerial decisions, and accordingly are deemed the core of related parties as to FASB standard No. 57. Therefore, it is necessary to examine the impact of the characteristics of the board of directors in public shareholding companies on the real financial performance of these companies, which is the actual performance that investors notice directly through annual dividends. The study found that the recent attempts to legalize the Palestinian economy focused on the formation and building of effective boards of directors supported by practical committees, each of which was character-ized by conditions and characteristics to achieve a sufficient level of transparency and integrity as well as building public and investor confidence in the Palestinian economic environment. The main objective of CCG code of 2009 is to improve the quality of board practices, competitiveness, firm value, stakeholder's confidence and more. These results are supposed to be achieved by the end performance of the firms as measured by a variety of standards and ratios, such as dividends per share declared by the firms which is the main factor that affects investment decisions. The main concern of CCG of 2009 is about the style of managing and controlling of corporate, and the abilities of board of directors to set policies, strategies and objectives that agree with shareholders' and stakeholders. The aggrieved shareholder has the right to sue the chairman and members of the board of directors for every violation they commit against laws, regulations, instructions, or the company's system [37]. CCG of 2009 recommends the existence of two independent members of the Board. This may lead to the existence of Boards with no independent member. An independent member means a member of the board of directors who does not have any relationship with the company other than his membership in the board of directors. Some researchers assure the impact of board characteristics on firms' per-formance and what effect these characteristics have, such as the talking about negative significant impact between, institutional investors, and audit firm on dividend per share (DPS), and a negative significant impact of independent board directors on DPS. On the other hand, the size of the board of directors and firm profitability positively affect the DPS. By examining the impact of Duality of CEO and chairman position, the director's nationality, firm size and financial leverage on DPS, it was found that there is an impact on DPS in industrial corporations in Amman stock exchange, [1]. assured that Board size, executive director, institutional investors, foreign ownership and return on equity have significant influence on dividend payout decision in Pakistani firms [3]. This means that the issue of board characteristics in any firm in the world may play a positive or negative impact with respect to agency theory. This means that the factors do not have impact in specific political, economic or social circumstances may have notable impact in others.

It was also found that Board structure has little impact on the performance of a small firm, in a sample of Finnish small to medium-sized enterprise, [4]. This implies a probability of large impact existence of board characteristics in case of large firms. Board

characteristics have shown a significant positive relationship with dividend payout in Kenya and Ghana, while corporate governance measure show significant negative impact on dividend payout in Nigeria, [5]. In this context, one may say that any indicator or component of the board of directors' characteristics may have positive or negative impact with respect to the geographical region, or political system, e.g., it was noticed that there is a significant difference between the board characteristics in local -owned banks and that of foreign-owned ones in Tenzania. And it was also noticed that there is a similar difference in the profitability of these banks, [6]. This implies that foreign experience has a role in building firms' performance. Board characteristics have a positive impact on both a firm's propensity to pay dividends and the level of payouts in firms with CEO duality. On the other hand, it has a negative association in firms without CEO duality in Bloomberg professional services, [7]. Note here the duality of CEO converse the impact of board characteristics on dividends' intent and level, which means that CEO duality must be taken into account while searching these relationships. There is no significant relationship between performance and board characteristics represented by independence, gender, average tenure, and foreign directors in Indian banking sector, [8]. In other words, it was found that there is no impact of board characteristics on DPS. So, more and more indicators have to be taken into consideration through the completion of this study, as the same factors may have more than one result considering industry, geography, law and politics. There is an insignificant impact of board characteristics on operational performance in restaurant industry through Panel regression analysis. Whereas there is a significant positive relationship between board size and all measures of export performance, but not the position of inside director professional representation nor all measures of export performance of firms, using data from 221 exporting firms in turkey [9].

Board gender characteristic significantly increases the dividend payout when weak governance exists, suggesting that female directors use dividend payouts as a governance device, [2]. This suggestion assures the positive impact of women existence in the board on one side, and on the other side, it assures that in case of weak governance the impact will increase at a high rate [10], found that board gender diversity has a negative relationship to cash dividend payments in all emerging economies; State-ownership positively moderates the relationship between gender diversity and dividend payments [11]. Negative link between board gender diversity and dividend payments is more pronounced during the financial crisis, but the moderate role of state-ownership did not work significantly during the financial crisis, [11]. This means that the economic circumstances may moderate the impact of board gender. On the other hand, some studies found that there is no relationship diversity of family directors and Spanish family firm's performance, [12, 13]. Furthermore, some researchers assured that boards with women were associated with high profitability, [6]. Board gender positively impacts both a firm's propensity to pay dividends and the level of payouts, [7]. According to this finding, this variable deserves to be considered in this study as an independent variable. It could be argued that board characteristics indicators play an important role on performance of the firms; they may affect directly or indirectly dividends pay-out by the firm, [2]. That means board characteristics have a very important role in increasing shareholders wealth in general.

Precisely gender in the board is found to have a positive relationship with performance and dividends, [13]. So, the first hypothesis of this study is:

Hypothesis 1: The board gender affects positively Dividend pay-out in companies listed on Palestine Exchange.

The profitability indicator related to the dividends pay-out, because it's hard to see loser firms make dividends to shareholders, because of the suggestion which says that the size of board of director and firm profitability positively affects the DPS in Jordan, [1], which means even more members in the board may do more professional discussion lead to more correct decisions which lead to more good performance, more dividends at the end. Board size exhibits significant positive relationship with dividend payout in Kenya and Ghana, [5]. This assures the importance of studying the effect of board size on the DPS in Palestinian firms. [14].

On the second side, the informativeness of annual accounting earnings are not related to board size in the Greek capital market, [15]. This suggestion said that information content in annual report is not affected by the increase in board size, which implies that a probability of earnings management still exists even though the board size is large, which might be the result of poor performance. In other words, some firms may disclose large board size, high profits through periods and no dividends actually. So, this study may find a negative relationship between board size and dividends pay-out at the end. And upon these arguments, the researchers will take board size as significant independent variable in Palestinian economic case.

The same argument was seen in searching about board size. If somebody looked at various results and suggestion of the prior research, may conclude some ideas about the effect of board size on the DPS. Where many researchers assure positive relationship to the dividends, [15], say that board size does not reduce agency likelihood to make better performance which is reflected in dividends at the end. Whereas [14], argue that large and diverse board of directors contributes positively to the performance [6], and [1], found that board size positively has impact on (DPS) in Jordanian listed firms, and this economy is near to our economy by culture, education, and religion [1]. So, the second hypothesis of this study is:

Hypothesis 2: Board size affects positively Dividend's pay-out in Companies listed on Palestine Exchange.

Accordance to CCG of (2009), it is preferable for the board not to issue any general mandate to anyone, but in case that is required, the mandate must be specific in subject, duration and time of presenting the results to the board. It is also recommended that the chairman of the board or any other member do not exercise executive duties in the company. Duality of CEO and chairman position, director nationality, firm size and financial leverage were found to have no impact on DPS at the 5% level of confidence in Jordanian listed companies, [1]. Some researchers suggest same dividends decision with respect to duality of CEO and chairman position. Other researchers assure that there is a positive impact of CEO duality on Spanish family firms, [13]. Thus, there is another suggestion which assures the positive impact of these variables like that which indicates a positive association between board characteristics represented by independency,

experience, average tenure, CEO duality, etc. and dividend pay-out as made by [7].The separation of chairman of board of directors and CEO positions has a significant positive impact on export performance [9]. Here, the researchers do not examine the relationship between CEO duality and dividends pay-out, but they found negative impact on export performance which is part of all performance. And as it is known, the dividends decision come as a result of good performance containing stability situations; the probability of negative relationship with dividends still exists. In the same way, lots of arguments argue about CEO duality. These suggestions are a sample of many findings, researcher had reached, which helped to conclude hypotheses about the effect of CEO duality on DPS. Upon these different results, it might be argued that it is nearly difficult to expect the impact of CEO duality on Palestinian economic level. Because external CEOs have more desire to do more actions to save their jobs, they may make dividends and finance the new projects at a less cost as indicates [16]. Accordingly, the third hypothesis in this study is:

Hypothesis 3: CEO duality affects negatively Dividend's pay-out in companies listed on Palestine Exchange.

Accordance to CCG of (2009), the members of the board shall form a remuneration committee, including at least one of its independent members. And the board comprises a corporate governance committee of its members, which consists of the chairman and two part-time members working for the company. There is a negative significant impact between independent director and DPS at the 5% significance level in Jordanian listed firms, [1]. This means that independent director's existence in the board may reduce dividends pay-out. In the same way some researchers assure that greater board independence does not have a positive influence on firm value, [17]. This means that the independent directors may exist increasingly in non-profitable firms and as the relationship between profitability and DPS is positive, there is a probability of a negative relationship between independent directors and DPS.

On the contrary Muller (2014), suggests that the board independence in the total number of directors has a significant positive impact on firm performance [18]. This explains, in the researchers' opinion, why CCG of (2009) demanded the existence of independent directors in some committees like audit committee, CCG of (2009).

In the same way, one could build his hypotheses upon prior research findings which argue for a negative effect of independent directors on Deserter than the suggestion of positive relationships between these two variables, and because of multi similarities between Jordan and Palestinian economy, the fourth hypothesis in this study is:

Hypothesis 4: Independent Directors negatively affect Dividend's pay-out in Companies listed on Palestine Exchange.

In accordance to the CCG of (2009), it is recommended that members of the board of directors have leadership qualities, as well as members who enjoy various experiences and skills commensurate with the nature of the company's work, and in a manner that ensures that the board performs its tasks with objectivity and high efficiency. On the contrary, [1], there is a negative significant relationship between Institutional investors and audit firm on the (DPS). This implies that institutional investors may not desire

achieving dividends, since the intent of their investment has different goals, so they reject the dividends decision, [19].

Whereas, in conformity with the CCG of 2009, some researchers assured that Directors from financial institutions can provide monitoring benefits, [17], which means that the firms which have an institutional investor may get free monitoring benefits in order to maintain high financial performance and ratios as well as DPS. Directors from financial intermediaries reduce earning management, and the board representation of active institutional shareholders reduces it further, [20]. This means that an actual and faithful disclosure has to be gotten in this case. Here someone may say that the final performance may be good and there is no need to do earning management, because of the suggestion which indicated that Institutional ownership positively influences dividend payout among South African and Kenyan firms, [5].

Another rational reasoning may appear about institutional investors in which suggest that the main reason of investing in this case is the style of financial management which may not allow high level of liquidity. Upon this suggestion some institutional investor may vote to retain the earnings or reinvest the extra cash in the firm, instead of dividing these earnings. Because receiving dividends may rise the liquidity and it must look for other investment opportunity. So, the fifth and last hypothesis in this study is:

Hypothesis 5: Institutional Investors in the board negatively affect dividend pay-out in companies listed on Palestine Exchange.

3   Control Variables

Accordance to the CCG of (2009) when forming a council, it is desirable to include new members from the council, in order to inject more experiences. By studying board directorship, CEOs characteristics, and firm's performance in Palestine, the empirical research indicates that CEO tenure, experience and political connections have a positive effect on firm's performance, [21]. Other indications assure that not all of the outside directors are equally effective in improving firm reputation, and that certain kinds of outside directors, especially business experts, help increase it, [22]. This means that ordinarily outside investors who got board membership may not do any effective change to the firm's performance, except those who have special experience. The informativeness of annual accounting earnings is positively related to the number of outside directors serving on the board, firms with a higher proportion of outside directors' report earnings of higher quality compared to firms with a low proportion of outside directors, [15]. That is; with outside directors in the board, good, faithful representation in the annual reports, and probably low level of earning management are expected. But this does not necessarily mean better performance or more dividends. Monitoring of abnormal accruals by outside directors as a whole, or by directors from financial institutions, is not more effective after the issuance of the Toronto Exchange's corporate governance guidelines of 1994, [20]. Here the researchers indicate that there is no positive impact of outside directors in decreasing earnings management in the case of Toronto Exchange corporate governance. This implies that the positive role of outside directors is supposed to be normal, but the problem may be in legislations. The proportion of foreign directors

in the total number of directors, as a characteristic of corporate board characteristics, has a significant positive impact on firm performance [18], which means that the existence of outside directors in the board will enhance the corporate performance, that may be reflected on dividends pay-out. This explains why some researchers take this factor as a variable in studying such relationships. The impact of outside boards on performance is negative in Spanish family firms, except when this comes from CEO duality, [13]. In other words, this may interpret these results by saying that the impact comes from CEO position in some cases, so the positive effect of outside directors is linked to CEO duality, which means that the goal may be achieved if the CEO is one of the members. There is a positive correlation between the board characteristics of high-growth option companies and the value of the company; and this relationship is maintained when more precise actions are taken. That may be reflected in the characteristics of the external directors such as the level of ownership of shares due to the external directors, and the number of other positions on the board occupied by external board members, [23]. This result indicates that the proportion of outside directors have a positive impact on firm value, so high performance is also reflected positively on dividends pay-outs. On the contrary [14] argue that firms with outside board members have lower growth rates and are less profitable [4]. Here the researchers indicate that the impact of outside directors is negative, but do not assure that low profitability and growth is the reason for outside existence. A higher proportion of outside board members decrease market-based performance, [24]. Another performance indicator has a negative impact of outside directors' existence. A large existence of outside directors on the board is negatively associated with export performance, [9]. The same about market indicators, as part of all firm performance. It is concluded that while some researchers found a positive impact on performance, others found negative impact. For this reason, this variable is taken as a control variable in this study. Earnings management does not decrease with the average tenure of outside directors as board members of the firm, [20]. This means that an average tenure will not reduce earnings management. On the contrary, tenure of outside directors is positively related to firm value, [23]. In other words, an average tenure has a positive impact on firm's performance, so this variable is taken as a control one in this study. Board characteristics, in terms of age and educational background of members influences economic performance, since graduate and senior directors exercise a negative influence on profitability, [25]. As tenure comes to reach a better position and to achieve this objective, education will be a material standard the researchers here talked about the impact of this variable.

Managers in weakly-governed firms are more likely to initiate customized dividends to meet outside large shareholders' needs while simultaneously using costly external capital to finance new investment projects, [16]. The indication of this is that probability of dividends pay-out does not come from better performance such as more net income and more liquidity position of the firms, but may come from management intent to obtain shareholders confidence by any way, in order to achieve personal interests. Individualistic CEOs are more likely to pay dividends, [26]. This is why it is explained earlier in the study that its objective is to examine board characteristics indicators on dividends pay-out, and not to test this impact on all firm performance indicators. There is a positive association between social capital and dividends, and this association is stronger for firms

with weak governance, [27]. The same discussion, some researchers say that there is no impact of average tenure on earnings management. Others say that there is a positive impact of average tenure on firm value. As these indicators are closely related to the performance and DPS is one indicator of firm's performance. The study will take this indicator as control variable. The researchers will not examine the impact of outside directors, because it is not a phenomenon in Palestine, but this factor will be taken as control variable in this study, as many researchers indicate its effect.

4   Methodology

4.1   Sample

To achieve the objective of the current study, our sample consists of financial and governance data collected for seven years from 2013 to 2019. This sample period covers most policy development related to governance practices in Palestine. Also, the year 2013 was selected because at the time of data collection, the 2013's annual reports were the oldest reports, which were still available for most firms. The sample consists of 43 companies listed on Palestinian stock exchange market. In our study, we use data from the selected annual reports (Arabic or English version) which are available on their websites, resulting in 311 observations. However, firms with missing data have been also excluded. Additionally, we have excluded companies with unavailable annual reports, either in Arabic or English version.

4.2   Measurements

This section concerns both dependent and independent explanatory variables in the proposed model. Our study investigates both the propensity for a firm to pay dividends and the dividend payout ratio. Following previous studies [1, 28], we also explore the impact of governance attributes on the dividend payout ratio by using the dividend payout ratio. This ratio is measured by dividends per share (DPS) which is dividends payout divided by the number of shares outstanding. We collect the information about dividend policy from the annual reports. As far as the explanatory variables are concerned, Table 1 presents the independent variables that are recommended to explain the extent of dividend payout policy. The data were manually collected from firms' annual reports and websites. To test the hypothesis, the researcher used robust least square regression estimation. A multiple linear regression model attempts to investigate the interrelationship between explanatory variables and the dividend payout:

$$DPS_t = \alpha 0 + \alpha 1 BODSIZE_{it} + \alpha 2 BODIND_{it} + \alpha 3 INSIN_{it} + \alpha 4 CEODUL_{it} + \alpha 5 BODNAT_{it} + \alpha 6 FSIZE_{it}$$
$$+ \alpha 7 FLEV_{it} + \alpha 8 PROF_{it} + \alpha 9 AUD_{it} + \alpha 10 GENdER_{it} + \alpha 11 FAMMAN_{it} + \alpha 12 AVTEN_{it} + \varepsilon$$

where
DPS: Dividends per Share for year t. (as amount).
Which DPS = dividends pay out for year\number of shares outstanding.
BODSIZE: Board size for year t.

BODIND: Percentage of non-executive directors for year t.
INSIN: Institutional investors for year t.
CEODUL: Duality of CEO and chairman position for year t.
BODNAT: Board Nationality for year t.
FSIZE: Firm Size for year t.
PROF: Firm Profitability for year t.
FLEV: Firm's financial leverage for year t.
AUD: Audit firm for year t.
GENDER: Gender ratio for year t.
FAMMAN: Management of family for year t.
AVTEN: Tenure of chairman for year t.
$\alpha 0$: Intercept.
$\alpha 1$–9: Variable's coefficients.
e: Error term.
t: Represents the time (year).

Table 1. Summary of the explanatory variables

Variable	Symbol	Definition	Reference
Board size	BODSIZE	The number of directors in the board	(Aloudat et al. 2019)
	BODIND	Percentage of independent directors in the board	(Aloudat et al. 2019)
	INSIN	Percentage of institution members in the board	(Abor and Fiador 2013)
	CEODUL	1 if CEO is one of the board members, 0 otherwise	(Suarez and Santana 2015)
	BODNAT	Percentage of non-Palestinian members	(Suarez and Santana 2015)
	FSIZE	Natural logarithm of total assets	(Aloudat et al. 2019)
	PROF	Return on total assets	(Hazaea et al. 2021)
	FLEV	Ratio of total debt	(Khatib and Nour 2021)
	AUD	1 if the auditor is one of the big four, 0 otherwise	(Aloudat et al. 2019)
	GENDER	Percentage of women in the board	(Chen et al. 2017)
	FAMMAN	By 1 if family firm, 0 otherwise	(Muller 2014)
	AVTEN	1 if the chairman was changed, 0 otherwise	(Orr et al. 2005)

5 Result and Discussion

5.1 Descriptive Statistics

The descriptive statistics analysis for all study variables including dependent, independent and control variables are presented in Table 2. The descriptive analysis includes the mean, standard deviation, maximum value, and minimum value for all variables.

Table 2. Descriptive statistics analysis

	Mean	Median	ST.DEV	Max	Min	Obs.
DPS	0.102	0.05	0.172	1	0	311
ROA	0.03	0.021	0.07	0.27	−0.62	311
LN total assets	17.73	17.59	1.81	22.38	13.70	311
Leverage	0.20	0.11	0.21	0.83	0.02	311
BIG 4	0.77	1	0.42	1	0	311
Gender	0.06	0.00	0.10	0.50	0	311
Bsize	8.92	9.00	2.17	15.00	4.00	311
CEOdual	0.32	0.00	0.47	1	0	311
INDDR	0.31	0.286	0.13	1	0.08	311
INSINVES	0.58	0.57	0.32	1	0	311
OUTSD	0.27	0.273	0.22	1	0	311
AVER TEN	0.12	0.00	0.33	1	0	311
FAM MANAG	0.34	0.00	0.48	1	0	311

Sample size (n) = 311 firm year observations from the period (2013–2019) as available data on Palestine stock exchange listed companies.

The Table 2 above provide some useful information about the variables, as follows:

Dividends per Share (DPS) has a mean of (0.1), with a standard deviation of (0.17), while the minimum value reaches (0) and the maximum value reaches (1).

The mean of gender existence variable is about (0.06) with a standard deviation of (0.1). On the other hand, the maximum value reaches (0.5) and minimum value reaches (0). This finding indicates most firms of the study sample don't have notable female existing factor resulting from small ratio of holding shares outstanding by female in our society, which may happen as a result of cultural factors. Board size variable mean is about (8.92) members with a standard deviation of (2.17) members, while the maximum value reaches (15) members, and the minimum value reaches (4) members. This finding includes most of the sample firms comply with corporate governance code which state that the board must consist of seven members at least. Independent director's variable mean is about (2.6) board members, with a standard deviation of (1.1) members, while the minimum value is (1) members and the maximum value is (7) members, whereas independent director's ratio statistics are (0.31), (0.13), (1), and (0.08) respectively.

This result indicates that most of the sample companies achieve the lowest level of governance code rules, which state that board, must contain at least two independent members especially in audit committee. Institutional investor's ratio in board statistics appear in the Tables 2, 3 and 4 which has a mean of about (58%) members of all board members, with standard deviation (32%) members, while the maximum value was (100%) members and the minimum value (0%) members. This means that most firms of the sample study were held in a large portion of its shares outstanding by the private or public institutions, more than the individual investors. According to the model of the study, dummy variables exist. Table 3 below shows the descriptive information about it.

Table 3. Description about dummy variables

Variable	Type	Frequencies	Percentage
Audit firm	Big four	239	76.85%
	Local	72	23.15%
CEO duality	Duality	101	32.48%
	No	210	67.52%
Average tenure	Tenure	38	12.22%
	Does not	273	87.78%
Family management	Family	107	34.41%
	Not	204	65.59%

Table 3 shows that nearly a third (32%) of CEO was dual to chairman or at least a member in the board of directors.

(77%) of firms in the sample was audited by big accounting firm, while just (23%) was audited by local auditors. But there are 88% of chairmen did not tenure through seven years, which indicates that most firms of sample may not comply with governance code in holding board elections each four years, or the elections were held in the event of a capital market recession, so the equity doesn't move. The last variable, family management, shows that 34% of the firms of the sample were held by families. This also gives evidence that capital market is actually has low activity.

6 Correlation Matrix

According to [1], if the correlation between independent variables is greater than 0.80 or 0.75 for any of them, you have a multicollinearity problem [1, 35]. In the model of this research, such an approach was used to discover multicollinearity problems: Pearson Correlation Calculator (correlation matrix).

Table 4 below demonstrates the Pearson correlation between the variables. In the correlation matrix, all of the correlation coefficients among the independent variables are less than 0.80, multicollinearity isn't a problem.

Table 4. Correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
DPS (1)	1.00												
ROA (2)	0.43	1.00											
LN TA (3)	0.17	0.09	1.00										
LEV (4)	−0.12	−0.16	0.58	1.00									
AUF (5)	−0.03	-0.09	0.41	0.30	1.00								
GEN (6)	0.02	0.12	−0.13	−0.06	−0.28	1.00							
BS (7)	−0.03	−0.05	0.50	0.24	0.13	−0.20	1.00						
DUA (8)	0.23	0.17	0.09	−0.29	−0.11	−0.15	0.04	1.00					
IND (9)	−0.13	−0.12	−0.07	−0.01	0.23	−0.16	−0.32	−0.20	1.00				
INS (10)	−0.16	−0.23	−0.04	0.12	0.37	−0.32	−0.03	−0.25	0.34	1.00			
OUTS (11)	0.02	−0.15	0.35	0.13	0.27	−0.20	0.03	0.45	0.12	0.04	1.00		
TENU (12)	−0.08	−0.06	−0.16	−0.10	−0.05	0.01	−0.11	−0.13	0.11	0.08	−0.15	1	
FM (13)	0.09	0.24	−0.25	−0.38	−0.37	0.31	−0.31	0.34	−0.13	−0.64	0.00	−0.02	1

Which: LNTA: firm size, LEV: leverage, AUF: audit firm, GEN: gender ratio, BS: board size, AUA: CEO duality, IND: independent directors, INS: institutional investors, TENU: average tenure, FM: family management.

Heteroscedasticity is referred to as a breach of homoscedasticity in this sense. The above condition has the effect of underestimating the coefficient estimate and, in some cases, making irrelevant variables seem important [29]. The homoscedasticity and independence of error terms were investigated in this analysis using the Likelihood Ratio test; the probability of residuals in the heteroscedasticity test using this approach should be less than 5% level of significance. The test of heteroscedasticity is shown in Table 5 below, and it indicates that there is no problem with heteroscedasticity, where the probability is less than 5%.

Table 5. Heteroscedasticity test

	Value	DF	Probability
Likelihood ratio	4277.5	46	0

The Durbin-Watson assay was used to support autocorrelation. The null hypothesis states that there is no autocorrelation in the regression analysis' residual values [38]. The Durbin-Watson statistic has a range of values between 0 and 4. Non-autocorrelation is indicated by a value near 2, positive autocorrelation by a value near 0, and negative autocorrelation by a value near 4. The test value in this analysis, as shown in Table 5, 0.42, is very close to zero, and the minimum value in the case of 12K, as shown in the Durbin-Watson parameter tables, is 1.86. The null hypothesis of non-autocorrelated errors is dismissed in favor of the hypothesis of positive first-order autocorrelation because the observed value of the test statistics is less than the tabulated lower bound.

Table 6. Durbin Watson test

| Durbin-Watson stat | 0.427156 | Prob (f-Static) | 0 |

Impact transmission is a significant source of autocorrelation, at least partly. The effect of deleting certain variables is a source of autocorrelation [30]. These reasons and others may produce a biased results by the study model. Because of the above reason, researchers used the Robust test, method of (S estimation), in order to avoid an impact of outlier's values in testing hypotheses as did [31, 38, 39].

7   Regression Analysis

In order to test the hypotheses of the study, a robust least square analysis was required to be done through S-estimation method. Let's see Table 7 below: Table 6 shows that panel data analysis through robust – least square method, S estimation, so these study findings were robust.

Table 7 shows that at the 5% significance level, there is a positive significant impact between independent variable gender existence in the board and DPS value (Z statistic $= +2.502$, probability $= 0.012$). This means that as the gender in the board increases, the DPS increases as well. So, the researcher reaches to accept hypotheses number one which indicates that gender existence affects positively the dividends pay-out ratio in the companies listed on PEX. This indication agrees with Chen et al. (2017) who says that firms with a higher proportion of female directors on their boards have higher dividend payouts, and where there is poor governance, the dividend payout rises dramatically [2], implying that female directors use dividend payouts as a governance tool. By this suggestion, the researcher can conclude that gender absence in the board of directors affect negatively DPS, which may lead legislation bodies in this field to increase the portion of women in the board as much as possible.

Table (4.7) also shows that at the 5% significance level, there is a positive significant impact between independent board size and DPS value (Z statistic $= +2.178$, Probability $= 0.029$). This finding shows that as board size increases, DPS increases as well. So, researcher will accept hypotheses number two which indicates that board size affects positively DPS in the companies listed on PEX. This indication agrees with [1], who says that size of the board of directors and the performance of the company has a positive impact on the DPS [1]. This finding suggests that a little number of board members would not lead to more DPS, so this may urge government institutions to raise the number of board members.

As shown in Table 6, there is also no significant relationship between the variable of CEO duality and DPS at the 5% level, because (Z statistic $= -0.922$, probability $= 0.356$), which means that hypotheses number three must be rejected. This indicates that CEO duality affect negatively DPS in the companies listed on PEX. This indication agrees with Aloudat et al. (2019), who indicates that dual CEO and chairman positions, as well as director nationality, have no effect on DPS at the 5% confidence rate [1]. Independent directors also do not affect DPS value (Z statistic $= -1.432$, Probability $= 0.152$) at the

5% significance level value. This means that hypotheses number four must be rejected. This indicates that independent directors affect negatively DPS in the companies listed on PEX. This finding agrees with [14], who indicates that Greater board independence has no positive impact on the company value, and poorly performing companies increase their proportion of outside directors over time [17]. Also, this indication may disagree with Palestinian G. code, which demands at least two independent directors in the audit committee in order to improve both integrity and performance. In the same way, Table 6 also shows that at the 5% significance level, there is no significant impact between institutional investors in the board and DPS value (Z statistic = +1.408, probability = 0.159). This result indicates that hypotheses number five must be rejected, which indicates that institutional investors in the board negatively affect DPS in the companies listed on PEX. These results agree with recent studies that do not agree about the effect of institutional investor on the DPS as [1], who indicates that at the 1% rate in Jordan, there are negative major relationships between institutional investors and (DPS) [1]. Such researchers [5], indicate that in both South Africa and Kenya, institutional ownership has a favorable impact on dividend payout. These controversial results explain the study finding that there is no impact of this variable on DPS in Palestinian case.

As shown in Table 4.7, there is a strong positive relationship between the control variables of firm size, and DPS value (Z statistic = 7.337, probability = 0.00) at the 1% significance level. This indicates that as firm size rises, the DPS will rise as well in Palestinian case. This indication agrees with Lappalainen and Niskanen (2012), who indicates that in a sample of Finnish small to medium-sized companies, board structure has little effect on small firm output [4]. This suggestion includes the possibility of a large impact presence of board characteristics in the case of large firms.

According to the results shown in Table (4.7), Where (Z statistic = +2.294, probability = 0.022) at the rate 5% significance level, there is a significant association between the control variable of profitability and DPS in PEX listed firms. And this result agrees with Song et al. (2016), who indicate that panel regression analysis shows that board characteristics have a negligible effect on operational efficiency in the restaurant industry [24]. And Aloudat et al. (2019), who indicate that In Jordan, firm profitability has a positive impact on the DPS at the 5% confidence rate [1].

Because value (Z statistic = +2.027, probability = 0.043) at the 5% significance level, there is a significant positive relationship between audit firm and DPS in Palestine. Which means that as the presence of Big Four audit firm in the annual financial audit increases the DPs increases as well in Palestine. This finding agrees with [14], who indicate that in order to eliminate budgetary accruals, a replacement impact between the participation of a Big Four auditor and an effective audit committee [32]. Which suggest the positive impact of overall performance and partially financial performance in the firms, which is surely reflected on DPS.

At the 5% significance level, (t = −5.083, probability = 0.000) there is a meaningful negative relationship between leverage and DPS in PEX listed firms. Of course, this is a normal situation, because a part of liquidity will be consumed in paying the costs of leverage and amounts. As [21], indicate in their testing about these relationships in Palestinian firms [21], their regression analysis for the same sample assured the same

results. Normally, in this environment the debt is more costly because of political and financial complicated conditions.

Furthermore, at the value of 5% significance level, there is no meaningful relationship between the control variable outside directors in the board and the DPS in PEX listed firms, because (Z statistic = −1.474, probability = 0.141). This result agrees with [14].), who say that outside directors aren't all created equal when it comes to improving a company's image, and some types of outside directors, especially business experts, can help boost it.

Where (Z statistic = −0.812, probability = 0.417) at the value of 5% significance level, there is no meaningful effect between average tenure and DPS in PEX listed firms. This suggestion agrees with Park, and Shin (2002), who indicate that the typical tenure of outside directors on the board of directors has no impact on earnings management [20], and this earnings management happens in situations that management intent is to cover some poor performance in most cases. This means that the tenure does not affect the overall performance which is reflected on DPS in Palestine case. Other researchers assured that the average tenure of CEOs affect positively financial performance [21]. But they studied other indicators of financial performance such as ROA, and ROE by using small sample size, which may help interpret the findings of the study.

At the value of 5% significance level, there is no meaningful relationship between family management and DPS in PEX listed firms because (Z statistic = −0.107, probability = 0.915). This result agrees with [32] study [33] which stated that family management has no bearing on ROA. This indicates that a family member in the board does not make any special effort to improve firm's profitability [34].

Table 7. Robust least square results

Variable	Coefficient	Std. Error	z-Statistic	Prob.
BS	0.003	0.002	2.178	0.029
DUA	−0.007	0.008	−0.922	0.356
IND	−0.032	0.023	−1.432	0.152
INS	0.017	0.012	1.408	0.159
LNTA	0.018	0.002	7.337	0.000
ROA	0.091	0.040	2.294	0.022
LEV	−0.089	0.018	−5.083	0.000
OUTS	−0.022	0.015	−1.474	0.141
TENU	−0.006	0.008	−0.812	0.417
AUF	0.015	0.008	2.027	0.043
FM	0.001	0.008	0.107	0.915
GEN	0.071	0.028	2.502	0.012

(*continued*)

Table 7. (*continued*)

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	−0.310	0.037	−8.317	0.000
Robust statistics		Adjusted R-squared	0.010	
R-squared	0.049	Deviance	0.002	
Scale	0.049	Prob (Rn-squared stat.)	0	
Rn-squared statistic	167.389			

Where: BS represents board size, DUA: CEO duality, IND: independent directors, INS: institutional investors, LNTA: firm size, ROA: profitability, LEV: leverage, OUTS: outside directors, TENU: average tenure, AUF: audit firm, FM: family management, GEN: gender, and C: intercept.

8   Conclusion

In terms of the independent variables, the regression analysis indicates that board size has a positive impact on DPS. Since the board members are investors in the company, this result indicates that as the board size grows, the DPS will rise. The presence of women on the board has a positive impact on DPS. This finding indicates that as the number of women on the board grows, so will the DPS, since women members want to see their contributions reflected in the company's success rather than men. Institutional investors have no effect on DPS. This finding suggests that institutional investors are unconcerned about DPS. Since institutional investors are interested in the company's potential prospects and can keep their shares in order to benefit from capital gains. DPS is unaffected by the presence of independent directors on the board. This indicates that the independent directors are split on whether or not to pay dividends. That in most cases, the number of independent directors is less than the majority. Additionally, CEO duality has no impact on DPS. Since the centralization environment is dominant in Palestine, the CEO's decision on dividends has little impact in both cases.

Return on assets (ROA) has a favorable impact on DPS. This indicates that as the ROA rises, the DPS will rise as well. That when businesses raise their earnings, they have met the appropriate reserve amount and can then allocate the remaining profits. The size of the firm has a positive impact on DPS. This result indicates that as the firm's size grows, so will the DPS. Since large corporations make large profits, the decision to pay dividends is more likely. Leverage has a negative impact on the DPS. This result indicates that as the firm's leverage grows, the DPS will decrease. Since leverage - in most situations- adds to the company's challenges by requiring it to cover the debt's costs and the parts due from it. Finally, there is no impact of outside directors, average tenure, and family management on the DPS. The core importance of this research in concentrating data analysis on the final outcome of the investment decisions. This is what investors could rely on deeply in studying investment choices. Another value of this study that it can help the legislation, and official institutions in this field in making their best effort to develop governance code as the society hopes.

From a practical point of view, both shareholders and stakeholders have the opportunity for a quick assessment of firm's payout policy though their governance structure.

For example, our findings reveal some weaknesses and strength of the governance role in formulating the dividends payout policy of corporations and indicate that there is a scope for further improvement in national and international monitoring and enforcement mechanisms. Also, this study provides evidence that a stronger specific CG is associated with a higher level of dividend payment. Therefore, regulatory bodies are expected to be more proactive in guiding firms toward the best practices of governance as companies look for such guidance. The study's main drawback is the limited sample size, which reflects all public shareholding companies listed on the Palestine Exchange from which the researcher was able to collect the required data for the study, making it difficult to split it into sectors such as family businesses, banks, insurance companies, and others. There are a variety of political, social, and legal variables that can affect economic outcomes. These variables, such as the presence of several financial crises to which the Palestinian economy has been exposed, may have an impact on the study's variable. Despite the limitations, this study contributes to the dividend literature. For the first time, new context was evaluated in relation to the governance variables impact on payout policy.

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The Impact of AC Characteristics on CSR Disclosure During COVID-19: Empirical Evidence from Kuwait Listed Firms

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Abstract. This study aims to examine the impact of audit committee (AC) characteristics on corporate social responsibility (CSR) disclosure in the corporate annual reports of Kuwait listed firms during COVID-19. To achieve this goal, an indicator was built to measure the level of disclosure in the annual reports of a sample of 124 firms listed on the Kuwait Stock Exchange (KSE) during the period from 2017 to 2022. The study developed and tested four main hypotheses to reveal the relationship between CSR disclosure and the characteristics of the AC before, during and after the COVID-19 pandemic, namely, size, frequency of meetings, independence, and financial expertise. Using multiple regression analysis model on the data collected manually from the annual reports of those firms.

The results of the study indicate that the firms listed on the KSE provide low disclosure (e.g., mean CSR index is 39%), which indicates that firms have less incentive to disclose CSR practices during the COVID-19 pandemic. The results of the statistical analysis also showed that AC characteristics such as size, frequency of meetings, and financial expertise have a significant positive influence on the level of CSR disclosure. However, there is no evidence that AC characteristics such as members' independence affect CSR disclosure in Kuwait firms listed. The main contribution of this study is the first to be conducted on the impact of AC characteristics on CSR disclosure before and after the COVID-19 pandemic by providing analytical evidence on listed Kuwait firms. Thus, it provides insights for policymakers interested in shareholders, regulators, financial analysts, investment analysts, and managers on the rules of governance and in assessing CSR disclosure in annual reporting practices, and in strengthening the role of oversight and oversight for the accountability and transparency of ACs.

Keywords: COVID-19 · Characteristics of the AC · Disclosure of CSR · Annual financial reports · Firm characteristics · Kuwait firms

1 Introduction

Over the past two decades, the emergence of social activism around CSR and the increase in the number of corporate failures has exposed the weakness and lack of practice by the corporate management of adequate disclosure of their financial reports. With the emergence of the COVID-19 crisis, firms have been pressured not only to achieve financial

goals, but also to satisfy users of financial statements about the accounting disclosure made by firms in financial reports who expect or need information from the firm more a comprehensive overview of its activities, and the impact of these activities on the community and environment surrounding the firm [1, 2]). [3] confirmed that the existence of a positive and moral relationship between each of the audit committee, overall (the size of the audit committee, the audit committee meeting, and the independence of the audit committee) and the timeliness of the financial reports. [4] acknowledged that over the past few years there has been increased interest in the AC as a tool for corporate governance with the aim of increasing management questioning and increasing the independence of auditors.

The main contribution of the current study is the first research performed on the impact of AC characteristics on CSR disclosure before and after the COVID-19 pandemic by providing analytical evidence on listed Kuwait firms. Thus, it provides insights for policymakers interested in shareholders, regulators, financial analysts, investment analysts, and managers on the rules of governance and in assessing CSR disclosure in annual reporting practices, and in strengthening the role of oversight and oversight for the accountability and transparency of ACs.

2 Literature Review and Development of Hypothesis

2.1 The Size of the Members of the AC and the Disclosure of CSR

The size of the AC refers to the number of members in the AC that includes at least three members in order to monitor and ensure the transparency of the preparation of the financial statements (first annual report, 2010–2011; 2011–2012), and they must all have diverse experience to carry out the audit. On the other hand, [5] acknowledged that a larger number of AC members is likely to help such a committee detect and resolve potential problems in the firm's reporting process. While [6] believes that the size of the AC members in general, should not exceed five members, because the size of the AC varies from one firm to another depending on the firm's factors such as the size of the firm and the nature of operations in order to improve disclosure processes. Based on the previous discussion, the first hypothesis was formulated as follows:

H1: There is a positive statistically significant effect between the size of the AC members and the level of disclosure of CSR in the annual reports of firms listed on the KSE.

2.2 Frequency of Meetings and Disclosure of CSR

The frequency of AC meetings is one of the most important characteristics of AC members [7]. Frequent AC meetings will help to improve the level of oversight of the financial reporting process by monitoring management in financial reporting to achieve its objectives and enhance the efficiency and reliability of its role [8]. According to the annual report (2020–2021), the committee members of the KSE authority recommend that the AC meets regularly enough to carry out its role effectively and to enhance the committee's ability to perform its oversight function, on how to monitor business activities,

present and discuss problems and weaknesses in financial reports, study and develop mechanisms and ways to solve it. The analytical empirical results of previous studies [9, 10] show a positive correlation between the frequency of AC meetings and the level of CSR disclosure. Depending on the findings of previous studies, the second hypothesis will be tested as follows:

H2: There is a positive statistically significant effect between the frequency of meetings of the AC members and the level of disclosure of CSR in the annual reports of firms listed on the KSE.

2.3   Independence and Disclosure of CSR

The AC indicates that the number of independent or external members in the composition of the AC will lead to better accountability and transparency of firms in order to protect the interests of stakeholders (owners) and achieve the goals of the committee [11]. Therefore, the committee of the KSE authority recommended that when forming the board of directors, a balance should be achieved between executive, non-executive, and independent directors, bearing in mind that most of the members of the board of directors must be independent and non-executive. In this context, the study by [12] indicated that a large number of independent AC members would improve the objectivity, reliability and transparency of the firm's financial reports and the voluntary disclosure of the social responsibility of those firms.

H3 There is a positive statistically significant effect between the independence of the AC members and the level of disclosure of CSR in the annual reports of firms listed on the KSE.

2.4   Financial and Accounting Expertise and Disclosure of CSR

According to the AC of the KSE authority, it must include at least one member with appropriate financial or accounting qualifications or relevant financial experience to perform its role effectively. This, in turn, will enhance the transparency of corporate reporting and thus alleviate agency problems associated with information flow (9th Annual Report, 2019–2020). [13] indicated that the financial experience of the members of the AC has an intrinsic positive relationship to the disclosure of CSR. Therefore, the more specialised the committee members are, the higher the level of CSR disclosure. In other words, when financial experts are among the members of the AC, it can be ensured that the firm will fulfill the ethical responsibilities and disclose the social responsibility of those firms. Therefore, in line with the results of previous studies, this study assumes that:

H4: There is a positive statistically significant effect between the financial and accounting experience of members of the AC and the level of disclosure of CSR in the annual reports of firms listed on the KSE.

3 Study Methodology

3.1 Study Sample and Data Collection

The study population consisted of all public shareholding firms listed on the KSE and that published their reports for the fiscal year ending between January 2017 and February 2022, the number of these firms reached (160) firms. The study sample selected was (124) firms, equivalent to (76%) of the total number of joint stock firms registered in the stock exchange. According to the following criteria and conditions:

1. That the firm be traded on the KSE during the period (2017–2022).
2. Excluding all banks and insurance firms from the sample for their application of international accounting standards and their number (19) banks and insurance firms.
3. Excluding (14) firms that did not disclose the necessary and necessary information in their annual financial statements during the study period.
4. Excluding firms for which the end of the fiscal year may differ from (31-12) so that there is no weakness in comparing the results of the study, which are (3) firms.

The necessary data for this study were collected from the financial reports of firms listed in the KSE through the firms' websites and the KSE website (https://www.boursakuwait.com.kw/). Then, the collected data was transferred into Excel columns and linear regression method was used to analyze the data and test hypotheses.

3.2 Study Model and Methods of Measuring Variables

Based on the study problem and its objectives, the dependent variable, independent variables, and disciplinary (control) variables were determined as follows:

3.2.1 Measurement of the Dependent Variable - (CSR Disclosure)

The dependent variable (DISCSR) was measured by summing the social responsibility disclosure scores for the disclosure indicator items divided by the maximum possible score for each firm. The CSR disclosure index was developed by referring to previous studies, taking into consideration the environment of the KSE, where the disclosure index was used in this study based on the model developed from the study [10] to improve consistency and accuracy of content analysis for annual financial reports. This model is intended to measure CSR disclosure using 99 items presented in six categories: "business issues, work ethics, community issues, environmental issues, business conduct issues, and finance and governance issues" (p. 6–7). In addition, there were two sub-categories such as the category of consolidated CSR policy, and local CSR policy. 99 items were monitored in corporate reports and were coded as "1" for the current item and "0" for the missing item.

The list of disclosure indicator, which was developed based on the studies for the disclosure of CSR, consists of (39) elements of the social responsibility of these firms, which were presented in eight main categories: (1) work, (2) ethics, (3) society, (4) environment, (5) business conduct, (6) finance and governance, (7) consolidated CSR policy, (8) local CSR policy.

$CDRDI_j = \frac{\sum_{i=1}^{n} CSR_j}{n}$ where: $CDRDI_j$ = CSR discloser index of jth firm's which can be any value from 0 to 1; n_j = the total possible score for each jth firm (e.g., 39); CSR_j = one if the ith item is disclosed, otherwise zero in j^{th} firm's annual report; $0 \leq CSRDI_j \leq 1$.

After completing the measurement of the disclosure index for the study sample, the internal consistency of the eight categories of the checklist of the CSR disclosure index was measured using Cronbach's Coefficient Alpha, which means the internal consistency, to what extent the elements of the index measure the same phenomenon, and if the reliability value (Alpha) for the content analysis is equal to or greater than (80%), which indicates the appropriateness of the indicator elements and that the disclosure measure for the sample is internally consistent [14]. Cronbach's alpha values for eight categories of the CSR disclosure index ranged between 85 and 92%, which indicates the stability of the study tool.

3.2.2 Measuring Independent Variables

This study includes four independent variables represented in the characteristics of the members of the AC, which are: the size of the members of the AC (ACSIZE), the frequency of meetings of the AC (ACMEET), the independence of the members of the AC (ACINDE), and the financial and accounting experience of the AC (ACEXPE). To measure all independent variables, a multiple regression analysis model was used on the data collected manually from the annual reports of firms for 124 firms listed on the KSE during the period from 2017 to 2022 considering the COVID-19 pandemic. Table 1 shows the details of all the variables, including the independent variables.

3.2.3 Control Variables

The control variables in this study are related to organisational and industrial characteristics that can affect the disclosure of CSR. The control variables are determined with regard to the organisational and industrial characteristics, according to previous studies in the area of disclosure. Five variables have been used: industry type (FIND), firm size (FSIZE), return on assets (ROA), debt-to-assets ratio (LEV), and independent board of directors (BIND).

3.3 Model Specification

This study examines the relationship between the characteristics of AC members and CSR disclosure. Test the hypotheses developed in the previous section using multivariate regression analysis to estimate the effect of the independent variable on the dependent variables with the control variables. The multiple regression model for empirical analysis is: CSR disclosure index = a function of (agents of characteristics of members of the AC, control variables). The multiple regression model of the study can be explained as follows:

$$CDRDI_{i,t} = \beta_0 + \beta_1 ACSIZE_{\iota,\tau} + \beta_2 ACMEET_{i,t} + \beta_3 ACINDE_{i,t} + \beta_4 ACEXPE_{i,t} + \beta_5 FIND_{i,t} + \beta_6 FSIZE_{i,t} + \beta_7 ROA_{i,t} + \beta_8 LEF_{i,t} + \beta_9 BIND_{i,t} + \varepsilon_{i,t}$$

CSRDI = CSRD is closure index; ACSIZE = Size of AC members; ACMEET = Frequency of AC meetings; ACINDE = percentage of non-executive directors; ACEXPE = Proportion of AC members with financial and accounting experience; FIND = dummy variable: (1) if the firm is industrial and (0) otherwise; FSIZE = The firm's size; ROA = Return on assets; LEF = Debt to assets ratio; BIND = number of independent board members. β_0 = constant, β = regression coefficient; β_i, i = 1, ..., 9 are parameters; $\varepsilon_{i,t}$ = error term; i^{th} = note; t = The end of the fiscal year between January 2017 and February 2022.

Table 1. The method of measuring study variables

Variables		Predicted sign	Measurement
Symbol	Name of variables		
First: the dependent variable			
CDRDI	CSR Disclosure Index		The number of items in the CSR disclosed audit list in the annual report divided by 39 to measure the extent of CSR disclosures among listed firms
Second: variables of the AC members' characteristics (independent variables)			
ACSIZ	Size of AC members	±	It is measured by the total number of members of the AC elected by the board of directors
ACMEET	Frequency of the AC	+	It is measured by the total number of times the ACs in a year
ACINDE	Independence of the number of members of the AC	+	It is measured by the number of independent members represented on the board of directors
CEXPE	The financial and accounting experience of the members of the AC	±	It is measured by the number of AC members who have professional qualifications (accounting or finance) or academic certificates (finance or accounting)
Third: control variables			
FIND	Type of industry	+	Dummy variable: takes the value (1) if the firm is industrial or (0) otherwise

Table 1. (*continued*)

Variables		Predicted sign	Measurement
Symbol	Name of variables		
FSIZE	Firm size	±	It is measured using the natural logarithm of the firm's total sales
ROA	Return on assets	+	It is measured by net income divided by total assets
LEF	Debt to assets ratio	±	It is measured by total debt divided by total assets
BIND	Independent board of directors	+	It is measured by the number of independent board members

4 Analytical Study Results

4.1 Descriptive Statistics

Table 2 shows that the average score for the CSR disclosure index (CSRDI) is 0.392, and the lowest level of social responsibility disclosure is 0.034, while the largest percentage of the level of social responsibility disclosure is 0.521, and its standard deviation is 0.061. Through the results of the disclosure of this analysis, it was found that the firms listed in the KSE on average disclose 39.2% of the items of CSR in the audit list in their annual reports. This result highlights that the low level of CSR disclosure (for instance, 39% for CSRDI) can be partially explained by the lack of regulatory requirements and standards for CSR-listed firms in the context of the COVID-19 pandemic.

Table 2. Descriptive statistics for the dependent and independent variables of the study

Variables	# of firms	Mean	Median	Min	Max	Std. Dev
Dependent variable						
CSRDI	124	0.392	0.370	0.034	0.521	0.061
Independent variables						
ACSIZE	124	2.491	1.980	1.000	6.000	1.650
ACMEET	124	3.813	3.123	1.000	12.000	2.821
ACINDE	124	0.721	1.100	0.000	3.000	0.482
ACEXPE	124	0.337	0.352	0.000	3.000	0.553

4.2 Correlation of Variables

Table 3 presents the Pearson correlation matrix analysis to show the relationship between the dependent variable (CSRDI), with the aim of revealing the existence of a linear

correlation for the characteristics of the AC members (independent variables), and the characteristics of the board of directors and firms (control variables) as follows:

Table 3. Pearson correlation matrix

Variables	CSRDI	ACSIZE	ACMEET	ACINDE	ACEXPE	FIND	FSIZE	ROA	LEV	BIND
ACSIZE	0.298**	1.000								
ACMEET	0.385**	0.252**	1.000							
ACINDE	0.280**	−0.007	0.291**	1.000						
ACEXPE	0.048	−0.131*	0.171**	0.087	1.000					
FIND	0.167**	0.019	−0.035	−0.149*	0.010	1.000				
FSIZE	0.340**	0.180**	0.361**	0.182**	0.097	0.059	1.000			
ROA	0.199**	0.192*	0.283**	0.039	0.063	−0.081	0.051	1.000		
LEV	0.058	0.092	0.089	0.037	0.053	−0.088	0.059	−0.273**	1.000	
BIND	0.335*	0.132**	0.207**	0.483**	0.049	−0.142*	0.181**	0.060	0.049	1.000

**Correlation is significant as the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed).

According to the results of the analysis shown in Table 3, there is a positive correlation between the disclosure level indicator and the characteristics of the members of the ACs and some other control variable, where the results indicate that the CSR disclosure index (CSRDI) is more correlated and statistically significant at the level of significance with the variables ($\alpha \leq 0.01$).

4.3   Regression Analysis Results

Table 4 presents the results of the analysis of the multiple regression model that was developed to measure the CSR disclosure index (CSRDI) as the dependent variable. The result of the analysis shows that the values of the variance inflation test VIF for all variables are less than (10) and its value ranges between (0.912–0.980), while the value of the permissible variance test for all variables is greater than (0.05) and its value ranges between (1.096–1.020). Declaring that there is no unusual effect on the regression results, and this indicates that there is no statistically significant correlation between the independent variables mentioned in the (correlation).

The results of the initial hypothesis test:

H0:   There is no positive statistically significant effect between the size of the AC members and the level of disclosure of CSR in the annual reports of firms listed on the KSE.

H1:   There is a positive statistically significant effect between the size of the AC members and the level of disclosure of CS R in the annual reports of firms listed on the KSE.

The results of Table 4 also indicate that the level of characteristics of the members of the AC and the regression results indicate that the size of the AC (ACSIZE) has a

positive and important correlation with the CSR disclosure index (CSRDI) at a statistical significance level of 1%. Thus, the value of (t) reached (2.863), at a level of significance (Sig. = 0.000) less than the level of significance ($\alpha \leq 0.01$), and therefore the null hypothesis (H_0) is rejected and the alternative (H_1) is accepted, which states: "There is an effect positive with a statistical significance between the size of the members of the AC and the level of disclosure of CSR in the annual reports of firms listed on the KSE". The results of the second hypothesis test as follows:

H0: There is no positive statistically significant effect between the frequency of meetings of the AC members and the level of disclosure of CSR in the annual reports of firms listed on the KSE.

H2: There is a positive statistically significant effect between the frequency of meetings of the members of the AC and the level of disclosure of CSR in the annual reports of firms listed on the KSE.

It is evident from Table 4 that the results of the repetition of the AC meetings (ACMEET) have a positive and important correlation with the CSR disclosure index (CSRDI) at a statistical significance level of 5%. Therefore, the value of (t) amounted to (2.390), at a level of significance (Sig. = 0.000) less than the level of significance ($\alpha \leq 0.05$), and therefore the null hypothesis (H_0) is rejected and the alternative (H_2) is accepted, which states: "There is an effect positive and statistically significant between the frequency of the AC members' meetings and the level of disclosure of CSR in the annual reports of firms listed on the KSE." The results of the third hypothesis test as follows:

H0: There is no positive statistically significant effect between the independence of the AC members and the level of disclosure of CSR in the annual reports of firms listed on the KSE.

H3: There is a positive statistically significant effect between the independence of the AC members and the level of disclosure of CSR in the annual reports of firms listed on the KSE.

As for the independent members of the AC (ACINDE), the regression results show a negative, statistically significant relationship between the independent members of the AC and the CSR disclosure index (CSRDI). Thus, the value of (t) reached (−0.072), at a level of significance (0.790) greater than the level of significance ($\alpha \leq 0.05$), and therefore he rejected the null hypothesis (H_0) and accepted the alternative (H_3), which states that: "There is no effect positive and statistically significant between the independence of the members of the AC and the level of disclosure of CSR in the annual reports of firms listed on the KSE." The results of the fourth hypothesis test as follows:

H0: There is no positive statistically significant effect between the financial and accounting experience of the members of the AC and the level of disclosure of CSR in the annual reports of firms listed on the KSE.

H4: There is a positive statistically significant effect between the financial and accounting experience of the members of the AC and the level of disclosure of CSR in the annual reports of firms listed on the KSE.

The results of Table 4 indicate that the level of financial and accounting expertise of the members of the AC (ACEXPE) has a positive and important correlation with the CSRDI measurement index at a statistical significance level of 5%. Therefore, the value of (t) amounted to (2.560), at a level of significance (Sig. $= 0.000$) less than the level of significance ($\alpha \leq 0.05$), and therefore he rejected the null hypothesis (H$_0$) and accepted the alternative (H$_4$), which states: "There is an effect positive and statistically significant between the financial and accounting experience of the members of the AC and the level of disclosure of CSR in the annual reports of firms listed on the KSE."

Table 4. Regression analysis model results

Dependent variable: CSRDI model

Variables	Unstandardised coefficients		Standardised coefficients		Sig.	Variance inflation factor	
	B	Std. error	Beta	t-statistic		VIF	(1/VIF)
(Constant)	0.090	0.033		3.885	0.000		
ACSIZE	0.022	0.028	0.197	2.863	0.009***	0.966	1.035
ACMEET	0.015	0.009	0.192	2.390	0.042**	0.980	1.020
ACINDE	−0.018	0.021	−0.033	−0.072	0.790	0.942	1.062
ACEXPE	0.055	0.023	0.283	2.560	0.029**	0.935	1.070
FIND	0.016	0.021	0.195	2.462	0.009**	0.952	1.050
FSIZE	4.182	0.011	0.210	2.344	0.018**	0.916	1.092
ROA	0.038	0.007	0.184	2.899	0.006***	0.948	1.055
LEV	0.026	0.012	0.087	1.291	0.289	0.914	1.094
BIND	0.016	0.035	0.072	0.698	0.677	0.912	1.096
Weighted statistics							
R-squared			0.385				
Adjusted *R*-squared			0.336				
F-statistic			0.05978				
Sig. *F*-statistic			0.000**				
Durbin-Watson stat			1.64245				

***Statistically significant at 0.01 level. **Statistically significant at 0.05 level. *Statistically significant at 0.10 level.

5 Discussion and Conclusion

The results indicate that the level of disclosure of social responsibility of firms listed in the KSE is low (for example, the average index of CSR is 39%, Table 2) compared to the CSR checklist used in the study, and perhaps this may be due to the impact of firms on the new COVID-19 disease, in addition to the Kuwait environment being affected by some cultural variables such as: confidentiality of information, as well as the control of major shareholders on the board of directors and the lack of sufficient independence for non-executive managers. Thus, indicates the need to improve CSR disclosure to reduce information asymmetry between corporate managers and stakeholders. The study also found that the characteristics of the AC such as (members of the AC, the frequency of meetings of the AC, and the financial and accounting experience of the AC have a positive and statistically significant impact on the level of CSR disclosure). However, there is no statistically significant effect the characteristics of the AC such as the independence of the members of the AC affect the disclosure of the social responsibility of firms listed on the KSE.

The findings may be of interest to policy makers and regulators in making adjustments to corporate governance recommendations regarding ACs. The results may be an indication of the need for further improvements in the guidelines of the Capital Markets Authority and the regulation of securities activity in Kuwait to enhance the effectiveness of ACs and thus the level of non-financial disclosure.

There are some limitations that must be taken into account when interpreting study results. First, the study examines the ACs of firms listed on the KSE only. Firms that are not listed in the financial market may have ACs with different characteristics to improve the effectiveness of risk management, control and disclosure processes before and after the Covid-19 pandemic. Second, the study's CSR disclosure measures were developed based only on data collected from corporate annual reports and websites before and after the Covid-19 pandemic. Finally, the study takes into account the characteristics of the AC recommended by the guidelines of the KSE authority and previous studies. In the future, these restrictions provide a means for further studies and related research. For instance, there may be new variables that have not previously been studied and related to the characteristics of the ACs, such as the positions of the members of the AC, the committee members' ownership of firm shares, the committee members' rewards, their reputation, and the study of their relationship to the level of disclosure, and the differences cultural impact on the level of CSR disclosure. More analytical empirical research needs to be conducted in both developing and developed countries to show the importance and impact of CSR disclosure on ACs in financial and health crises.

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A Proposed Accounting Framework for Controlling Highly Complex and Thoroughness Risks Through Using of Financial Derivatives (Covid - 19) as a Model

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Abstract. The current pandemic (COVID-19) currently is great importance at all levels due to its comprehensiveness in its impact on the global economy, as well as it has displaced a number of companies from positions that have always occupied this decline as a result of improper practices and poor management, and the pandemic was the main driver of the market in financial fluctuations. It is expected that it will affect production and sales and, as a result, the expected profits, and then on the credibility of the financial statements and the exposure of companies to bankruptcy, and it will be the opposite of what was disclosed in those statements. Therefore, some accounting treatments should be carried out and some financial instruments derived therefrom, and working on finding an accounting framework that uses some types of contracts The research aims to analyze the risks facing companies, exposure to different and appropriate accounting approaches and treatments, and knowledge search to carry out reforms in accordance with international financial reporting standards and enable it to control risks effectively and successfully, and that the application of the framework helps to Risk Management and Reducing its Consequences The researchers followed the case study on a sample of service companies (Baghdad Transport and Real Estate Investment Company). It was reached to strengthen the financial position by acquiring financial assets as a result of accounting treatments for derivatives and employing gains with hedged financial assets that enhance their ability to continue and address risks before they occur. Controlling risks using these modern derivative tools is an essential issue for companies based on the returns of these tools, such as controlling regular financial flows, achieving capital gains and reducing risks. Risk and ensure its continuity and then rise to competition.

Keywords: Accounting framework · Risks · Financial derivatives

1. Previous research

In his research, **Al-Kindi** emphasized the use of options contracts in reducing risks and applied to a sample of companies listed in the Iraqi Stock Exchange to identify

the advantages of options contracts and to show the pros and cons of these contracts and their ability to reduce risks related to the market, especially in the general index of the market (ISX60). The researchers found that there is a large and vast difference between the returns resulting from the strategy of buying European options contracts when hedging and the actual returns achieved from the movement of the general index prices in the Iraqi Stock Exchange, that the returns resulting from the strategy of selling European options contracts when hedging is greater than the actual returns Verified from the movement of the general index in the Iraqi Stock Exchange (Al-Kindi 2019).

While **Li & Marinc** sees in his research the use of financial derivatives and the risks of holding companies for US banks The use of financial derivatives and risks of U.S. bank holding companies and the aim of the research is to identify the positive relationship between derivatives and risks in relation to derivatives for trading as well as to derivatives in hedging. The use of financial derivatives is positively and significantly related to the regular exposure to risks that bank holding companies are exposed to (Li and Marinc 2014).

2. The methodological framework

2.1. **The importance of philosophical and practical research:** The philosophical importance focuses on the topic of accounting for hedging financial instruments and their derivatives, and has occupied the thinking of many parties, professional organizations and accounting theorists, and the interest in this has increased more after the pandemic cast a shadow on The whole world, especially in the financial, accounting and economic aspects, which prompted more urgently to think of setting up normative theoretical frameworks derived from reality to address and mitigate its effects. The importance of philosophical research is embodied in this direction, while the practical importance focused on the reflection of the effects left by the (COVID-19) pandemic on the economic activity of all sectors, which prompted the accounting profession to contribute to the development of practical treatments, including the use of hedge accounting and financial tools and their derivatives. These procedures and treatments attempt to reduce the negative effects that arose from this reality.

2.2. **Research Objective:**

2.2.1. Intellectual and philosophical framing of the subject of hedge accounting and financial instruments and their derivatives, theoretical and scientific briefing on market risks, and presentation of theoretical approaches to International Financial Reporting Standards in relation to hedge accounting, financial instruments and their derivatives.

2.2.2. Theoretical presentation as an accounting framework to address the effects of the pandemic as highly complex and comprehensive risks, study and analyze the highly complex and comprehensive risks that companies are exposed to, especially in light of the COVID-19 pandemic) and apply hedge accounting for highly complex and comprehensive risks.

2.2.3. Employing financial derivatives and their types through hedge accounting for each element of the financial statements.

2.3. **Research problem:** The research problem in its philosophical form that accounting has been characterized over the ages by the two characteristics of adaptation and continuity and since (1920) and the accounting thought still confronts many of the theoretical issues that faced accounting in its framing aspect. At the present time, very complex and comprehensive problems have arisen in the form of A global cross-border epidemic that requires the development of a theoretical framework and intellectual foundations to address it within the accounting field. As for the problem of research in its practical form, since the (COVID-19) pandemic has become a reality imposed on all economic sectors, and since accounting is an effective way to measure the economic activity of companies in all circumstances, the The latter plays its vital role in addressing financial problems and the significant effects caused by the pandemic for companies facing this huge and complex problem with its various dimensions, so the research problem is represented by: From the current reality (COVID-19).

2.4. **Research Hypothesis:**

2.4.1. General Philosophical Assumptions (Axioms): The characteristics of adaptation and continuity with which accounting is known, must at the present time, when complex accounting problems have arisen, to lay intellectual foundations for accounting treatments and derivative financial tools used to hedge against risks resulting from the global epidemic.
2.4.2. Special Practical Assumptions

> *2.4.2.1. The accounting framework using accounting treatments and financial derivatives helps control the risks resulting from the (COVID-19) pandemic and reduce its consequences on the company's business results, financial position and market value.*
> *2.4.2.2. Reflecting the reduction of risks fluctuations that occur in the elements of the financial statements on the enhancement and increase of accounting profits.*
> *2.4.2.3. The development of an accounting framework in difficult circumstances such as) COVID-19) controls highly complex risks and gives companies the ability to overcome these risks and continue their activities.*

2.5. **Research method:** The researchers adopted the inductive approach in the theoretical aspect and the case study mixed with the deductive approach in the practical aspect through the following:

2.5.1. Theoretical side: The researchers followed the analytical approach by making use of the various available sources and analyzing them to identify the research variables and the associated factors that enable the study of the relationship between them and their impact on achieving the desired results.
2.5.2. The practical side: The researchers followed the case study approach for the purpose of proving the hypothesis of the research and achieving the results by adopting a hypothetical method in measuring the elements of the financial

statements by employing financial derivatives and accounting treatments to reduce the complex risks facing companies, and that is within the accounting framework.

2.6.   **Data collection methods:**

2.6.1. Theoretical side: Arab and foreign literature and references have been adopted from theses, letters, periodicals, research and books, in addition to the developments published on the Internet on the subject.
2.6.2. The practical side:

> **2.6.2.1.** *Annual financial reports and statements for a sample of companies that are a source of data because they contain factual information that proves the research hypothesis.*
> **2.6.2.2.** *Use the types of derivatives for the elements of the financial statements as appropriate.*

3. The highly complex risks and how to manage and hedge them by employing financial derivatives: At the present time, we need more orientation towards understanding risk. In the event of a change related to future events, there should be a need for continuous development to reach an advanced level of risk management, which is a road map. The story of Yusuf (peace be upon him) with the King of Egypt, when he saw in a dream that there were seven fat cows that were being eaten by seven lean ones, seven green ears of grain, and the last dried ones. A plan to confront and manage this risk. In this story, we learn that risks exist in our lives in one way or another and are not only related to projects; Therefore, it is necessary to know the concept of risks and how to manage them by identifying, analyzing and evaluating them, and preparing a plan to overcome them or take advantage of them, in the best way and at the lowest cost.

3.1.   **The concept of risk:** Webster's dictionary defines "risk" as the exposure to loss, and the risk has been defined according to each person and each knowledge in a different way from the other, some of them defined it in the simplest practical definition as a future event, which may or may not happen, and in the event of occurrence This event will have an effect either it will be a positive or negative impact (https://blog.mostaql.com/risk) It is clear that the risk is not a problem because the problem is already a bad event, while the risk is an event in the future that has not happened yet but in the case Its occurrence is likely to turn either into a problem (the negative impact of the event) or into an opportunity (the positive impact of the event). **Risk was also defined** as a personal concept that needs to be looked at and measured on an individual basis by what are the risks faced by any person or company and what is the degree Their bearing those risks and through that we will get acquainted with them and their approach, provided that their relationship to corporate activity, such as determining the financial business, will be the risks in those businesses the potential loss of money or investments, so the all-risk approach includes the possibility of harm or loss to people, property, reputation or assets resulting from What Happened (Seewald and Baillie 2020: 183).

3.2. **Defining risk and uncertainty:** Al-Husseini and Al-Douri distinguish between the concept of risk and uncertainty, as the concept depends on the degree of available historical data and information. The risk can be measured by obtaining information on investment returns for the past years. As for the state of uncertainty, it arises when these are not available. Information about investments, and as a result, resorting to making speculative estimates about the return (Al-Hussaini and Al-Douri 2008: 166) Al-**Shammari believes** that the risk in the financial sense refers to the volatility and instability of returns or the fluctuation in the market value of the company, i.e., the uncertainty about future cash flows, as the company prefers confirmed cash flows over uncertain cash flows (Al-Shammari 2008: 183–184).

3.3. **General classification of risks:** according to this classification, the risks are divided into: (Al-Rubaie et al. 2011: 428).

3.3.1. Systemic risks: a group of risks that affect a large number of assets, each of them to a greater or lesser degree, such as inflation, interest rates and political risks, and they are also called market risks, and they are risks that cannot be avoided even by increasing the amount of diversification, and arise from the fact that there are risks that affect In the company, which threatens all companies, such as stocks tend to move together or in one direction, and this is what makes companies exposed to market risks regardless of the number of shares they have, and the focus will be on these risks as they are more complex. A single financial company creates a "multiplier effect" that leads to defaults by other financial companies and threatens the stability of the financial system, there are huge numbers of indirect transactions between companies, if company A fails, company B may incur a huge loss In its transactions with Company A, and this in turn leads to the failure of Company B, Company C which has many outstanding transactions with both Companies A and B may incur a great loss and face severe financial difficulties. The financial system survived default as Drexel in 1990, Barings in 1995, and Lehman Brothers in 2008 did very well, but regulators remain concerned. During the market turmoil of 2007 and 2008, many large financial firms were bailed out, rather than allowed to fail, because governments were Concerned about systemic risks (Hull 2018: 349)

3.3.2. Unsystematic risks: These are risks that affect a specific asset or a small group of assets, and they are risks that can be removed through diversification and arise from multiple risks surrounding the individual company and are specific to it.

3.4. **Modern ways to manage risks:** The continuous change in the economic, financial and investment environment has led to the search for new financial instruments and products, and due to the continuous change in prices, inflation, interest rate and exchange rate, more modern financial tools have been searched for managing the risks of price fluctuations, and among the financial tools that are used to reduce risks are securitization and derivatives. Financial derivatives are financial tools that provide the best conditions for hedging against various risks compared to typical methods that are impossible to use in covering systemic risks. Financial derivatives contribute to achieving the strategic goals of companies in their ability to manage

fluctuations in stock prices and interest rates. And exchange rates, both according to their ability to manage risks, and accordingly hedging using derivative contracts is one of the modern ways to manage risks (Al-Kindi 2019: 80).

3.5. **The concept of hedging and its types and its relationship to highly complex risks:** Some risks constitute an intellectual dilemma and are the focus of attention for researchers and a challenge they seek to confront. As a concept and importance, we start with the following:

3.5.1. Hedging: Concept and Importance: Hedging is one of the main strategies in managing market or systemic risks, due to exchange rate fluctuations (Bartram and Dufy 2001:37) and hedging is defined as providing protection from potential losses (Al-Ali 2002: 99). The activity taken to reduce or reduce systemic risks and to get rid of losses that occur as a result of fluctuations in prices (Van Horne 2004: 756), and hedging is an important achievement in the financial markets during the current years due to its contribution to the growth of the derivatives market (Bodie et al. 2002: 45–55) This growth in the market led to the creation of innovative financial tools, which greatly helped in providing investors and companies with tools to manage unfavorable price fluctuations, as they were able to transfer or transfer them to other parties willing to bear them, as it is an effective market in reallocating risk between dealers (Chance 1998) Also, most companies, as a result of their exposure to market risks, hedge to reduce their exposure to price fluctuations. Financial planning reduces potential exposure to risks of financial hardship resulting from cash deficit, and (hedging) allows companies to Practicing its work more safely and this helps reduce its exposure to sudden fluctuations in prices (Brealey et al. 2001: 683) From the above we conclude by saying that hedging is an achievement that contributes to the growth of the derivatives market and then finding innovative tools to manage price fluctuations in risk management.

3.5.2. Hedging Instruments: To identify a hedging instrument, it is a derivative, an asset or a liability that covers the risks associated with measuring the fair value or cash flows of another current instrument or a future operation. Hedging instruments for the purpose of hedge accounting (Hammad 2005: 275).

3.6. **Accounting for the three types of hedges:** The cases below show how to account for the three types of hedges according to IAS 39: (Hammad 2005: 276)

3.6.1. The hedging derivative is recognized in the balance sheet and measured at fair value in any of the three cases.

3.6.2. For a fair value hedge, the gain/loss on the derivative is recognized (re-measurement of the hedging instrument at fair value) and recognized directly in the income statement. In return, any gain/loss associated with the hedged item is offset against the book value of the item (asset or liability) including It corresponds to the changes in the value associated with the risks that were covered and put in the income statement as well, that is, the gains/losses arising from the hedged item should be adjusted by this item and recognized in the income statement.

3.6.3. For a cash flow hedge and a net investment hedge in a foreign unit, the gain or loss arising from the derivative designated as an effective hedge, is recognized in equity, and the ineffective portion, if any, is included in the income statement.

3.7. **The following procedures are required at the date of each statement of financial position: (Hoyle et al. 2011: 386).**

3.7.1. The hedged asset or liability is adjusted to fair value based on changes in the spot exchange rate and the foreign exchange gain or loss is recognized in net income.

3.7.2. The hedging instrument is adjusted to fair value (resulting in a balance sheet asset or liability) with the consideration recognized as a change in other comprehensive income.

3.7.3. Convert an amount equal to the foreign exchange gain or loss on the hedged asset or liability into net income and the net effect is to offset any gain or loss on the hedged asset or liability.

3.7.4. An additional amount of other comprehensive income is removed and recognized in net income to reflect (a) the current period amortization of the original discount or premium on the forward contract (if the forward contract is a hedging instrument) or (b) the change in the time value of the option (if the option is an instrument hedging).

4. The concept of financial derivatives within the framework of the financial system tools: They are contracts and agreements that derive their value from real assets such as commodities or precious metals such as gold or financial assets such as stocks and bonds or financial market indicators or cash flow indicators such as interest rates or exchange rates. Therefore, they are sub-contracts that arise or are derived from Underlying contracts and financial instruments relating to off-balance sheet items (Radwan 2005: 58–59) They are investment tools derived from those assets, the value of which is combined with the values of one or more of the underlying assets, tools or indicators associated with them to create derivative investment tools from those sub-contracts within the scope of what is termed financial engineering (Robinson and Wrightsman 1988: 56) and defined financial derivative It is a contract between two or more parties whose value is derived from the value of the base price, the value of the base price or price depends on some basic market variables such as the interest rate, commodity price or foreign exchange rate, accordingly, derivatives are broadly compatible with the interest rate, commodities and foreign exchange risks. (Campbell et al. 2019: 48).

5. Uses of Financial Derivatives: Financial derivatives are used for the following purposes: (Macdonald 2006: 2).

5.1.   **Risk management:** Financial derivatives mitigate the risks that contractors are exposed to, such as the farmer when he sells grain before maturity and enters into a derivative contract to obtain a future value that guarantees protection against the risk of a decrease in its price.

5.2.   **Speculation:** These instruments are a method of betting and are designed to match different assets.

5.3. **Reducing transaction costs:** If the manager of one of the investment funds wants to sell shares and buy bonds, he will be obligated to pay fees to brokers in addition to paying trading costs, but in the case of using derivatives, he will achieve the same goals but at lower costs.

5.4. **Arbitrage:** It is used to circumvent the regulatory restrictions on taxes and accounting rules and depends mainly on price differences between markets globally.

6. The importance of financial derivatives in controlling risks: Controlling or avoiding risks is one of the important purposes that led to the use of derivatives, as these tools are well used, as they help companies manage their financial risks in a way that contributes effectively to controlling the risks of any future changes. Derivatives do not It eliminates risks in the market, but rather redistributes them only, as it is used to segment the risks and divide them among those who are willing to bear them, who are supposed to have the appropriate measurement and forecasting tools, and this leads to controlling the cost of risks and their distribution (Al-Mayali 2015: 13–14) in the past years, the development of Modern finance has turned into a mathematically complex field. There are very complex risks in financial markets that need very advanced methods to measure or model. Measuring and managing all these risks is the key to the continued success of companies. Derivatives are at the same time the main and most effective reason for risk management. Valuation of derivatives and structured financial instruments is a prerequisite and indispensable for all risk management, (Peter 1999: 1). The growing number of financial derivatives allows companies to manage their financial resources and risks in a flexible and tailored manner Its financial requirements, and it has an increasing importance in other areas, can contribute to the effective management of financing and risks to achieve profits and stability of the company, and it has the ability to fix or cancel the terms of future transactions, that these contracts have many attractive applications as an option to borrow money after a year from now at a price Consistent interest today However, the complexity of financial instruments and markets today and the accelerated pace of technological progress has greatly increased risk and incorrect use of financial instruments can lead to losses that can offset the gains of years of work such as the production and sale of cars. As for the volatility of markets and the complexity of financial instruments, understanding The sound of traded instruments and the effective management of market risks are the basic requirements for the lasting economic success of the company. Derivatives are the main reason for risk management and at the same time the most effective means of ensuring this, and as a result, they stand at the beginning and end of risk management, (Peter 1999: 158).

7. The relationship of the COVID-19 pandemic to the financial crisis: The year 2019 witnessed the COVID-19 pandemic crisis, which required plans to address it. The event is taking place, the old systems are becoming worn out and the urgent need for correct and suitable alternatives that can benefit from them in the future. Financial volatility is usually managed by hedging transactions (Chen et al. 2020: 1).

8. The impact of the COVID-19 pandemic on the Iraqi economy: The two researchers believe that Iraq's budget has been greatly affected by the drop in global oil prices, especially that Iraq's dependence mainly in its economy on oil resources and as a result cast a shadow on economic, investment and agricultural projects, as well as Closing the

border crossings and stopping the trade exchange between Iraq and the countries of the world, as well as greatly affected tourism in Iraq, which used to generate large sums of money to Iraq, and as a result, the Iraqi economy will be in great danger.

9. Impact of the COVID-19 pandemic on the financial statements: The pandemic is expected to affect the volume of production and sales and as a result affect the expected and announced profits in the companies' financial reports, and this will affect the credibility of these financial statements. Some companies are expected to be bankrupt, and the result will be the opposite of what It was disclosed in the financial statements in terms of the size of the assets and the strength of the financial position at the end of the year (2019). As a result, several procedures should be taken to disclose the effects and changes to the financial statements or to modify them and according to what was stated in the International Accounting Standard (IASB 10) subsequent events of the financial position, aiming This standard describes when the company should adjust the financial statements of events after the reporting period and the disclosures it should make about the date of approval of the financial statements and about events after the reporting period, the standard requires that it not prepare its financial statements on the assumption of going concern if events after the reporting period indicate The assumption of continuity is not appropriate and the events after the reporting period are those desirable and undesirable events that may occur between the end of the reporting period. The report and the date of approval of the issuance of the financial statements, two types of these events can be identified: the first type is those that give evidence of the conditions available at the end of the reporting period and that modify the events after the period covered by the report, and the second type are those that indicate the conditions that arose after the reporting period, Unadjusted events after the reporting period. (IFRS 2016: 871–880)

10. The potential effects of the outbreak of the COVID-19 pandemic) on the principles of recognition, measurement and accounting disclosure: The continuation of the global effects of the outbreak of the COVID-19 pandemic and the accelerated development affected by the global financial markets, reflected several accounting effects on companies represented in the halt in production and lack of employment And the instability that required the supply chain and weak funding with fluctuations in the value of financial instruments and a decrease in sales and profits, and companies had to consider carefully the effects of that pandemic and the possibility of exposure to potential risks related to all the material effects of this pandemic and disclosed them in financial reports. Features of the potential impacts of recognition, measurement and accounting disclosure from several aspects. Deloitte's research identified several aspects, including:) Deloitte 2019: 2)

10.1.   Impairment of non-financial assets (including goodwill)
10.2.   Inventory valuation.
10.3.   The provision for expected credit losses.
10.4.   Fair value measurement.
10.5.   Provisions of defaulted contracts.
10.6.   Non-fulfillment of commitments and plans to restructure debt.
10.7.   Liquidity risk management.
10.8.   Subsequent events after the end of the reporting period.

10.9.   hedging relationships.

11. Duties of corporate management in light of the expected effects: This reality will impose on companies what the management should do according to the following expected scenarios (PWC 2020):

11.1.   The effects of the COVID-19 pandemic are likely to reduce future cash flows or increase operating costs as well as any other additional costs.

11.2.   These events may affect the decline in the share price of companies, as the market value is less than the book value, and this is an indication of a decrease (low) in value that requires testing goodwill and intangible assets.

11.3.   Firms should update the assumptions and forecasts associated with the cash flow estimation used for impairment testing to reflect the potential impacts of the COVID-19 outbreak.

11.4.   Review of budgets, forecasts and other assumptions from the date of the previous impairment test that was used to determine the recoverable amount of the asset to reflect the economic conditions at the date of the financial position and in particular to address the increased risks and potential uncertainties of the outbreak of the COVID-19 pandemic.

11.5.   The expected cash flow input (multiple likely scenarios) may be the best way to estimate the recoverable amount than using a single scenario based on a single expected outcome to predict the increased risk and uncertainty as a result of the COVID-19 pandemic and the potential impact of measures taken to control can be included. The spread of the virus as additional scenarios in the expected cash flow estimation entrance.

11.6.   Review of the factors used in determining the discount rate to determine the recoverable amount to reflect the impact of the COVID-19 pandemic and the measures taken to control it. The researchers point out that whatever companies choose from different approaches to estimate expected cash flows and potential differences in expected future cash flows, they should reflect The end result is the expected present value of future cash flows when fair value is used in determining the recoverable amount.

12. Types of Financial Derivatives: Types of financial derivatives include (Al-Rubaie et al. 2011: 15-20)

12.1.   **Futures contracts:** legal contracts concluded in regular markets, representing a pledge of future delivery to the buyer or receipt from the seller, of the quantity and quality (the asset) agreed upon at a specific time, such as bonds, shares, gold, oil and currencies. One of the characteristics of these contracts is that the purchase takes place at a specified price. It was agreed in advance on the date of the contract that delivery would take place at a later and specific date to avoid the risk of price fluctuations (Al-Rawi 2008: 289).

12.2.   **Forward contracts:** are non-consolidated contracts between two parties to buy or sell an asset at a specified future time at an agreed-upon price today, such as the use of pension funds, foreign exchange forward contracts to reduce

foreign currency risk when foreign exchange positions are required on known future dates, given that Contracts are customized, they can be for non-standard amounts and dates, such as delivering an amount in the euro currency in exchange for a dollar amount at a later time (NAPF 2013: 4–5).

12.3. **Options contracts:** They are financial contracts that give the owner the right, but not the obligation, to buy or sell a specific asset through certain commercial securities at a specific price and during a period fixed in the origin of the contract, in which two main parties agree to the option contract, the option buyer and the option writer, and the options can be divided To the purchase option and the selling option, the philosophy of this type of contract is the attempt of each party to benefit from its expectations at the expense of the other party by enabling them to transfer their perceptions and expectations to practical application through a method corresponding to the right to carry out a purchase or sale process carried out by a particular party with a commitment he undertakes Another party and finding an acceptable price value in return for this obligation by the actual implementation of the right to buy or the right to sell, so a right (option) is matched by an obligation, an obligation to implement corresponding to a price, and there are two types of options. The contract is until the date specified for its expiry, and the European is not executed except on the date specified for its expiry according to the text of the agreement (Al-Douri and Aqel 2012: 32–35).

12.4. **Swaps:** They are agreements to exchange a series of future cash flows for another, as well as the underlying reference assets can be different, such as equity or interest rate, the value of the underlying asset will be distinctly taken from a publicly available price source, in an equity swap, it will be The amount paid or received is the difference between the share price at the start and end date of the contract (NAPF 2013: 4–5).

12.5. **Hybrid or hybrid derivatives:** They are defined as new financial contracts that do not distinguish between the characteristics of indebtedness instruments such as bonds and equity instruments such as stocks, but rather have mixed the features and characteristics of each of them, and therefore the hybrid contracts have some characteristics and characteristics of stocks of various types, as they carry Some of the features and characteristics of bonds at the same time, and as a result, it is not possible to deal with them as shares or bonds, as they are a homogeneous mixture between them (Boxani 2006: 70).

13. The accounting framework for controlling highly complex and comprehensive risks through accounting treatments and the use of financial derivatives: Applying the framework to the industrial sector Baghdad Transport and Real Estate Investments Company: This paragraph deals with the most important accounting problems that the industry sector may face and how to address them through the proposed accounting framework and focuses on the problems Which seems to be more frequent, it is certain that many other problems will appear, and with the continuing development of the situation, it is expected that subsequent accounting problems will also develop. Baghdad Iraq Company for Public Transport and Real Estate Investments (LLC) is mixed: Founded in 1990 in Baghdad and registered with the Companies Registration Department and

that the law It is governed by the Companies Law No. (21) for the year (1997) and its amendments, and that its activity is public transportation and real estate investments, and its headquarter is located in Baghdad/Al-Amriya/Abu Ghraib Road and it has a branch in Basra and one of its objectives is to expand the field of transporting petroleum products by exploiting financial resources The surplus is to supply the company's fleet with trucks, as well as to exploit the land it owns in the field of leasing and the activity of real estate and financial investments and its capital in (2019). It is (1,000,000) billion Iraqi dinars, which is fully paid.

13.1.   **Accounting treatments and financial derivatives for the elements of the financial statements:** The accounting treatment of the elements of the statement of financial position and income will be carried out with the use of options contracts for the company's financial investments in other companies, swap contracts for interest, lease and future contracts for the amounts provided by accounting treatments and financial derivative contracts and my agencies:

13.1.1. Non-current assets at book value: The company used the depreciation ratio for each type of non-current assets, a certain ratio that includes a minimum and higher, based on the depreciation system issued by the Council of Ministers (9) for the year (1994) for the private, mixed and cooperative sectors, so we suggest in this context the use of the ratio Estimated within the approved ratios, but with an increase of 2% from them due to the declines in these assets under the pandemic

13.1.2. Deferred revenue expenditures: The treatment is done by doubling the annual amortization of the value of the expenses and the approved annual amortization rate is 20%, the amortization rate will be changed to 40%, due to the pandemic that led to changes in market demand for products and expected actions of competitors and the significant change in the expected pattern of consumption Embedded future economic benefits.

13.1.3. Projects under implementation: This item includes a group of lands, buildings, constructions, machinery, equipment, unused means of transportation and investment spending, and it will be treated by a 10% reduction, due to the conditions that resulted from the pandemic.

13.1.4. Long-term financial investments: The company invests its money in buying shares in four companies, as shown in the table below (Table 1):

*   In order to hedge the risk of a drop in the share price, the company will enter into a put option contract that gives it the right to sell the share at a pre-determined price before or on a specified date. However, in the event of a decrease in the current price in the market, the company will implement the option and will achieve a profit equal to the loss that it incurs as a result of the decrease in the fair value of the share. In 1/1, we assume that she purchased a put option on the shares of the invested companies and paid the premium of the put option. This option gives her the right to sell one share at the cost price during the contract period that ends on December 31, 2019. The following table shows the assumed market price for the share from the date of the contract Until the end of the contract term:*

Table 1. Long-term financial investments before entering into a financial derivative contract

Account name	Nature of investment	Number of shares	The nominal value of the shares is the purchase cost	Purchase cost	The entity invested in
Long-term financial investments	Service sector	5500009	1	5500009	Al Badia Public Transport Company
	Service sector	1000000	1	1000000	Al-Ashar Passenger Transport Company
	Industrial sector	121955908	4.47	545142909	Khazar Road Company
	Agricultural sector	26616403	3.60	95819051	The Iraqi Company for the Production of Seeds
	Total	155072320		647461969	Al Badia Public Transport Company

Table 2. The estimated changes in the share price from the contract date to the expiry date of the investing companies

Date	The market price of the share Al Badia Company	The market price of the share Al Ashar Company	The market price of the share Al Khazir Road Company	The market price of the share The Iraqi Company
1/1	1	1	4.47	3.60
30/6	0.75	0.75	4.40	3.50
31/12/2019	1.25	1.25	5	4

The company designed the sell option to be a hedging tool against the risks of a change in share prices (the hedged item) for each of the Badia Company, the Khazar Road, Al-Ashar and Al-Iraqiya, and that the performance of the derivative gives the company the right to sell the share to each company at a price of (1) dinars during the contract. The market for the share is lower than the option price, then any company will not implement the option contract and

bear the cost of the option premium only, and in return it makes gains as a result of the increase in the fair value of the shares for the stock.

From the above, the gains and losses and the net effect on the income of the company when it enters into the options contract for each of the above companies can be summarized in the following table:

Details	Gains	Losses	Net impact on income
Al Badia Company	2750005	34000	2716005
Al-Ashar Company	250000	7000	243000
Khazar Road Company	73173545	853000	72320545
The Iraqi Company for Seed Production	13313202	186000	13127202
Total	89486752	1080000	88406752

13.1.5. Inventory: *Every element of the financial statements is subjected to exceptional measures due to the outbreak of the pandemic, so it is expected that selling prices will decrease or the value of inventory will decrease, and also the production quantity may be less due to the closure of factories or low demand for products, so the inventory will be evaluated according to the difficult circumstances that are going through by industrial companies by creating a provision for falling prices with an estimated suggested percentage (10%).*
13.1.6. Debtors: *With regard to the method that is used in estimating expected credit losses, there is no one method suitable for all, and there may be several methods based on local conditions and available information, and due to the increase in credit loss rates as a result of declining assets, we work on a neutral estimate that depends on the best information for future expectations. In recovering credit from debtors, provision will be made for doubtful debts to non-current activity receivables account at the rate of (10%).*
13.1.7. Cash: *The time value of cash will be reduced and cash will be treated according to the time value of money as in the current value tables for one year (Table 2–6) when exposed to difficult and exceptional circumstances such as the outbreak of the pandemic.*
13.1.8. The nominal and paid-up capital: *the company's capital is not affected in these circumstances, but the company has obligations, which are undistributed profits, so we suggest that an agreement be made with the shareholders to transfer the profits into shares that are distributed and increase the ownership rights.*
13.1.9. Creditors: *The account of the creditors is one of the short-term obligations that must be paid during the period and as a result of the exceptional circumstances of the outbreak of the pandemic, the company must enter into new agreements with creditors of different types to reduce the debts owed by them at agreed rates, and the shareholders' share of the dividends will be transferred in the form of shares that increase property rights. As for the accounts of the Retirement Department, the revenues received in advance, and the insurances received, all of these accounts are not subject to a reduction, because they include accounts belonging to the Retirement Department and*

deductions for non-affiliated persons cannot be negotiated with on the reduction. We suggest that the reduction rates be (10%) for private sector suppliers only.

13.1.10. Salaries and wages: *The company is required to abide by the health instructions that apply to workers by reducing numbers and social distancing due to the difficult exceptional circumstances due to the outbreak of the pandemic. It is required to reduce salaries and wages due to reduced resources and worker vacations. The company is required to re-contract with workers to reduce their wages in half or lay off workers and as a result reduce salaries and wages.*

13.1.11. Service requirements: *This item will be addressed through the proposed agreement with companies that provide services such as maintenance of buildings, machinery, means of transportation and furniture, provided that the amount of maintenance is 20% less than the previous one. That the other accounts be reduced from the insurance and other services by re-agreeing that the amounts of the remaining accounts be less by (10%).*

13.1.12. Revenues: *The outbreak of the pandemic increases cases of uncertainty about information and a decrease in transportation revenues is expected, so the company must work to update information, review expectations and increase the volume of revenues while giving customers incentives and privileges such as raising any late fines or their inability to fulfill their obligations, so the company works on Increasing revenues by at least (20%).*

13.1.13. Commodity requirements: *When working to increase the company's revenues, an increase in the commodity requirements of the revenues is required, and those requirements will be increased by (20%).*

Unrealized gains/losses			
Creditors	576907	Salaries and wages	231366256
		Service supplies	12802181
		Cash	90493286
		Projects under implementation	26711955
		Financial Investments Stock Options Contracts	88406752
Balance unrealized earnings	449203523		Current
	449780430		449780430

Statement of financial position before and after accounting treatments			
Account name	Adjustment amounts before	Amounts after adjustment	Difference
Assets:			
Non-current assets at book value	509726190	488461329	21264861
Deferred revenue expenditures	32932000	20800000	12132000

(continued)

(*continued*)

Statement of financial position before and after accounting treatments

Account name	Adjustment amounts before	Amounts after adjustment	Difference
Projects under implementation	267119550	240407595	26711955
Financial investments	397879408	397879408	0
Other assets: financial derivatives	—	886581085	)886581085(
Total non-current assets	1207657148	2034129417	(826472269)
Current assets:			
Inventory	11663536	10497182	1166354
Debtors	458852669	1003978306	545125637)
Cash	4614649988	4521073821	93576167
Total current assets	5085166193	5535549309	(450383116)
Total assets	6292823341	7569678726	(1276855385)
Funding sources:			
Long-Term Funding Sources:			
Nominal and paid-up capital	1000000000	2829101130	(1829101130)
Precautions	2891411181	3865280542	(973869361)
The total of the long-term financing sources	3891411181	6694381672	(2802970491)
Short-Term Financing Sources:			
Short term assignments	32671960	336234891	(303562931)
Creditors	2368740200	539062163	1829678037
The total of the short-term financing sources	2401412160	875297054	23138824106
Total funding sources	6292823341	7569678726	(1276855385)

Statement of financial position before and after accounting treatments

Account name	Adjustment amounts before	Amounts after adjustment	Difference
Revenues: Current revenue	2822688145	3387225774	**(564537629)**

(*continued*)

Statement of financial position before and after accounting treatments			
Account name	Adjustment amounts before	Amounts after adjustment	Difference
Down: Current Expenses:			
Salaries and wages	462732513	231366256	**231366257**
Commodity supplies	10019407	12023288	**(2003881)**
Service supplies	76162130	63359949	**12802181**
Depreciation and amortization	112308150	143666188	**(31358038)**
Inventory price loss	—	1166354	**(1166354)**
Doubtful debts	—	19411992	**(19411992)**
Taxes and fees	228175171	228175171	**0**
Total expenses	(889397371)	(699169198)	**(190228173)**
Surplus of current operations	1933290774	2688056576	**(754765802)**
Add: Transferred Revenue:			
Transfer revenue	23890000	23890000	**0**
Other revenue	5587984	5587984	**0**
Total transfer revenue	29477984	29477984	**0**
Total	1962768758	2717534560	**(754765802)**
Download Transfer Expenses:			
Transfer expenses except 384	1700000	1700000	**0**
Other expenses	176283493	176283493	**0**
Total Transfer Expenses	177983493	177983493	**0**
Surplus of current operations	1784785265	2539551067	**(754765802)**
Unrealized gains on impairment of assets and liabilities	—	449203523	**(449203523)**
	1784785265	2988754590	**(1203969325)**

Calculating the reserve before and after the accounting treatments			
Account name	The amounts after the adjustment	The amounts before the adjustment	Difference
Net profit before tax	1784785265	2988754590	1203969325

(*continued*)

Calculating the reserve before and after the accounting treatments

Account name	The amounts after the adjustment	The amounts before the adjustment	Difference
Goes down:			
Reserve for expansions 25%	446196316	747188647	(300992331)
Tax allowances 15%	200788342	336234891	(135446549)
Total downloads	(646984658)	(1083423538)	(436438880)
Surplus subject to legal reserve and accumulated surplus	1137800607	1905331052	767530445
Mandatory reserve 5%	56890030	95266553	(38376523)
Accumulated surplus 95%	1080910577	1810064499	(729153922)
Net profit before tax	1137800607	1905331052	767530445

Journal entry document

Statement	Debit	Creditor
Ongoing activity	2652519699	
Reserve expansions		747188647
Legal reserve		95266553
Accumulated surplus		1810064499
Entry distributing the surplus and making reserves		

Journal entry document

Statement	Debit	Creditor
Accumulated surplus/miscellaneous Reserve	886581085	
Ongoing Activity		886581085
Entry reverse part from surplus backlog precautions miscellaneous		

Journal entry document

Statement	Debit	Creditor
Other financial investments/derivatives Contracts	886581085	
Miscellaneous reserve		886581085
Entry other financial investments from various reserves to contract into financial derivative contracts		

Accumulated surplus			
1810064499	Accumulated surplus	886581085	Ongoing activity
		923483414	Accumulated surplus balance
1810064499		1810064499	

Reserves

Reserve type	Reserve expansions	Fixed asset rise reserve	Legal reserve	Free stock reserve	Fixed asset replacement reserve	Miscellaneous reserve	General reserve	Donated assets evaluation reserve	Accumulated surplus	Total
Balance 1/1/2019	28772676	5929443	382244657	13724165	9231611		6741859	18440000	1634257518	2099341929
Fiscal year profit	747188647		95266553			(886581085)			1810064499	1765938614
Balance 31/12/2019	775961323	5929443	477511210	13724165	9231611	886581085))	6741859	18440000	3444322017	3865280543

14. Purchasing investments and entering into derivatives: The surplus realized from carrying out accounting treatments and entering into financial derivatives for some elements of the financial statements can be employed in financial derivative contracts that increase the company's financial assets and enable it to hedge against highly complex risks, so these amounts will be employed to obtain An investment portfolio consisting of shares, provided that the purchase process is done by entering into future contracts with a long-term strategy, after the future prices and the assumed spot prices are set.

For the purpose of completing the research, the price present on the date of implementation was considered the forward price of the Baghdad Iraq Company, and that futures contracts are not subject to the profiling of global stock exchanges, so the forward contract arises according to the contracting parties' desire to agree on the contract period and the quality and size of the shares under contract.

And because Baghdad Iraq Company is a company that aims to achieve profit and reduce risks, so the surplus will be employed by entering to buy and sell shares, and as a result, the company takes the appropriate strategy to hedge its cash position, whether it is a long or short hedging strategy using the forward contract. One contract, i.e. three terms, and thus, the trading months are (April, August, December) of each year, and the tables are divided every four months, as these numbers express prices calculated in Iraqi dinars, and it was approved in the year (2019), which is the process of buying shares However, the company needs to sell the shares at a later time for any reason, and in anticipation of the stock price hike, the company has taken a long hedging strategy.

It is worth noting that the analysis of the effect of hedging futures contracts based on the financial literature that was mentioned in the theoretical side showed that most of the futures contracts are made on the date of implementation, as the percentage of futures contracts that take place on the execution date of the future contract amounted to more than 96%. The effect of hedging these contracts is accordingly.

14.1. **Analysis of the impact of hedging in futures contracts on the return of the Baghdad Iraq Company for Transport and Real Estate Investments:** In order to conduct this analysis, the company's hypothetical (estimated) data were adopted in the following table (as in the previous Baghdad Company for Soft Drinks), which displays current and future prices, which are the prices The present has high and low fluctuations, which exposes the company to market risks because it has a present position only, but when entering into the hedging strategy, this will lead to controlling the risks of price fluctuations.

The behavior of the estimated present and future prices - Baghdad Transport and Real Estate Investments Company

Contract	Months	Present prices	Forward prices
April contract 2020	1	1.800	1.800
	2	2.050	
	3	2.850	
	4	2.550	2.550
August 2020 contract	5	2.150	2.150
	6	2.250	
	7	3.150	
	8	3.000	3.000
December 2020 contract	9	2.550	2.550
	10	2.800	
	11	2.300	
	12	2.700	2.700

14.2. **Futures hedging strategy:** If the company needs shares, it will take a long hedging strategy, i.e., buy shares from now, in order to avoid the risks of stock price fluctuations in the future, and the previous table shows the analysis of the impact of hedging futures contracts on the return that you can get by using this strategy, you make profits from contracts in April, August and December (2020).

And the price analysis for the April, August and December (2020) contracts shows an increase in the present and future prices on the date of execution of the contract, as the hedged company made profits as a result of using the strategy of hedging future contracts in a row, and these profits completely compensate for the losses suffered by the cash positions on the date of implementation. The strategy of hedging futures contracts contributed to avoiding the risks that you are exposed to in the future.

If the company makes an immediate purchase of shares, it is not sure of the rise or fall of prices in the future, that is, it owns a present position only, and there is no corresponding center to compensate for the losses of the present position, and thus it is exposed to losses, but when entering the strategy of hedging futures contracts, i.e., buying From now on, the company protects itself from

the risks of price fluctuations in the future because it has two forward and present positions. If one of the two centers suffers losses, the profits of the other center will fully compensate for these losses. Here it becomes clear to us that the profits realized from the future positions compensated the losses of the present positions, and this supports acceptance (The use of derivative contracts/futures contracts in the event of an increase in the prices of futures contracts for shares leads to the protection of the investor from the risks of price fluctuations).

The results of the effect of hedging future contracts on the return of the Baghdad Iraq Company for Transport and Real Estate Investments

Contract	Forward position			Cash position			Net profit/loss
	Forward price today	The forward price is the month of execution	Profit/Loss on the Forward Position	Present price today	Present price in the month of execution	Profit/loss of cash position	
April 2020	1.800	2.550	0.750	1.800	2.550	(0.750)	0
August 2020	2.150	3.000	0.850	2.150	3.000	(0.850)	0
December 2020	2.225	2.700	0.150	2.550	2.700	(0.150)	0

From the foregoing, it is clear that the accounting risks and problems facing the Baghdad Iraq Company under the conditions of the outbreak of the pandemic need accounting treatments for the elements of the financial statements that are affected by those conditions and work to reduce and control risks through the gains achieved from accounting treatments, and then employ those gains By entering into forward contracts to purchase financial assets after hedging their values, and as a result, acquiring financial assets from accounting treatments and some derivative contracts, and employing gains in hedged financial assets, all of this enhances the company's ability to continue and address risks before they occur.

15. Conclusions and Recommendations

15.1.   Conclusions

15.1.1. Financial derivatives are complex tools to control risks by achieving a balance between gains and losses, and they are characterized by special accounting qualities, including small values and in some cases without value in a way that does not reflect the potential values of dealing in these tools, which constitutes an area for exposure to risks of non-disclosure and risks of weak control over them, as well as The multiplicity and difference in the purpose

and direction of the companies using them, the goal of dealing may be hedging or speculation.

15.1.2. There are factors that encourage the expansion of the use of financial derivatives, including the desire to avoid crises and fluctuations in the financial markets and the availability of human resources that can absorb the new financial tools, in addition to the scientific revolution in the field of information and communication technology.

15.1.3. Financial derivatives lead to an increase in the effectiveness of the early warning indicator for crises through the changes they make in the accounting measurement, as they contribute to the transformation of the volume of expected risks into acceptable risks that can be addressed and help protect money in order to avoid future risks.

15.1.4. Hedging using financial derivatives is primarily subject to appropriate and judicious selection of derivative instruments and the derivation of an accurate understanding using financial statements in line with International Accounting and Financial Reporting Standards to conduct reform benefiting from the exchange of experiences and knowledge.

15.1.5. Working to reduce and control risks through the gains made from accounting treatments, as well as employing those gains to enter into forward contracts to purchase financial assets after hedging their values.

15.1.6. It enhances the financial position of the Baghdad Soft Drinks Company by acquiring financial assets from accounting treatments and some derivative contracts.

15.1.7. Employing gains in hedged financial assets enhances the company's ability to continue and address risks before they occur.

15.1.8. The accounting framework follows the objective accounting policies and financial derivatives that are commensurate with each element of the financial statements exposed to risk.

15.2. **Recommendations:**

15.2.1. Companies should apply the accounting framework in light of financial circumstances and crises, as it includes accounting treatments that provide financial assets by which these crises can be overcome.

15.2.2. In order for the company to be able to continue and achieve profits, it requires it to adhere to the accounting framework that avoids risks, but rather enters them strongly in the financial markets.

15.2.3. The accounting framework that handles most of the elements of the financial statements and achieves gains enables the company to use those gains in financial derivative contracts.

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Discuss ASE Index Fairly in Corona Pandemic and Suggest Standardized Behaviors Model

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Abstract. This paper aims to discuss ASE index fairly in corona pandemic by discuss factors that help to manage ASE index positively in order to suggest model to manage ASE index in future crises. It concentrates on ASE index that measured based to weight by the market value of the capital. It depends on descriptive methodology to discuss ASE index fairly by explain ignorance affection and study behaviors of dealers' types to get their objectives. The paper finds that ASE index fairly is impacted by ignorance which caused betting on share price reducing by gambling, and caused finance expert misunderstand ways of supporting ASE index positively. These reasons caused unfair ASE index in corona pandemic. On other hand, dealers' dealings can impact ASE index based to their behaviors. Researcher suggested a model to face ignorance and get ASE index fairly based to standardize behaviors of all dealers' types as control system. This standardization of dealers' dealings can help to control gambling by classified factors based to abuse dealing or fair dealing and control ASE index fairly.

Keywords: ASE index · Managing crises · Speculations · Standardize behaviors system · Corona

1 Introduction

Jordanian economic sectors have been impacted by Corona Pandemic since 2020. It impacted economic negatively as result to close companies to face Corona which called the Great Lockdown. It was faced by government procedures and restructure of assets to meet new needs. These procedures reduced economic sectors risks. On other hand, some sectors as health sector and some banks got high profits.

Economic sectors impacts ASE, therefore, ASE index has related with listed companies success or fail. ASE index measured based to weight by the market value of the capital is affected negatively by reduced market price of shares, see Tables 1 and 2, also, the case increased foreign owner to sell shares more than buying shares, see Table 3. The decrease in the ASE index in spite of companies' profitability such as banks need to be discussed. "The impact was because of uncertainty" [1].

The reducing of market price is impacting shares owners' credit standard negatively beside it causes loss in case of selling shares. Equity owners got in shock [1].

Managing crises in ASE after equity price shock concentrated on closing deal from march/2020 until May/2020 [3]. The dealing was based to instructions issued by the

Table 1. Index of stock prices weighted by the market value (point)

2020	2019	2018	2017	2016
3049.6	3573.8	3797.1	4009.4	4069.7

Resource: by author based to data from [2]

Table 2. The listed companies' market value in ASE based to sectors (milliard)

Year	Industry	Services	Financial	Total
2016	3.531	2.744	11.065	17.339
2017	3.452	2.654	15.857	16.963
2018	3.101	2.399	10.622	16.127
2019	3.432	2.250	9.252	14.915
2020	3.640	1.957	7.311	12.998

Resource: by author based to data from [2]

Table 3. Foreign owner dealing shares in ASE

	2020	2019	2018	2017	2016
Foreign owner **buying shares**	96.8	528.7	1231.8	994.9	666.5
Foreign owner **selling shares**	164.4	414.6	747.3	1379.2	429.4

Resource: by author based to data from [2]

Securities Commission to obligate dealing by margins selling or buying from 5% to 2.5%. Concentrating on dealing by margins without understand ways of direct ASE efficiency from financial experts cause other ignorance to manage crises positively [4].

On other hand, betting on the share price decreasing rather than increasing will direct ASE index to be reduced.

1.1   The Problem

There is a need to discuss ASE index fairly that measured based to weight by the market value of the capital. ASE index has been impacted by corona pandemic negatively since 2020 in spite of government supports and some listed companies success. Leaders found the increase of the problem in ASE from 2008 and try to solve the problem by traditional ways as increase credit to increase dealings or increase margin of dealing [5], the problem questions are as follow:

- Is ASE index fairly impacted by accepted ignorance?
- Is there a suggestion to control ASE index fairly in crises as a system?

1.2 The Importance

This paper is important because it discusses ASE index fairly. It helps speculators and leaders to understand ignorance impacts on loss. It gives practically case to explain impact of ASE index fairly based to accepted ignorance by law. It gives suggestion to solve the ASE index unfairly based to dealers' behaviors standardized in order to control ignorance impact based to system. The system can help to improve controlling ASE by technology.

1.3 The Objectives

The study aims to find the following:

- To discuss impact of accepted ignorance by law on betting, and finance experts misunderstand and ASE index factors.
- To suggest a model in order to manage ASE index in future crises based to dealers' behaviors standardization as system.

1.4 The Methodology

It uses the descriptive methodology. It used rules content analysis to find accepted ignorance by law that impact ASE index. It used account data from annual reports during 2018–2020 to build tables in order to classified dealers' behaviors based to dealer's types, objectives, and abuse possibility.

1.5 Literature Review

There is a need to find market abuse by detecting in the suitable time [6]. Companies are impacted by manipulation. It means as a trader, or the complicity of a group of traders are impacting forces of demand and supply to achieve a private interest. It requires finding a special section in the financial market to monitor electronic trading in the shares of these companies to understand the sources of manipulation [7]. Technology can help to find abuse when there is standardized of dealers' behavior [8]. Some researchers propose a linguistics-based text mining approach to demonstrate the process of extracting financial concepts from the Security Exchange Commission (SEC) and litigation releases (LR). It shows dealers abuse behavior with the case time [9]. Investigate the adequacy of solving market abuse problem based to securities services act can be done by analysis law ways to solve market abuse to find its adequacy and suggest other ways [10]. Some researchers explained that literature review shows financial fraud reasons, which are developing new fundamental conflicts of interest and perverse incentive structure in financial industry. Loser's cattle of speculators without experience in financial market. The increasing of apply complexity as result to technology, law, financial innovation, and many different financial products. There is increase in the use of justified secrecy which impact ignorance increasing [11]. As importance of voluntary disclosure in corona, some researchers examined voluntary disclosure quality and its determinants among manufacturing companies listed on ASE. He found a positive correlation between (company's size, age, and

profitability), and the quality of voluntary disclosure [12]. Other researchers discussed and analyzed the backstage of fraudulent activities in capital market, which classified to traditional and modern approaches in order to use it in detect and prevent fraudulent activities, and explained that it can be done based to qualitative and data driven techniques [13]. While, other researchers studied impact of cash flow resource of operational, investment and finance on profitability within corona crises. They studied annual reports of industrial companies which was listed in the ASE in Jordan and found low level of statistically significant impact [14].

2 Discuss Ignorance and Law Impact ASE Index

Ignorance impacts ASE index fairly because of unclear of listed companies different loss and different profitability. Ignorance causes loss of measure fair price of shares. It causes dealing by gambling rather than dealing in certain environment, therefore, fears of ASE dealers cause unfair ASE index.

Financial ignorance increasing and caused complexity as result to technology, law, financial innovation, and many different financial products [11].

- Accepted financial ignorance by law obligatory to keep company secrets. See, Jordanian Civil Law, article (51): It clarifies that the legal person as company enjoys all rights and has an independent financial liability, also, it has someone to represent him. Only the person who represents him by the elected board of directors and the general manager knows company details [15].
- Accepted financial ignorance by law as held contract based to essential maters without details, see Civil Law, article (100)/2: all essential maters must be accepted between dealers, and when there conflict the rule will apply ways to solve conflict as use custom [15].
- Accepted financial ignorance by law obligatory to private custom. See, commercial Law from year 1966 to 2021 No 12, article (4): shows applied private custom instead of general custom [16].
- Accepted financial ignorance by law obligatory to use account standards with choices of account policies to increase or reduce assets as depreciation account and based to essential maters without details. Private custom is applied rather than general custom. See, Corporate Governance Instructions for Listed Shareholding Companies for the Year 2017, article (14): The Company provides essential and periodic information to shareholders, beside, accounts data according to the international standards for financial reporting (IFRS) [17].
- Accepted financial ignorance by law obligatory to deal with shares in financial market without knowing the share real price. See, Instructions for trading securities at the Amman Stock Exchange for a year 2018, article (3): Only the dealing price is the accepted price in stocks market. Article (44): show accept gap between real share price and share market price [18].

Law has articles to accept level of financial ignorance. Financial ignorance of the law is not excuse even it had got adjusted and Law has accepted dealing of contracts

based to essential maters without details. On other hand, law has to balance between level of accepted financial ignorance by law and dealers needs to avoid misunderstand that leads to conflict. Balance is important to protect wealth. By high level of ignorance, wealth will get in gambling.

Ignorance impacts financial contracts, account, and speculators behaviors, as follow:

- **Contract:** dealing contracts between the company and customers or shareholders are done based to the availability of essential matters between dealers. Law obligates shareholders to give chairman general authorized in Public Shareholding Companies. When chairman gets general authorization, he gets flexibility to managing risks as transfer loss to dealers by sell investing or develops. But, as result to get chairman general authorization by law from almost shareholders, the shareholders will not know ways of managing or investing or financing and its restructure. And law forbidden shareholders from interference in company business. Law accepts financial ignorance which impact financial evaluation or investing evaluation. Details and company custom are just known by chairman of the board of directors and executive directors. Company can adjust details to meet their aims.
- **Account:** law acceptance financial ignorance on fixed assets by depreciation regardless of assets market price at time of evaluation, also stores has account policies as cost value which not show store real price in market at time of evaluation. On other hand, account of administrative and operational costs is increased by accounting assets depreciation. Possibility is impact accounting and accepted by law as precautionary hypotheses in accounting. It causes to reduce expect lose even it not happened and cancel expect profit even it may happened. Obligating account standard by law is impact by financial ignorance of apply standard because standard may not has account procedures. Manager can use the suitable account procedures to meet manager or leaders' aims.
- **Speculations:** Law considers selling public shareholding company shares in financial market a legal personality; therefore, it is independence of its real value. Law forbidden informs company secrets. Company Information is limited to meet law of share value based to share market price by speculation in financial market.

2.1 Discuss Impact of Betting by Speculators on Shares Price Decreasing

Speculators are betting on increasing of shares price and other are betting on shares price decreasing. When betting amount on share price decreasing is more than betting amount on shares price increasing in case of uncertainty and in crises it will reduce financial market index of share market price.

Betting on shares price decreasing is used in ASE by Margin Trading and Short Selling as result to lend shares and sell it in current price until time of reducing shares market price as expecting, then lender will buy shares in low price and get it back to lender (broker).

Jordan securities commission reduced in 2020 the maintenance margin as standard of guarantee in order to increase dealing by margin trading [2].

All listed companies in ASE can be financed by margin based to Jordan securities commission instructions science 2006 but companies have to meet standards. If companies meet the standards, it will be accepted speculator to deal companies shares by margin trading [19, 20].

These ways of dealing obligate to get lender mortgage shares from borrower and when shares get reducing market price lender sell mortgage shares even in loss case to cover lending operation risk. As result to these ways the ASE index will be reduced by case of possibility to shares market price increase. Therefore, any way to increase shares market price will cause speculators loss betting on share price decreasing. These will be resistant to share price increasing and reduce ASE index.

2.2 Discuss Misunderstand Supporting ASE by Finance Experts

Misunderstand details will cause unsuitable measure of risk tolerance, therefore, using of account and evaluate goals based to risk tolerance is misguided and exposes institutions to risks associated with providing unsuitable advice. This comes because of short term behavioral distortions [21], and because the information insensitivity of debt in structure of debt contracts, there will be opacity increase liquidity in markets and cause panics involve debts [22].

3 Discuss Factors to Manage ASE Index Positively Based to ASE Dealers' Types

It is important to understand relations of dealers' powers, interests, and behaviors as way to impact ASE index.

There are many factors to manage ASE index by leaders positively based to understand interest of dealers and their powers. When they get interest they will use power to impact ASE index positively but when they lose interest they will not use power to impact ASE index (Table 4).

Dealers interested in ASE can increase dealing and direct ASE index positively as follow:

- **Government interests:** are to use company product, to invest in company shares, to get tax, to cover citizen needs, to solve economic crises, to apply monetary policy tools, to apply ministry of finance tools. Government has legal affection on shares based to its intervention between demand and supply. Self-sufficiency case cause companies' possibility to get equilibrium because of its efficiency as in developed countries, But in Jordan, local companies lose self-sufficiency case, therefore, government tries to make equilibrium by effect demand or supply. Government intervention on companies' environment can reduce or increase these companies shares market price.

Table 4. Dealers powers resources in ASE

Dealer in ASE	Powers resources
Government	Capital is huge, obligate law, and can give support to companies
Listed company	Knowledge and information about its share real price, also uses treasury share speculation, and can use positive or negative promotion
Speculators alliance	Capital is huge to direct consecutive order to impact share market price increasing or decreasing
Chairman board of directors	Understand the share real price, can impact finance, investing, and marketing in company which impact the company share market price
Stock exchange company	Obligates law to list financial papers or to deal or to stop deal, and own almost companies information than speculators
Stock exchange alliance	Obligates rules dealing and listing based to the agreement between them and transfer dealing between ASE and other stock exchange
Brokers	monopoly dealing by them and owning current information of dealing practical

Resource: by author

- **Company interests:** are to increase their profit, to growth assets value, to increase its share market price, to get protection from lose, to get continuity, to expand its market, to get government and dealers support. These interest can cause company share market price increasing but company interest my apply deflation strategy to face risk by reduce sales which reduce profit, therefore, it causes share market price reduce.
- **As a company ASE interests:** are to increase their profit by expand its increasing listed companies and its deals locally and internationally, on other hand, ASE may obligate companies with difficult rules to cancel listed weakness companies. This will get these company speculators in lose because of bad reputation.
- **Financial markets alliance interests:** are to increase their profit by expand its increasing listed companies and its deals locally and internationally, on other hand, some markets may become way to transfer speculators capitals to other market and cause reducing share market price, also, a financial market may lose the alliance and lost trust which reduce share market price.
- **Speculators alliance (persons or companies) interests:** are to get highest profit in short term by direct share market price to meet there needs. they direct share market price to increase by their demands of buy in case they use short sale as mortgage on increasing price, on other hand, they direct share market price to reduce by their supply of sell in case they use stock borrow. Alliance gives them power and it is difficult to prove their abuse.
- **Chairman interests:** are to own new shares in order to support his position in the company but he may interest to get extraordinary profit by indirect speculations as

possible to own the secret information, therefore, he may get interest by reduce the company share market price after giving possibility bad promotion and sell some shares to reduce price, after that, he buy shares and give good news to increase the company share price.

- **Brokers' major interest:** is to increase his profit.

Ignorance causes a degree of gambling in ASE and it impacts the flock speculators as major factor deal based to ASE index without rational dealing. It causes loss of their wealth.

4 Suggest Model Based to Dealers Standardize Behaviors to Impact ASE Index Positively

As result to accepted ignorance by law on ASE index fairly, there is a need to keep ASE index fairly and protect wealth. The idea is to make a system to control ASE index fairly. It depends on studying dealers' aims, behaviors and analysis suitable behavior or abuse to get the fair market price. Dealers' have positive impact and negative impact on ASE index. Standardization cause possibility to follow the positive behaviors and

Table 5. Standardize behavior of government to affect share price positively

Government interests based to behavior cause increasing of share market price	Behavior is availability	Possibility of abuse	Behavior is not availability
Government buys shares to invest in listed companies beside a flock speculators			
Government as sharer in listed company cause merge with other listed company to solve companies problems beside a flock speculators			
Government causes liquidity by extinguishing treasury bonds which increases demand on a flock speculators shares			
Government reduce tax in ASE			

control behaviors to find deflection as system to understand abuse or negative impacts on ASE index.

To face accepted ignorance by law and control it, researcher will concentrate on standardize behaviors of all dealers' types. Suggestion will show expect behavior and show steps to control or direct ASE index by direct the behaviors. Dealers in ASE are: government, listed company ASE as a company, chairman of board, financial markets alliance, broker, and speculators alliance. Every dealer can impact ASE index.

Dealers standardize behaviors is important to build the suggestion model. It can show the impact of behavior on ASE index by understand availability of behavior impact and classified it to abuse or not abuse.

The output of every table will show factors impact ASE index based to dealer type and standardized behavior. The suggestion success need corporate from leaders to get

Table 6. Standardize behavior of listed company to affect share price positively

Listed company interests based to behavior causes increasing of share market price	Behavior is availability	Possibility of abuse	Behavior is not availability
Listed company build reputation by announce its future successful deals which increase demand on a flock speculators shares and increase its market price			
Listed company build reputation by announce its distributed profit every 6 months which increase demand on a flock speculators shares and increase its market price			
Listed company buy its treasure stock to cause demand which increase demand on a flock speculators shares and increase its market price			
Listed company divide its share to increase demand by low price which increase demand on a flock speculators shares			
Listed company interests to sell its treasury stocks by increasing price and use buy orders at a consecutive increasing price which cause increasing a flock speculators market price shares			
Listed company interests to raise it amount of credit by increasing its shares market price to get suitable credit classification. It uses buy orders of treasury stock at a consecutive increasing price which cause increasing a flock speculators market price shares			

comparing between dealers and their behaviors and classified behavior as abuse or fair behavior to direct supply and demand in ASE.

Table 7. Standardize behavior of ASE as a company to affect share price positively

ASE as company interests based to behavior causes increasing of share market price	Behavior is availability	Possibility of abuse	Behavior is not availability
ASE as company interests to get return by activate ASE demand with reducing its commission which support a flock speculators shares market price increasing			
ASE as company interests to get return by activate ASE demand with increasing the short selling margin for speculation			
ASE as company interests to cancel some bad listed company to keep trust which support a flock speculators shares in other companies and increase market price			
ASE as company interests to reduce listed companies by difficult conditions to increase demand on some companies a flock speculators own its shares			

Table 8. Standardize behavior of speculators alliance to affect share price positively

Speculators alliance interests based to behavior causes increasing of share market price	Behavior is availability	Possibility of abuse	Behavior is not availability
Speculators alliance interests to raise share price by agreement to buy share in small amounts with raise price based to apply buy orders at an increased price			
Speculators alliance interests to raise share price to conflict other speculators alliance by agreement to buy share in small amounts with raise price based to apply buy orders at an increased price			
Speculators alliance interests to raise share price by orders of buying and selling based to mathematical equation to cause increasing share market price			
Speculators alliance interests to protect share price by refuse selling even share market price get in drop			

Standardize dealers behaviors to impact ASE index positively can be shown as a suggestion to control ASE based to the following tables (Tables 5, 6, 7, 8, 9, 10, 11):

Table 9. Standardize behavior of chairman of board to affect share price positively

Chairman of board of directors interests based to behavior causes increasing of share market price	Behavior is availability	Possibility of abuse	Behavior is not availability
Chairman interest to get shareholders loyalty and reputation in market as expert or profit or get personal high credit classified as owner shares with high market price by promote good news as the future successful deals or get government support to increase demand on company shares			
Chairman interest Chairman interest to get shareholders loyalty and reputation in market as expert or profit or get personal high credit classified as owner shares with high market price by authorized speculators to deal with the company shares by secret contracts and announce future successful deals and possibility of distributed profit			
Chairman interest to get shareholders loyalty and reputation in market as expert or profit or get personal high credit classified as owner shares with high market price by speculators alliance to buy shares with increasing price with an consecutive orders			

Table 10. Standardize behavior of financial markets alliance to affect share price positively

Financial markets alliance interests based to behavior causes increasing of share market price	Behavior is availability	Possibility of abuse	Behavior is not availability
Financial markets alliance interests to get trust and found demand on its listed companies shares and increase share market price by promote the alliance			
Financial markets alliance interests to get trust and found demand on its listed companies shares and increase share market price by possibility of buying shares from different countries			
Financial markets alliance interests to get trust and found demand on its listed companies shares and increase share market price by production integration to reduce cost and increase companies' profits			
Financial markets alliance interests get demand and it cause entering an alliance of foreign speculators or foreign shareholders use buying small amount shares in increasing price with consecutive orders			

Table 11. Expect standardize behavior of broker to affect share price positively

Broker interests based to behavior causes increasing of share market price	Behavior is availability	Possibility of abuse	Behavior is not availability
Broker interests to increase his returns and keep reputation as good broker by advise speculators to buy a flock speculators shares because possibility of its market price increase based to real trusted resources			
Broker interests to increase his returns and keep reputation as good broker by use general authorized from many customers to buy company shares as a flock speculators			
Broker interests to increase his returns by give customers short sale to raise the bet on the share market price increasing			
Broker interests to increase return by support a flock speculators share market price to get secret profit by use general authorizes from customers to stop selling in case share market price get in decreasing and buy shares in case it get in increasing case			
Alliance brokers to stop selling shares in case of decreasing price			
Broker has secret agreement with alliance speculators to buy small amounts of shares in increasing price based to consecutive orders and promote good news about the company or announce about future order to buy big amount with increasing price			

5   Conclusions

The paper finds that ASE index is impacted by ignorance, betting on share price reducing, and finance expert misunderstand ways to support ASE index positively. These reasons caused unfair ASE index in corona crises. As result to control ASE index fairly researcher suggested model to Face unfair ASE index in future crises based to standardize behaviors of all dealers' types to force supply and demand in ASE.

6   Recommendations

- Leaders have to take care impact of acceptance ignorance by law to estimate level of ASE index fairly.
- Leaders have to use relations of dealers' powers, interests, and behaviors as way to impact ASE index rather than traditional tools.
- Leaders can use the suggestion model of dealers' standardized behaviors in ASE to control and direct dealers' behaviors to get positive index.

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"Public Relations' Ability in Raising the Level of Community Awareness About the Importance of Volunteering" Sawaed19 as a Case Study

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Abstract. Through studying, evaluating, and analyzing the many actions, campaigns, and programs of the Public Relations Department at Sawaed 19, this study intends to determine public relations' role to raise community awareness about the value of volunteering. A questionnaire and an interview were employed as research methods, and the team used a descriptive analytical methodology that was suited for the research. Sawaed 19 provided a random sample of 166 volunteers for the survey. The most notable findings were: Palestinian citizens use social networking sites with little regard for materials related to volunteer work, volunteer work in Palestine is unorganized, and there is a lack of legislation and laws that protect the rights of citizens who volunteer; in conclusion, the team recommends: the importance of supporting the role of public relations in Sawaed.

Keywords: Public relations · Community awareness · Volunteering · Sawaed 19

1 Introduction

During the previous two years, the coronavirus outbreak had a devastating impact on almost every element of life in Palestine and around the world. Limiting the fields of volunteering to health epidemiology and ignoring the rest of the fields of volunteering in society to life in Palestine is a critical issue, because volunteering has the ability to mitigate all of the negative effects of Corona in Palestine in terms of economic, social, and other aspects, whether due to the occupation of the beloved homeland or for a variety of other reasons. The relevance of increasing community awareness of volunteer work rests in increasing people's sense of belonging to the community and the importance of their participation and aid. The team came up with the idea for the study after browsing social networking sites and noticing the launch of a volunteer program website called Sawaed 19, and after contacting public relations officials in this startup institution, which has been operational since 2019, the team decided to research this topic, as the study's main problem is to determine the ability of public relations activities, programs, and campaigns to attract volunteers. This study will answer the following main questions: How does the Public Relations Department, through the Sawaeed 19 platform, raise community awareness about the importance of volunteering?

2   Theoretical Framework

This study relies on Maslow's hierarchy theory for its needs and suitability for the study's purposes. Public relations professionals use Maslow's hierarchy as a communication theory to deliver the right message to the right audience. This theory gives the public relations field a better insight into determining human priorities for meeting different needs, which affects how public relations The study focuses on raising societal awareness in Palestinian society, which has a variety of social issues that dozens of non-profit organizations work on reliefng. The role of PR is to communicate with volunteers and potential volunteers to enhance and expand the effectiveness of non-profit organizations as they are an important asset to society. (Hall and Innes, 2008).

The "two-way symmetrical communication" model was used by the research team. In context, the communication is from the organization to its audience (internal and external) and from the public to the organization. The main objective of public relations is limited to persuasion, planned and based on scientific foundations, as well as converting this persuasion into a behavior that supports the organization and its goal in the message (convincing them of the importance of volunteering in this study, thus attracting them), which also includes feedback from the audience. (Crichton; O'Connor; Flynn, 2013, p. 72).

3   Literature Review

The study was conducted in reference to 10 literature reviews of past studies. The complete set of past studies served as inspiration for the research team in order to design a study that was well-focused on public relations and volunteers. It aided in establishing the current research's topic and questions in a way that corresponded to the research's goals, as well as outlining the methodology employed in the current study.

4   Methodology and Procedures

Study Methodology: The descriptive-analytical method was chosen by the researchers because it best fits the nature of the study. The descriptive approach is defined as a method of studying scientific phenomena or problems by first doing a scientific description and then arriving at logical explanations with evidence and proofs that allow the researcher to set specific frameworks for the problem, which are then used to determine the research's results. (Mahmoud, 2021).

Study Population: The exterior audience of Sawaed 19, which consists of (282) individuals, is represented by volunteer Palestinian people with Sawaed 19, and an interview with Maysa Al-Shami, the public relations, media, and community building officer in the internal audience of the 19 media saddlers.

Study Sample: The research team employed a questionnaire instrument and released it to an external audience for the forearms of 19 volunteers via the platform, with a total of (166) people chosen at random.

Study Tool: The researchers used the questionnaire tool as one of the study tools to collect all the required information from the study community, analyze it, and come up with the results.

Repetitions of the paragraphs of the axes of the questionnaire

The following tables explain in detail all the axes of the questionnaire submitted to the study sample; indicating the number of repetitions for each answer of each statement (Table 1).

Table 1. Volunteer work fields promoted by public relations in Sawaed 19

Statement	Always	Often	Sometimes	Rarely	Never	Total
Special needs	42 (25.3%)	42 (25.3%)	56 (33.7%)	23 (13.9%)	3 (1.8%)	166
Public spaces	38 (22.9%)	55 (33.1%)	62 (37.3%)	10 (6%)	1 (0.6%)	166
Charity	40 (24.1%)	53 (31.9%)	48 (28.9%)	22 (13.3%)	3 (1.8%)	166
Humanitarian assistance	42 (25.3%)	56 (33.7%)	54 (32.5%)	9 (5.4%)	5 (3%)	166
Environmental issues	22 (13.3%)	56 (33.7%)	57 (34.3%)	22 (13.3%)	9 (5.4%)	166
Animals	20 (12.0%)	49 (29.5%)	50 (30.1%)	18 (10.8%)	29 (17.5%)	166
Education	26 (15.7%)	75 (45.2%)	50 (30.1%)	12 (7.2%)	3 (1.8%)	166
Health care	32 (19.3%)	48 (%28.9)	39 (%23.5)	34 (%20.5)	13 (7.8%)	166
Social issues	44 (26.5%)	51 (30.7%)	56 (33.7%)	14 (8.4%)	1 (0.6%)	166
Sports	16 (9.6%)	47 (28.3%)	50 (30.1%)	24 (14.5%)	29 (17.5%)	166

The average field of volunteer work promoted by public relations in Sawaed 19 is 3.48, at a rate of 70%, which is an average percentage, and the "Social Issues" and "Humanitarian Aid" items got the highest arithmetic average, which is equal to 3.74 and 3.73, and at a rate of 75%, which is an average percentage. While the lowest percentage was the animals, they got an arithmetic average of 3.08 by 62%, which is an average percentage. This indicates the focus of public relations in 19 Sawaed on the social and humanitarian aspect on other fields, which is an urgent necessity in the State of Palestine due to the circumstances in which it is located (Table 2).

The average range of motives that encouraged you to do volunteer work was 1.79, or 89%, which is a high percentage, and that the highest paragraph was "social personality

Table 2. Personal motivational factors to volunteer

Statement	Agree	Disagree	Total
University requirement	84 (50.6%)	82 (49.4%)	166
Spare time	127 (76.5%)	39 (23.5%)	166
Confirmation of self-confidence	143 (86.1%)	23 (13.9%)	166
Friendships	121 (72.9%)	45 (27.1%)	166
Social/personality development	157 (94.6%)	9 (5.4%)	166
Strengthening national belonging	132 (79.5%)	34 (20.5%)	166
Grasp on community problems	153 (92.2%)	13 (7.8%)	166
Gain new skills	131 (78.9%)	35 (21.1%)	166
Increase practical experience	147 (88.6%)	19 (11.4%)	166
Community service contribution	140 (84.3%)	26 (15.7%)	166
Employment Opportunity	114 (68.7%)	52 (31.3%)	166
Cultural background development	129 (77.7%)	37 (22.3%)	166
Satisfaction of psychological and social needs	145 (87.3%)	21 (12.7%)	166
Religious values	108 (65.1%)	58 (34.9%)	166

development" and obtained an arithmetic average of 1.95 by 98%, which is high, while the lowest paragraph was "university requirement" and obtained My arithmetic average is 1.51 at 76% which is average. This confirms that the main driving force behind youth volunteering is the self, as they aspire to satisfy their need for self-knowledge, development, and satisfaction, and volunteering is one of these means as shown by Maslow's hierarchy of needs (theory of the study) (Table 3).

The results confirmed that the average range of obstacles that limit volunteer opportunities in the community is 1.76, at 88%, which is a high percentage, and that the highest paragraph was "lack of sufficient awareness of volunteering programs and their fields" and got an arithmetic average of 1.92 at 96%, which is a high percentage, while

Table 3. Obstacles that limit volunteer opportunities in the community

Statement	Important	Not important	Total
Insufficient time	131 (78.9%)	35 (21.1%)	**166**
Unorganised volunteering in Palestine	122 (73.5%)	44 (26.5%)	**166**
Lack of institutions directed to the volunteer work	133 (80.1%)	33 (19.9%)	**166**
Insufficient invitation of volunteer work participation	110 (66.3%)	56 (33.7%)	**166**
Weak morale	122 (73.5%)	44 (26.5%)	**166**
Negative stereotypes about voluntary organisations	108 (65.1%)	58 (34.9%)	**166**
Lack of sufficient awareness of volunteering programs/fields	152 (91.6%)	14 (8.4%)	**166**
Lack of legal legislation regulation of voluntary work	111 (66.9%)	55 (33.1%)	**166**
Lack of awareness on the benefits of volunteering	145 (87.3%)	21 (12.7%)	**166**
Lack of family encouragement for children to participate in volunteer work	132 (79.5%)	34 (20.5%)	**166**
Weakness of voluntary organizations' definition of their identity and scope of work	143 (86.1%)	23 (13.9%)	**166**
Doubting the credibility of voluntary organizations	118 (71.1%)	48 (28.9%)	**166**
Paid work preference over volunteer work	130 (78.3%)	36 (21.7%)	**166**
Work nature and environment within the voluntary institutions	117 (70.5%)	49 (29.5%)	**166**
Volunteering that requires physical effort	115 (69.3%)	51 (30.7%)	**166**

the lowest paragraph was "the presence of Some negative stereotypes about voluntary institutions." And I got a mean of 1.62 with a rate of 81%, which is a high percentage. This indicates the necessary public relations role in Sawaeed in raising awareness of volunteering programs and directing individuals towards it (Table 4).

The results indicated that the average field of how to evaluate the performance of public relations in Sawaed 19 is 4.05 with a rate of 81%, which is a high percentage, and that the highest paragraph was "its activity through social networking sites and the diversity of its content" and obtained an arithmetic average of 4.30 by 86%, which is

Table 4. The role of public relations in Sawaed 19 in finding ways and means to encourage citizens to volunteer

Statement	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Activating the role of the various media method in educating community members about the importance of volunteering	72 (43.4%)	68 (41%)	20 (12%)	3 (1.8%)	3 (1.8%)	166
Carry out research and field studies on volunteer work	44 (26.5%)	80 (48.2%)	35 (21.1%)	2 (1.2%)	5 (3.0%)	166
inclusion of volunteer concepts and importance in educational institutions' programs and courses	58 (34.9%)	64 (38.6%)	39 (23.5%)	2 (38.6%)	3 (1.8%)	166
Supporting institutions and bodies that work in the field of volunteer work	56 (33.7%)	72 (43.4%)	24 (14.5%)	13 (7.8%)	1 (0.6%)	166
Cultivating principles and values that encourage volunteer work	50 (30.1%)	76 (45.8%)	33 (19.9%)	6 (3.6%)	1 (0.6%)	166
Training and rehabilitation of youth wishing to volunteer	54 (32.5%)	76 (45.8%)	25 (15.1%)	8 (45.8%)	3 (1.8%)	166
Influential lectures and seminars on the importance of volunteering	64 (38.6%)	68 (41.0%)	27 (16.3%)	4 (2.4%)	3 (1.8%)	166
Networking between volunteers and organizations	72 (43.4%)	56 (33.7%)	31 (18.7%)	6 (3.6%)	1 (0.6%)	166

a high percentage, while the paragraph The least was "working statistics and studies related to volunteering" and I got an arithmetic average of 3.76 by 75%, which is an average rate. This indicates the good use of public relations in Sawaed 19 for social networking sites, which is an important tool for raising societal awareness (Table 5).

Table 5. How do you evaluate the performance of public relations in Sawaed 19?

Statement	Excellent	Very good	Neural	fair	Poor	Total
Its activity through social networking sites and the diversity of its content	72 (43.4%)	73 (44%)	18 (10.8%)	2 (1.2%)	1 (0.6%)	166
The ability to effectively network between volunteers and institutions	40 (24.1%)	87 (52.4%)	32 (19.3%)	6 (3.6%)	1 (0.6%)	166
Ease of use of Sawaed's website	54 (32.5%)	77 (46.4%)	32 (19.3%)	2 (1.2%)	1 (0.6%)	166
Effective and fast public communication	50 (30.1%)	87 (52.4%)	20 (12%)	8 (4.8%)	1 (0.6%)	166
Efficiency of training provided to volunteers	61 (36.7%)	70 (42.2%)	28 (16.9%)	6 (3.6%)	1 (0.6%)	166
public relations' seminar effectiveness, in Sawaed, at raising awareness about the importance of volunteering	53 (31.9%)	68 (41%)	34 (20.5%)	10 (6%)	1 (0.6%)	166
Providing volunteers with appropriate workshops to prepare them for volunteering	57 (34.3%)	72 (43.4%)	32 (19.3%)	4 (2.4%)	1 (0.6%)	166
Inclusion of professional human values in the field of volunteering (Sustainable Development Goals)	54 (32.5%)	79 (32.5%)	30 (18.1%)	2 (1.2%)	1 (0.6%)	166
Providing statistics and studies related to volunteering	37 (22.3%)	70 (42.2%)	44 (26.5%)	12 (7.2%)	3 (1.8%)	166
The ability of Sawaed's PR campaigns in raising awareness about the importance of volunteering	43 (25.9%)	88 (53%)	24 (14.5%)	8 (4.8%)	3 (1.8%)	166

The field of public relations role in Sawaed 19 in finding ways and means to encourage citizens to volunteer got an arithmetic average of 4.07 by 81%, which is a high percentage. 4.22 by 84%, which is a high percentage, and the paragraph "Doing research and field studies in the fields of volunteer work" obtained the lowest arithmetic average in this field, which is 3.94 by 79%, which is an average rate. This indicates the ability of public relations in Sawaed 19 to use and activate the most effective tool, which is activating the

media in educating the importance of volunteering, which is a key factor in raising the level of community awareness about the importance of volunteering.

Notes:

1. An open question was asked regarding the sample's opinion of volunteers in Sawaeed 19 about volunteering through the Sawaeed platform through the question "Do you recommend volunteering through the Sawaeed 19 platform?" The number of supporters reached 166 individuals, 100%.
2. Some reasons were given by the sample members to advise others to volunteer through the Sawaed 19 platform. The number of comments reached 17 comments describing the positives of volunteering and praising the platform and Sawaed's staff.

5 Authenticity of the Tool: Face Validity

After preparing the study tool in its primary form and to verify the validity of the tool and its suitability for the study, the research team presented it to a number of arbitrators with experience to determine the extent of its content validity and suitability for the study's objectives, importance, variables and methodology.

6 Scale Stability: Item-Inter Consistency

The researcher calculated the scale's stability using Cronbach's Alpha internal consistency coefficient, and the reliability coefficient reached (92%).

7 Study Results

To verify the study question, the research team used averages and percentages, and they were arranged according to the arithmetic mean and the following estimate:

(less than 50%) is a low score.

(50% to less than 79.9%) Intermediate score.

(80% or more) High score.

Interview Analysis: The research team conducted a direct interview with Ms. Maysa Al-Shamy- Public Relations Officer at Sawaed 19, in order to confirm the results of the questionnaire and strengthen the research, several questions were directed to Ms. Maysa Al-Shami, and they came as follows:

1. **What is the Sawaed 19 platform?**

Sawaed 19 is a professional social networking platform that organizes volunteer work by connecting volunteers through public relations with institutions that want to create voluntary projects and need volunteers.

2. **What is the nature of public relations work in Sawaed 19?**

The public relations in Sawaed 19 consists of one public relations employee, the media person "Maysa Al-Shamy", who employs her university studies in the field of public relations in order to Promote Sawaed 19, network between institutions and volunteers, and employ appropriate public relations tools for the desired goal.

Public relations in Sawaed 19 is working to achieve the 17 sustainable development goals through its volunteer programs and campaigns.

3. **What is the role of public relations in Sawaed 19, and what are the tools that you use in order to raise the level of societal awareness of the importance of volunteering?**

The main role of public relations in Sawaed 19 is to build the real community first and the virtual second for Sawaed 19 and to deliver the idea to the community through various public relations tools, including social media as a tool of Public relations tools. Other tools are employed, whether workshops, direct communication or public relations visits with institutions, the use of personal relationships that are the basis of public relations, organizing and creating new events. Public relations work is an integrative work with the media.

4. **How does public relations in Sawaeed 19 communicate with the public?**

Communication with the masses is divided into two parts, beginning with institutions, through direct communication and field visits (public relations visits). As for communicating with young volunteers and students, they are reached through social media and the platforms they also go to universities and schools and organize events and awareness days, so the adoption of Sawaed 19 is on direct communication.

5. **Who is the audience interested in Sawaed 19?**

The community of Sawaed 19 who are interested in volunteering is diverse. It is possible that the individual is over the age of fifty or even in his twenties, and public relations must study it well and divide it in order to use the appropriate public relations tool for the appropriate category in order to obtain the best results and attract volunteers and measure the impact afterwards and help in planning.

6. **What are the challenges facing public relations in Sawaed 19 in raising the level of societal awareness of the importance of volunteering?**

The research team, based on the answer of the public relations officer at Sawaed 19, Professor Maysa Al-Shami, showed that.

The interest of a large part of the Palestinian people in paid work more than volunteering, as well as the large number of commitments and the lack of free time, in addition to the weak awareness of the importance of volunteering and the absence of a culture of volunteering in society. Another type of challenges such as the lack of legislation and laws organizing and preserving volunteer rights, in addition to the lack of

families encouraging their children and the absence of educational activities in educational institutions that motivate students to volunteer, as well as challenges related to the low financial budget necessary to complete activities, campaigns and programs aimed at motivating citizens to volunteer.

7. **What is the impact of public relations campaigns and activities on Sawaed 19?**

According to statistics from various sources, more than 700,000 Palestinian citizens are volunteers, as 26% of the Palestinian community volunteered or had the experience of volunteering, and that 85% of the volunteers They see that their experience is positive. With regard to Sawaed 19, several cooperation agreements have been signed with various local associations, institutions and individuals.

8 Summary of the Study Results and Conclusions

The research team reached the following results:

1. The results showed that volunteering in Palestine faces many challenges in promoting it due to the lack of financial resources allocated to it, and the lack of specialized experts.
2. The results confirmed that citizens use social networking sites little with regard to materials related to volunteer work and awareness publications regarding it.
3. The study proved the efficiency of the role played by public relations in Sawaed 19 and its use of public relations tools in an appropriate manner.
4. The study showed a lack of interest on the part of municipalities and institutions in voluntary work and its encouragement, in addition to the lack of support and neglect of ministries and private sector institutions for voluntary work.
5. The study showed that the number of public relations workers in Sawaed 19 is small compared to the work to be done in order to raise the level of community awareness of volunteering.
6. The results showed citizens' neglect of the benefits of volunteering, its importance and the extent of its coherence with the issue of patriotism and belonging. It has a strong role in improvement and development, especially with the conditions of the Israeli occupation in the homeland.
7. The results showed that volunteer work in Palestine is unorganized and random, and showed the lack of legislation and laws that guarantee the rights of volunteer citizens.
8. The study confirmed the lack of interest of school and university students in volunteering and the insufficient level of awareness of the importance of volunteering and its benefits to them and society.
9. The results showed the small number of citizens who know about Sawaed 19, its role in society, and what its work is.
10. The study confirmed the lack of public relations departments in the local non-profit, charitable and voluntary institutions, or their work was limited to one employee.

9 Study Recommendations

1. Integrating volunteer activities in Sawaed 19 with volunteer activities in international institutions outside Palestine and benefiting from their experiences.
2. Investing in social media more effectively, to ensure the sustainability of volunteer work, and to spread its benefits to all segments of society in a larger and broader way.
3. It is necessary to support the role played by public relations in Sawaeed 19 in raising the level of community awareness about the importance of volunteering and promoting it.
4. Allocating more activities to support such institutions, raising community awareness of the importance of volunteering in Palestine through municipalities and various civil society institutions, stimulating the private and governmental sectors to support the volunteering policy and raising citizens' awareness of its importance.
5. Rehabilitation and increase the number of workers in the field of public relations in Sawaed 19.
6. Linking volunteer work and belonging to the homeland and the Palestinian identity.
7. Imposing policies, laws, and laws regulating voluntary work and guaranteeing rights in Palestine by the government.
8. Establishing strong links between universities and schools in order to create a spirit of volunteerism in the hearts of students.
9. Work to intensify activities and campaigns to familiarize the community with 19.
10. Establishing a public relations department in all non-profit, charitable, voluntary institutions for its important role in raising citizens' awareness of the importance of volunteering and promoting it.

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The Ability of Public Relations in Government Institutions to Enhance Transparency Anti-corruption Commission - A Model

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Abstract. The study aimed to identify the capacity of public relations among government institutions to promote transparency "Anti-Corruption Authority, and identify the impact of different variables: (gender, scientific qualification, age, and the function) in the ability of public relations with government institutions to enhance transparency" Anti-Corruption Authority - Model, as the study aimed at identifying the challenges of public relations with government institutions to enhance transparency "Anti-Corruption Authority, and to achieve the objectives of the study, the researcher used the synthesis method between the descriptive curriculum and the qualitative methodology: the quality and quantity: the corresponding And took, where the study community () is a citizen, and () an employee, and the sample size (385), (385) and (77) employees, as well as 8 public relations staff and 3 heads of departments in the Anti-Corruption Commission, and has been statistically analyzed using a program The statistical packet for social science (SPSS), has shown the results of the quantitative study tool after analysis and interpretation of data, in addition to 8 public relations staff and 3 heads of departments in the Anti-Persons Authority, The results showed that public relations with government institutions promote transparency "Anti-Corruption Authority - a major model, and the results of the study showed that the Department of Public Relations in the Anti-Corruption Authority has been able to promote transparency from the point of view of workers through a large public opinion and showed Results The lack of statistically significant differences between the averages of staff responses are attributed to variables: scientific qualifications, province, and statistically significant differences are attributable to sex variable, and female favor, as well as statistical differences in age, and the beneficent of younger, and the results showed the challenges of relationships The public institutions in promoting transparency "in the Anti-Corruption Commission is great, and the researcher recommended awareness of public relations in public institutions in general and the anti-corruption body in particular., Youth education and educating issues of corruption and their awareness through activities in institutions and the need to grant a department Public Relations in Public Institutions, and the Anti-Corruption Authority in particular broader powers in their activities.

Keywords: Transparency · Anti-corruption Commission · Public relations · Government institutions

1   Introduction and Theoretical Background of the Study

Introduction: Public relations is one of the very modern jobs in the Arab world, and in order to establish good and strong relations with citizens, many governments have established central agencies at the national level, providing them with the necessary information on the one hand and receiving their opinions, ideas and suggestions on the other hand, and public relations require understanding between individuals And groups, and understanding between institutions and society, and therefore it is like communication with everyone, and a tool for communication, which makes citizens feel satisfied with the authority when its owners, through the Public Relations Department, seek to provide the necessary clarifications for them to check on their interests, and feel comfortable with the services provided by the authority's administration to them (Aliwa, 2002, p. 88).

Free and direct access to information, processes and procedures by those concerned in any profession as stated by Mosleh (2007) is the essence of transparency, as they can obtain information that will help them understand and monitor their interests in easy and clear ways, where the two degrees of transparency and access to information are directly proportional. (Al-Rashidi, 2007, pp. 11–10).

The problem of the study: Modern institutions that keep pace with change have set out to allocate a public relations department that works to organize their activities, popularize their message, and document their contacts with society, and various civil society institutions (Al-Adawy, 2010, p. 45). Public relations represent the mirror of the institution in which the public and clients see its activities and works. Many departments that seek to reach comprehensive quality standards in the services they provide to the public have been keen on applying transparency standards to be clear about their activities and objectives, and public relations are their mouthpiece to communicate with the community and convey their message. With clear transparency, AMAN (2016) has addressed in its annual publications the reality of integrity and anti-corruption in Palestine on several levels, in which it addressed several indicators that represented challenges to integrity and transparency in Palestinian society, where there were no radical developments in the oversight mechanisms and the implementation of the provisions of the Code of Conduct, which The reference to civil work accountability is represented in a study conducted by the Palestinian NGOs Development Center (NDC, 2013). The study stated that there is increasing competition, duplication of work, and fragmentation of efforts made between NGOs, which are characterized by poor integration among them, and that NGOs Weak in coordinating good governance practices and procedures, which gave a general picture of corruption and inefficiency of organizations, based on the foregoing, and given the lack of application of The principle of accountability, integrity and transparency in many institutions, the researchers identified the problem of the study with the following main question:

What is the ability of public relations at the Anti-Corruption Commission to enhance transparency from the perspectives of public relations workers in government institutions? In order to answer this question, it will be examined whether the Public Relations Department of the Anti-Corruption Authority has been able to enhance transparency from the point of view of public relations workers in government institutions through its

functional role? Was the Public Relations Department of the Anti-Corruption Commission able to enhance transparency from the point of view of public relations workers in government institutions through its influence on public opinion? Was the Public Relations Department of the Anti-Corruption Commission able to enhance transparency from the point of view of public relations workers in government institutions through the services it provides? What are the challenges facing the promotion of transparency in the Anti-Corruption Commission?

Franchise theory is a general theory of public relations that "identifies how public relations make organizations more effective, how they are organized and managed when they contribute significantly to organizational effectiveness, the conditions in organizations and their environments that make organizations more effective, and how the monetary value of public relations can be determined. Excellence in public relations is the result of a transition from the stage of the four models to the dimensions, and this is another stage of transition carried out by "Grunge" and his team, as they developed the fourth model according to the four dimensions and tested it in different countries and cultures. (Al Mudefer, 2019, p. 326). Al-Imtiaz "The Theory of Public Origins and Special Applications" is a combination of two concepts for two different schools, the first school believes that public relations must be central to maintain management strategies, while the other believes that centralization in public relations does not respond to cultural and communication differences (Al-Mudiver, 2019, p. 326). Al-Mudiver (2019) considers that some researchers consider the theory as imaginary, ideal, and unrealistic in terms of balance in communication, and unsuitable for global generalization, and the unit of analysis that Dr. focuses on Excellence is still one country, Leichty added that fully collaborative PR is not feasible in some cases, and noted that PR practitioners' lack of authority within the organization further restricts cooperation (p. 329).

The current study considers that the objectives of public relations are embodied in the continuity of the activities of the authority by enabling bridges of trust and friendliness between the authority and its public and working to overcome the difficulties and challenges that prevent gaining the confidence of the public.

The concept of transparency in public relations

Transparency: Al-Ghamdi and Al-Fran (2020) indicated that transparency has two branches, internal transparency and external transparency, and the interior is concerned with organizing work and the relationship between senior management and employees by involving them in decision-making and drawing up the authority's policy in addition to dealing with them clearly without confidentiality, while external transparency is regulated The authority's relationship with the external public by disseminating correct information about the services it provides and the crises it addresses. The study considers that professional transparency is the clarity of decisions, goals, and laws in governmental and private institutions, which makes their audience feel satisfied and accepted.

Professional transparency requirements: Achieving transparency in institutions requires the creation of administrative development in the management of organizations, and there must be a clear policy in appointment and selection in accordance with the principle of efficiency, and the development of an information network between the administrative units in the authority, and the need to provide clear and specific communication channels, and enable the public to Reporting cases of deviation easily, focusing

on improving the efficiency of administrative leaders through training and selecting the best, providing the necessary procedures to ensure integrity and accountability, rotating employees to give priority to the public interest over personal interests, reviewing laws and regulations and addressing gaps in them, and the necessity of having systems that allow employees to have easy access to information that they need in their field of work, and opening channels of communication between employees, management and the public, and the door to appointment and promotion is according to efficiency (Al-Rahhala, 2010). The study finds that the success of transparency is linked to credibility, professional honesty, self-monitoring, and accountability.

Transparency indicators: There are several indicators of transparency mentioned by Mosleh (2010) related to the availability of documents about the authority's objectives and programs, their disclosure to the public, the provision of information related to the organizational structure to the public, plans and public involvement in the authority's plans, and the opportunity for them to attend periodic meetings of the organization.

Corruption: Al-Shami (2007, p. 737) defines it as deviating from regulations and laws and not complying with them, or exploiting them for gain and private interests. As for the United Nations Convention, corruption is considered to be the practices that occur in reality and prohibited such as bribery, money laundering, illicit wealth, and illegal. This is an illegal practice. Based on the previous definitions, the current study considers that corruption is the abuse of office for illegal gain such as bribery and other illegal practices.

The topics of previous studies related to the role of public relations varied, for example, Bahir's study (2018), which dealt with the role of public relations in government institutions, the study of Nasr and Shalaby (2018), which dealt with the capacity of public relations in Palestinian non-governmental organizations, and Taha's study (2016), which dealt with the role of Public Relations in Addressing Administrative Corruption Issues: Most of the previous studies adopted the descriptive approach in its survey and analytical forms, and the study tool was the questionnaire and some previous studies mixed between the quantitative descriptive approach and the qualitative qualitative approach, and the study tools were questionnaire, interview and observation as Taha study (2016): Previous studies are among the first recent studies - according to the researchers' knowledge - which dealt with the role of public relations in enhancing transparency in government institutions to reduce corruption, and the Anti-Corruption Commission as a model. The current study combined the descriptive and qualitative approach by preparing a questionnaire for quantitative data, and interviews for qualitative data.

Study Methodology: The researchers used the method of blending the descriptive-analytical approach with the qualitative qualitative approach, because the descriptive-analytical approach is best suited to describe the phenomenon in all its aspects, and describes it accurately and quantitatively, and gives us a numerical description of that phenomenon (Quantitative), and the qualitative approach (Qualitative, describes us phenomenon and its characteristics,

The study population consisted of all public relations workers in government institutions and a comprehensive survey of all employees in public relations departments that

formed the study sample for the interview, and the following is a description of the characteristics of the study sample of public relations employees in government institutions according to their demographic variables:

Table 1. Distribution of the study sample for the first questionnaire (workers) according to its independent variables.

Percentage %	Frequency	Rating	Variable
49.4	38	Male	Gender
50.6	39	Female	
5.2	4	Diploma	Qualification
64.9	50	Bachelor	
29.9	23	Postgraduate	
39.0	30	Media	Specialization
10.4	8	Public Relations	
24.7	19	Management	
26.0	20	Other specialties	
15.6	12	Less than 5 years	Years of experience
32.5	25	5–10 years	
51.9	40	More than 10 years	
100.0	77	Total	

It is clear from Table 1 the distribution of the study sample according to its independent variables, where the table shows the levels of each variable of the study, the frequency of each level and its percentage of the total percentage of the sample.

The questionnaire and the interview were used as tools to study it, due to their suitability for the purposes of the study.

The researchers used a questionnaire as a tool to study it on citizens and employees, which included two axes: (the ability of public relations to combat corruption) in its fields (the functional role of government public relations, influencing public opinion, services provided by public relations, and public relations challenges in the Anti-Corruption Authority) and (transparency professional) in its fields (the ability of public relations to enhance professional transparency in the Anti-Corruption Commission, and the challenges of enhancing transparency in the Anti-Corruption Commission) in addition to demographic information, according to the following steps:

The study tool (the questionnaire) consisted of two parts:

1. Part One: It includes the initial information about the respondent who will fill out the questionnaire.
2. Part Two: It included (45) paragraphs divided into two axes, namely (the ability of public relations to combat corruption) in its fields (the functional role of government

public relations, influencing public opinion, services provided by public relations, and public relations challenges in the Anti-Corruption Authority). And (Professional Transparency) in its fields (the ability of public relations to enhance professional transparency in the Anti-Corruption Authority, and the challenges of promoting Transparency in the Anti-Corruption Commission) on the ability of public relations in government institutions to enhance transparency" Anti-Corruption Commission, as shown in Table 2:

Table 2. Paragraphs of the first questionnaire (workers) according to their fields.

Number of paragraphs	Field	Number
The ability of public relations to combat corruption		
6	Job Role of Government Public Relations	1
5	Influencing public opinion	2
8	Services provided by public relations	3
5	Public Relations Challenges in the Anti-Corruption Authority	4
Professional transparency		
10	The ability of public relations to enhance professional transparency in the Anti-Corruption Authority	5
7	Challenges to Enhancing Transparency in the Anti-Corruption Commission	6
41	Total	

The scores of the 41st and 45th paragraphs were given using a five-point Likert scale.

Validity of the tool: The apparent honesty was verified by presenting the two study tools to a group of arbitrators specialized in media studies and other disciplines. or modify its wording or delete it because it is not important.

Stability of the tool: The stability coefficient of the tool has been extracted, using Cronbach's Alpha equation and Table 3 shows the reliability coefficients of the study tool and its fields.

It is clear from Table 6 that the stability coefficients for the fields of employee questionnaire for the first axis (the ability of public relations in combating corruption) ranged between (91.7–94.6) for the second domains (influencing public opinion) and the first (the functional role of government public relations), while the stability reached The overall axis (94.2) and for the second axis (professional transparency) ranged between (89.1–94.2) for the sixth domain (challenges to enhance transparency in the Anti-Corruption Commission) and for the fifth domain (the ability of public relations to enhance professional transparency in the Anti-Corruption Commission) and the overall stability of the axis (93.9) While the total stability of the tool reached (96.4), which is a high stability coefficient and satisfies the purposes of scientific research.

Table 3. The coefficient of reliability of the employee's own tool, using Cronbach's Alpha equation.

Stability coefficient	Number of paragraphs	Field	Number
94.6	6	Government Public Relations Job Role	1
91.7	5	Influencing public opinion	2
92.8	8	Services provided by public relations	3
92.7	5	Public Relations Challenges in the Anti-Corruption Authority	4
94.2	24	Anti-corruption capacity of public relations	
94.2	10	The ability of public relations to enhance professional transparency in the Anti-Corruption Authority	5
89.1	7	Challenges to Enhancing Transparency in the Anti-Corruption Commission	6
93.9	17	Professional Transparency	
96.4	41	Tool overall stability	

The interview: The researchers used the interview as a tool to study it, which consisted of eleven questions for public relations workers, and three questions for heads of departments.

Statistical treatments: After unloading the answers of the sample members to the tool (the questionnaire), they were encoded and data entered using the computer, then the data was processed statistically using the Statistical Package for Social Sciences (SPSS). Among the statistical treatments used:

1. Frequencies, percentages, arithmetic averages, and standard deviations, to estimate the relative weight of the questionnaire items.
2. Alpha-Cronbach equation to measure test reliability.
3. An Independent Sample t test to find out the differences in the gender variable of the study sample from the public and employees.
4. The One Way ANOVA test to find out the differences related to academic qualification, age, occupation, and conservatism for the study sample of the public, academic qualification, specialization, and years of experience for the study sample of employees.
5. The dimensional comparison test to find out the differences between the levels of the variables that have differences.

Results: This study seeks to identify the ability of public relations in government institutions to enhance transparency: Anti-Corruption Commission as model. In order to achieve this, the researchers used a questionnaire consisting of two axes and (45) paragraphs that were distributed to a sample of (77) employees in Palestinian governmental institutions, in addition to an interview consisting of ten questions for workers in public relations.

The Results of the Questionnaire:

It turns out that the focus area (**the ability of public relations in the fight against corruption**) is all between medium and large scale, as the arithmetic averages ranged between (3.32) and (3.61), which are the domains (**public relations challenges in the Anti-Corruption Authority**) and (**influencing public opinion**). The response on the total score for the axis was significant in terms of the arithmetic mean, which reached (3.51). And that the areas of the (**professional transparency**) axis were all between medium and large, the arithmetic averages on them ranged between (3.38) and (3.49), which are the cases (challenges of enhancing transparency in the Anti-Corruption Commission) and (**the ability of public relations to enhance professional transparency in the Anti-Corruption Commission**), and the response on the total score for the axis was significant in terms of the arithmetic mean, which reached (3.43).

The Results to the First Sub-question of the Study:

Was the Public Relations Department of the Anti-Corruption Commission able to enhance transparency from the employees' point of view through its functional role?

To answer this question, the arithmetic means and standard deviations of the first study tool field (**the functional role of government public relations**) were extracted. The results indicated that the paragraphs (**functional role of government public relations**) were all large, the arithmetic averages on them ranged between (3.44) and (3.70), which are the paragraphs (public relations, a clear strategy for its media role in the Anti-Corruption Authority) and (public relations work in The Anti-Corruption Commission is based on the support of the Commission's principles). The response on the total score was significant in terms of the arithmetic average, which reached (3.57).

The results of the Second Sub-question of the Study:

Which states: Was the Public Relations Department of the Anti-Corruption Commission able to enhance transparency from the workers' point of view through its influence on public opinion?

To answer this question, the arithmetic means, and standard deviations, were extracted of the second study tool field (influence on public opinion). The results indicated that the paragraphs (influencing public opinion) were all between great, the arithmetic averages on them ranged between (3.44) and (3.76), which are the paragraphs (public relations in the Anti-Corruption Authority is committed to its integrated role in front of the public) and (public relations seeks In the Anti-Corruption Commission to

create a positive public opinion among its audience). The response on the total score was significant in terms of the arithmetic mean, which reached (3.61).

The Results of the Third Sub-question of the Study:
Which states: Was the Public Relations Department of the Anti-Corruption Commission able to enhance transparency from the workers' point of view through the services it provides?

To answer this question, the arithmetic means, and standard deviations, were extracted for the third study tool field (services provided by public relations). The results confirmed that the paragraphs (services provided by public relations) were all between medium and large, the arithmetic averages on them ranged between (3.33) and (3.70), which are the two paragraphs (public relations ensure through its media role the public's satisfaction with the Anti-Corruption Authority) and (Public relations work to build the reputation of the Anti-Corruption Authority inside and outside the authority). The response on the total score was significant in terms of the arithmetic average, which reached (3.54).

The Results of the Fourth Sub-question of the Study:
Which states: What are the challenges facing the promotion of transparency in the Anti-Corruption Commission?

To answer this question, the arithmetic means, and standard deviations, were extracted for the sixth study tool field (what are the challenges facing the enhancement of transparency in the Anti-Corruption Commission). The results showed that the paragraphs (challenges facing the enhancement of transparency in the Anti-Corruption Commission) were all between medium and large. The arithmetic averages on them ranged between (3.27) and (3.57), which are the paragraphs (lack of credibility between the administration in the Anti-Corruption Commission and the public in public relations) and (the Anti-Corruption Commission maintains the confidentiality of data and non-disclosure of it), and the response was on the total degree Medium in terms of the arithmetic mean, which amounted to (3.38).

The Results of the Second Study Tool (The Interview): The researchers interviewed eight public relations workers in government departments, in addition to three heads of departments in the Anti-Corruption Commission. The results, according to the questions, were as follows:

First: The results of the questions related to public relations workers in government departments:
First: How can the public relations in the commission enhance professional transparency and reduce administrative corruption?

According to the responses of the study sample of the respondents, the public relations in the authority can enhance professional transparency and reduce administrative corruption as follows:

1. Special jobs in the commission are offered in cooperation with the Human Resources Department to receive applications and hold exams and interviews.

2. All the work of the commission, including conferences, seminars and workshops, is published, in addition to concluding agreements with government institutions in order to enhance cooperation to combat corruption and enhance integrity and transparency.
3. Reports are published and disclosed through the means of communication, the commission's websites, and official and local media institutions.
4. The commission allows those who complain about corruption to follow the complaint process, and they have the right to receive an official letter from the commission on the reported corruption case.
5. Whistleblower and Witness Protection System A system through which the Commission protects whistleblowers and witnesses from any assault or harm against them in connection with the corruption case they reported.

Second: What are the challenges that prevent the role of public relations in government institutions from enhancing professional transparency in the authority?

The respondents from the study sample mentioned a number of challenges that hinder the work of public relations in government institutions from enhancing professional transparency in the authority, including: the separation of the public relations department from the media and the absence of the titles of the departments and sections, as the media plays the role of public relations and protocol without a name. In addition to the negative mental impression of state institutions in general and the Anti-Corruption Commission in particular. Furthermore, the society's culture about corruption, the procedures associated with the process in which the issue of reporting corruption proceeds, which begins with reporting in the commission. as well as the division and partisan agendas, the occupation and the geographical division of the land, in addition to the financial crisis that countries as a whole suffer from.

Third: What is the place of public relations in senior management?

The respondents mentioned that the public relations and the media department directly report to the senior management.

Fourth: What are the specializations of public relations workers (to know their experiences)?

The responses revealed that the majors of public relations workers are translation, journalism and media, social work, psychological counseling, and international studies.

Fifth: Is the budget of the Public Relations Department sufficient to implement the activities?

The respondents answered in the affirmative, meaning that all public relations activities and projects are financed.

Sixth: What is the nature of the activities provided by the Public Relations Department to the public and government institutions?

The respondents' responses revealed that the nature of public relations activities is to facilitate cooperation between the commission and other commissions. Some of these activities include coordinating conferences for the Anti-Corruption Department, holding workshops and establishing a partnership in curbing corruption by holding awareness-raising sessions and activities on issues of corruption and prevention and control of public money.

Seventh: Are the decisions in the Anti-Corruption Commission centralized? And are there powers for public relations to communicate with community institutions?

The response to this question was that decisions are central, especially when they are sensitive and important issues, and decentralized to decisions that pertain to the department's internal and external work.

Eighth: In your opinion, what are the ways to face the challenges facing the Public Relations Department in promoting transparency?

The responses to ways to meet the challenges facing the Public Relations Department in promoting transparency were as follows:

1. Research, planning, sufficient financial resources and the presence of real partners.
2. Unification of the Department of Public Relations, Media and Protocol under the name of Public Relations Department, with clear and specific powers.
3. Intensify efforts to spread awareness of combating corruption and enhance transparency, in addition to changing the stereotyped image taken of government institutions and of the Anti-Corruption Authority in particular.
4. Involving the public on a permanent and intensive basis in the activities and events of the Public Relations Department related to enhancing transparency.
5. Continuous communication with the public in all its forms and familiarizing them with the Commission, its functions and its work.
6. Increasing the number of employees of the Department of Public Relations and Information to intensify the activities that improve the Commission's image.

Ninth: Is there continuous communication with institutions and the public? What is the nature of this contact?

The respondents agreed that there is constant communication through conferences, workshops and awareness campaigns, in addition to attending official events and concluding agreements to enhance cooperation and partnership in combating corruption and enhancing transparency.

Tenth: Are letters or complaints submitted to the commission by governmental institutions or by the public considered? And how is it dealt with?

Some respondents mentioned that complaints are taken seriously, and once they are confirmed, they submit the file to the prosecution and the court, while others mentioned that complaints are taken by a competent department, we, as a public relations department, do not follow up on the complaints file.

2 Discuss the Results and the Most Important Recommendations

2.1 Discuss the Results Related to the Study Questions and Hypotheses

Discussing the results of the first (main) question: What is the ability of public relations at the Anti-Corruption Commission to enhance transparency from the perspectives of public relations workers in government institutions?

The results indicated that the degree of approval of the axis of (the ability of public relations in combating corruption) was between medium and large scale, with the highest

being (influencing public opinion), followed by (the functional role of government public relations), then (services provided by public relations), and finally (public relations challenges in the Anti-Corruption Authority). The response on the overall degree was great. This is due to the fact that the functional role of public relations in institutions in the first place is to influence the public and convey a good image of the authority to them. Therefore, the highest paragraphs came to influence public opinion by clarifying the objectives of the commission. The areas of the axis (professional transparency) were all between medium and large scale, and that the highest (the ability of public relations to enhance professional transparency in the Anti-Corruption Commission), and the lowest (the challenges of enhancing transparency in the Anti-Corruption Commission). The response was great on the overall degree. This is due to the nature of the functional role of public relations in clarifying the objectives of the authority to the public, and conveying the image of the authority to them, thus making them feel comfortable, and this enhances the ability of public relations to enhance professional transparency in the Anti-Corruption Authority. This result differs with the result of the brick study (2019), which revealed that the availability of requirements for activating administrative transparency, from the viewpoints of administrators at the University of Hail, obtained a medium scale.

The results of the sub-questions and the hypothesis emanating from the first main question are as follows:

1. The results indicated that the degree of approval was (significant) on all paragraphs of the job role of government public relations, and the degree of total approval of the total degree was large, as it was the highest (public relations work in the Anti-Corruption Authority is based on supporting the principles of the authority), followed by (Public relations works to generalize the objectives of the Anti-Corruption Commission among the public), then (public relations in the Anti-Corruption Commission are able to gain the public's trust towards the Commission). the lowest paragraph were (public relations has a clear strategy for its media role in the Anti-Corruption Commission), then (Relationships The public employs scientific methods in implementing its activities and programs), followed by (public relations in the Anti-Corruption Commission are able to gain the public's trust towards the commission). This result (public relations in the Anti-Corruption Commission is able to gain the trust of the public towards the Commission) is consistent with the result of Melvin Sharp's model of public relations ethics, which sees in continuous communication a role in building relationships with the public. This result is attributed to the important role played by public relations in the Anti-Corruption Commission and supports its principles through dissemination and disclosure in order to achieve the Commission's goal of fighting corruption. The media role of public relations in the Anti-Corruption Commission seeks to generalize and convey the authority's message to the public with the aim of raising awareness, not disturbing order, and trusting the work and principles of the authority. This media role is planned, organized and in a scientific manner because it addresses the minds of the public to believe and be convinced of the principles of the commission in the fight against corruption.

2. The results indicated that the degree of approval was (significant) on all paragraphs of influencing public opinion. The degree of total approval of the total degree was

large, as it was the highest (public relations in the Anti-Corruption Commission seeks to create a positive public opinion among its audience), followed by (public relations enhances the public's confidence in the Anti-Corruption Commission through its various activities in the Commission), then (public relations influence the public through direct contact with them). The lowest paragraphs were (public relations in the Anti-Corruption Commission is committed to its integrated role in front of the public), then (public relations provide clarifications to the public about the functions of the Anti-Corruption Commission).

This result is attributed to the nature of the tasks entrusted to public relations workers by virtue of the public relations function, which are: addressing the public, communicating with them and gaining their trust towards the authority, through what it provides of providing reassurance to the public about their interests, in addition to the services that the commission provides to them, such as providing the public with the clarifications they need about their inquiries, according to the powers and the extent of the powers granted to them, in order to gain the confidence and satisfaction of the public opinion towards the authority, which will develop it and raise its performance.

3. The results indicated that the degree of approval was between (medium and large) for all paragraphs of the services provided by public relations. The degree of total approval of the total degree was large, as it was the highest (public relations builds the reputation of the Anti-Corruption Commission inside and outside the Commission), Then (public relations convey to the public the activities of the Anti-Corruption Commission), then (working to link the partnership between the Anti-Corruption Commission and the public to curb corruption). The lowest paragraphs were (public relations, through its media role, ensure public satisfaction with the Anti-Corruption Commission), and then (public relations enhance public cooperation with the Anti-Corruption Commission through its internal activities).

This result is attributed to the role of public relations in the Anti-Corruption Commission, which is, as evidenced by the results, a media role aimed at conveying the message and objectives of the Anti-Corruption Commission, its work, and the goal of its existence, which is to combat corruption. Therefore, there must be real cooperation from the public with the authority, and in order to do that, it needs the visual media represented by public relations and its media role in communicating with the public as a link between the public and the authority.

4. The results indicated that the degree of approval was between (medium and large) for all paragraphs of the challenges facing the enhancement of transparency in the Anti-Corruption Commission. The degree of total approval of the total degree was medium, as it was the highest (the Anti-Corruption Commission maintains confidentiality of data and does not disclose it)., followed by (the specific circumstances of the internal system of the Anti-Corruption Commission prevent public relations from working in clarifying some regulations), then (the centralization of decisions in the Anti-Corruption Commission prevents it from delegating powers to public relations in communicating with community institutions). The lowest paragraph were (lack of credibility between the administration in the Anti-Corruption Commission and the public in public relations), then (the failure to grant the Public

Relations Department of the Anti-Corruption Commission the powers to publish the commission's periodic reports), followed by (the legalization of the role of public relations prevents the role of the anti-corruption commission in enhance transparency).

This is due to the fact that the Anti-Corruption Commission cannot publish some reports for security reasons that may defame some people who are suspected of corruption. Therefore, the role of public relations depends on the nature of these reports, as it does not have the powers authorized to publish special reports on the grounds that the Anti-Corruption Commission is central to its decisions, and it does not delegate to public relations powers to publish reports except within the public interest.

Discussion of interview questions:

1. The results showed that the public relations in the commission works to enhance professional transparency and reduce administrative corruption through integrity in hiring, publishing the commission's work, such as conferences and reports, and listening to complaints with the presence of a protection system for whistleblowers.
2. The results showed that the challenges that prevent the role of public relations in government institutions from enhancing professional transparency in the commission are represented in the negative impression about state institutions and the anti-corruption commission, the separation of the public relations department from others, and the culture of society about corruption in addition to the procedures for running Corruption issues.
3. The results showed that the place of public relations in the senior management is that it follows the Media Department and that sometimes it reports directly to the senior management. This result is consistent with the principles of the theory of excellence, which sees that public relations workers have a direct functional link with senior management. This is due to the fact that the majority of the tasks entrusted to public relations in the commission are media tasks based on circulating and publishing reports, and opening channels of dialogue with the public, and therefore it receives instructions from the senior management, which makes it derive two powers in its roles, an administrative authority and a media authority.
4. The results showed that the specializations of public relations workers are different, such as translation, journalism and media, social work, psychological counseling, and international studies. This result is consistent with the principles of the theory of excellence, which sees that public relations workers have knowledge and competence that qualifies them for the administrative role and for practicing balanced public relations.
5. The results showed that the budget of the Public Relations Department for the implementation of the activities is sufficient and that all the activities carried out by it are funded. This is due to the fact that public relations activities support the commission's tasks, generalize its principles, and create a positive opinion

of the public. Therefore, its activities are covered within an adequate and well-thought-out budget.

6. The results showed that the nature of public relations activities is to facilitate cooperation between the commission and other commissions, to coordinate conferences for the Anti-Corruption Department, to hold workshops and to establish a partnership in curbing corruption by holding awareness-raising sessions and activities on issues of corruption and prevention and control of public money.

7. The results demonstrated that the decisions of the Anti-Corruption Commission are central, especially when they are sensitive and important issues, and not central when it comes to decisions related to the internal and external work of the department. This is due to the fact that the Anti-Corruption Commission is a body with a security system and it looks into corruption cases. Therefore, these cases are sensitive, especially when it comes to important data that may harm the suspect or expose him to defamation before ending a case and verifying that his file is free of corruption. In such matters, the Commission tightens its centrality and grants public relations limited powers within the scope of its tasks and principles.

8. The results demonstrated that the ways to confront the challenges facing the Public Relations Department in promoting transparency are through research, planning, finding an adequate financial resource, the presence of real partners, coordination between the authority, the media and the protocol, spreading awareness about anti-corruption, and engaging the public in the activities and events of the authority and communicating with it, and increasing the number of employees of the Public Relations Department. This is due to the fact that many groups of society, regardless of their areas of residence, work, and ages, do not have sufficient knowledge of the role of public relations in enhancing professional transparency in the Anti-Corruption Authority. Therefore, awareness campaigns and intensification of public relations activities to communicate with the public and various institutions are necessary.

9. The results showed that there is constant contact with institutions and the public through conferences, workshops and awareness campaigns, in addition to attending official events and concluding agreements to enhance cooperation and partnership in combating corruption and enhancing transparency. This result, public relations in the Anti-Corruption Authority is able to gain the trust of the public towards the agency, is consistent with the result of Melvin Sharp's model of public relations ethics, which sees in continuous communication a role in building relationships with the public. This result is due to the fact that public relations are active in their communications with and addressing the public, and are intensifying their effectiveness in engaging with institutions and partners.

10. The results showed that letters or complaints submitted to the commission by governmental institutions or by the public are taken into account. This is due to the fact that public relations, through its role in addressing the public, listens to their complaints, and conveys them seriously to the Commission.

11. The results showed the existence of several roles for the Public Relations Department in the Anti-Corruption Commission: communicating with institutions and

the public, training and exchanging experiences with other institutions, publishing news and reports, and preparing monthly reports. This result, public relations in the Anti-Corruption Authority is able to gain the public's trust towards the authority, is consistent with the result of Melvin Sharp's model of public relations ethics, which sees in continuous communication a role in building relationships with the public. This is due to the complexity of the public relations tasks governed by the nature of the commission, its size and relations, and the nature of its internal and external systems.

12. The results demonstrated that the employees of the Anti-Corruption Authority are involved in the activities of the Public Relations Department. This result is consistent with the principles of the theory of excellence that calls for the involvement of public relations in strategic management. This is due to the fact that the Public Relations Department is one of the important departments in the commission, and according to the nature of the role it plays and its importance, it is necessary to involve the employees in the commission in the activities of the authority so that they possess communication skills.

13. The results showed that public relations is not a mediator between the Anti-Corruption Commission and the higher administrations. This is due to the fact that public relations presents programs and activities and circulate the news of the authority within the scope of its work, but not as a matter of mediation between the public and the authority, but from the nature of the competence that imposes itself in opening channels of dialogue and communication with the public.

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The Impact of Earnings Management on Unexpected Stock Returns: Palestinian Evidence

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Abstract. This study aims to explore the effect of earnings management on the unexpected stock returns of the corporations listed on the Palestinian Exchange during the period 2014–2019. Earnings management was measured using the Modified Jones Model corrected for operating cash flow, while unexpected stock returns are estimated as the difference between the actual return and the average of the past three years' returns to proxy for expected earnings. The data was obtained from the annual reports of the non-financial companies listed on PEX. The final sample consists of 31 firms and 186 firm-year observations. The results revealed that a strong positive relationship exists between earnings management and unexpected stock returns.

Keywords: Earnings management · Stock return · Palestine

1 Introduction

Earnings power is the key to a firm's success (profitability). Earnings also influence the stock price and thus the corporate value. Thus, earnings are largely considered by investors in their decisions. Earnings include operating cash flow and accruals. Overall, discretionary and non-discretionary accruals are summed. Non-discretionary accruals are mandatory expenses that have been accounted for but not paid. Discretionary accruals are non-mandatory expenses that have been documented but not yet realized [1]. Healy [2] discovered that managers maximize compensation by increasing reported earnings. This and related practices are called "earnings management." Earnings management (EM) has been widely considered in the accounting literature. EM is practiced by exploiting the choices allowed by the adopted accounting standards related to the accrual component of earnings. It is used by the management in an attempt to affect the financial statements in a way to achieve specific benefits [3]. These benefits are not all the same; they differ from one company to the next. Burilovich and Kattelus [4] stated that EM is used to smooth earnings, restrain stock prices, negotiate with labor unions, management buyouts, benefit management, compensation plans, and import relief.

Stock performance is determined by different factors, including earnings. Therefore, practicing EM is supposed to affect stock returns (SRs) and prices. Actually, affecting

the forecasts of market participants about the firm to ensure a higher valuation of its stock price is a popular incentive for EM [5]. A relationship is established between EM and SRs in the existing literature [2]. However, such a relationship has not been addressed in the Palestinian context. Thus, this study seeks to examine it in this new environment since Palestine is an underdeveloped country with political instability [6–8]. In particular, this study assesses the extent to which Palestinian corporations practice EM to affect unexpected SRs. Our results indicate that SRs are affected by the EM practiced by management of the Palestinian companies listed on the PEX.

2 Background and Literature Review

Various EM definitions have been defined previously [9]. The term "embedded judgment" refers to management's use of judgments in financial statements and operational structuring to make intentional adjustments. Almasarwah [10] define EM as an intentional intervention in a firm's financial measurement and reporting process to achieve particular gains. EM practices are actions made by managers to alter profit margins in order to gain personal profit. Making financial reports and structuring operations such that earnings can be manipulated to affect contracts based on accounting figures in the company's financial reports or to mislead investors about the company's economic performance.

Management interferes in the financial statement preparation process for personal or private gain [3]. Accounting EM and real EM are two types of EM according to Commerford et al. [11]. Accounting EM uses accruals, accounting estimates, and accounting policies. Real EM is exemplified by management decisions that affect the timing of revenue-generating activities. Gunny [12] provided three EMs: fraudulent accounting, accrual management, and the real EM. Accounting choices that disrupt the adopted financial reporting framework create false accounting. Accounting rules allow for flexibility in accrual management. Real EM includes manipulating reported earnings. A real EM, according to Sugiyanto and Candra [13], is a purposeful management move that alters the timing or structure of transactions to deny profit. Roychowdhury [14] showed management uses real EM to hide annual losses. Similarly, Zhu and Lu [15], management employs real EM to boost company value.

Many common EM techniques have been found in the literature. Management may rely on estimates (e.g., inventory write-downs). An accrual current-period transaction is used to estimate future obligations, with the incentive to overestimate expenses. It allows you to save money when future earnings are lower than expected. When current earnings exceed the firm's aim, another EM approach is utilized to carry them forward [16]. Thus, management manipulates earnings to appear stable over time. This should boost market valuation [17]. Another method is to calculate depreciation, amortization, and depletion. Management uses judgment and estimations to increase or decrease these expenses and, hence, reported earnings. Management can also profit from a new or modified accounting standard to manage earnings. This method is used for early voluntary standard adoption or revision [16].

Schipper [3] believes that management intentionally intervenes to achieve some advantage. According to Chakour [18], the targeted management intervention occurs

during the financial statement preparation process. Management uses the standards' flexibility in calculating income components to influence profit growth or decline. EM is used for several reasons. To improve management efficiency indicators to increase their compensation [19], to avoid regulatory violations [16], or to defend the firm's stance in contractual partnerships based on financial reporting [20]. Rahman et al. [16] demonstrate how EM is utilized to misclassify gains and losses as income or equity in a firm's portfolio. They characterized management's motivations for using EM as smoothing out income, maximizing management bonuses, improving the firm's image of meeting contractual obligations with lenders, improving its position with labor unions, and increasing market value. Thus, confidence in reported profitability has dwindled due to the notion that management desires drive financial statement preparation [10]. The financial statements' substance is determined by the management's message to the users. Rath and Sun [21] claim that EM affects financial reporting and resource allocation.

Management wants to misrepresent the firm's performance to boost stock prices and returns [6]. Supply and demand decide the price. Good news about the firm's performance would boost the stock price, and vice versa. Thus, reported earnings impact the stock price. Good news raises investors' expectations of higher returns. Shan [22] shows that both good and bad news enhance future stock-return volatility. An SR is the investor's profit. This investor, who buys stock, must be comfortable with all future risks and uncertainties [13]. Expected SRs are based on past data. Actual returns are realized investor returns. However, unexpected returns are those generated by unanticipated events. Commonly used models including the Capital Asset Pricing Model (CAPM), the Zero Growth Dividend Model, and the Average Annual Growth Rate (AAGR) quantify expected returns (AAGR). Unexpected returns occur when actual returns do not match expectations. These returns can be positive or negative depending on EM. When investing in stocks, an investor's return is calculated. This is based on every piece of data, including EM activity. Researchers, regulators, corporations, and investors have all expressed an interest in EM practices [23]. The literature has shown particular interest in EM. Many studies have addressed the topic of EM in various circumstances. Sayari et al. [24] used the Jones Model to predict Tunisian enterprises' EM practices. The study found downward EM. Bjurman and Rahman [25] found that EM is employed for tax purposes. Zhu and Lu [15] discovered that management undertakes activities to increase firm value before M&A.

Several research have looked into the EM-SR relationship, with inconsistent outcomes [24, 25]. Using the Modified Jones Model [26], Savov [27] found an EM-investment link. The study concluded that they are both driven by similar factors. Ismail and Witarno [28] found that EM increases SRs. Also, Gift, Gift, and Yang [29] discovered a favorable correlation between EM and US and Chinese SRs. Huang and Ho [30] found that EM's stock liquidity component is linked to future SRs in Chinese enterprises. High-incentive managers use EM [31]. Al Omush et al. [32] measured EM with the Jones and Modified Jones Models. The study found that EM slightly influences Jordanian company SRs reflecting inefficiency of Amman Stock Exchange. However, Bhutto et al. [33] found a negative correlation between SRs and both real and accrual EM. The combined impact of real and accrual EM on stock performance is likewise negative. A negative correlation was found between EM and investor SRs by Wu et al. [34]. Hunt

et al. [35] discovered that lower earnings volatility correlates with better equity market value. According to Sugiyanto and Candra [13], actual EM has little impact on SRs.

In Palestine, there are some studies that address EM by examining its relationship with different related issues. For example, Abu Alia et al. [1] reported that Palestinian companies are actively practicing EM. Abu Alia and Barham [36] found no effect of EM on the relationship between CSRD and firm value. However, studies that examine the relationship between EM and SRs in Palestine are rare. Therefore, this study examines such a relationship by focusing on the companies listed on the Palestine Exchange (PEX) in an attempt to answer the question of how EM practice affects the SRs of the companies listed on the PEX.

3 Research Methodology

3.1 Data

Following previous studies (e.g., Bhutto et al. [33]), the study includes only non-financial companies. All non-financial publicly traded corporations listed on the PEX are considered. Data were manually collected from these companies' annual financial statements from 2014 to 2019, assuming the necessary data was available. The final sample consisted of 31 firms and 186 firm-year observations.

3.2 Variables

The Dependent Variable (Unexpected Stock Return). SRs can be broken down into three groups: expected returns, actual returns, and unexpected returns. Expected returns are what an investor expects to get from an investment, mostly based on historical data. Actual returns are real returns received by investors. However, unexpected returns are returns of an investment caused by sudden, unexpected events. The unexpected SR will be calculated according to the following equation:

$$UR = AR - ER$$

where:
   UR: unexpected return.
   AR: actual return.
   ER: expected return.
   The actual SR is calculated as follows:

$$AR = \frac{Pi + Div - Pi\text{-}1}{Pi - 1}$$

where:
   Pi: stock price at the end of the period.
   Pi–1: stock price at the begging of the period.
   Div: declared dividends.

There are many ways to calculate the expected return. However, due to the limitation of having no reliable database, we have chosen the following approach:

$$ER = \frac{\left(\sum_i^n AR\right)}{N}$$

where:

ER: Expected Return

AR: Actual Return

i: Beginning year of the period

n: End year of the period

N: Number of years in the period

According to this equation, the expected return represents the average actual return in the previous three years.

The Independent Variable (Earnings Management). Previous research has identified a collection of models used to assess EM. DeAngelo [37], Healy [2], Jones [38], Modified Jones [26], and Cross-Sectional Jones [39]. Many research (e.g. Dechow et al. [26] use accruals to measure EM. Total accruals are a combination of two types of accruals. Unlike non-discretionary accruals, which occur as a result of natural processes, discretionary accruals derive from management's voluntary actions to manipulate profitability. The Modified Jones model, established by Dechow et al. [26], is the most widely recognized in the accounting literature. Dechow et al. [26] investigated numerous EM detection models and found this one to be the most effective and dependable. Furthermore, Soliman and Ragab [40], Abbadi, Hijazi, and Al-Rahahleh [41] found the Modified Jones Model to be the most reliable model for measuring EM. Kasznik [42] also monitor the company's success by including changes in operating cash flow into the Jones Model. In this study, the Kasznik [42] approach will be utilized using the following steps:

1. Total accruals will be calculated according to an operating model that states that total accruals equal the difference between net profit after taxation and net cash flow from operating activities.

$$TAit = NIit - CFOit$$

where:

NIit: the net income amount of firm i at year t.

CFOit: the amount of cash flow from operations of firm i at year t.

2. The modified Jones model used by Kasznik [42] will be estimated. The error term is then used to calculate the non-discretionary accruals. This model is represented as follows:

$$TA_{it}/A_{it-1} = \alpha_1(1/A_{it-1}) + \alpha_2\big[(\Delta REV_{it} - \Delta REC_{it})/A_{it-1}\big] + \alpha_3(PPE_{it}/A_{it-1}) + \alpha4(\Delta OCFit/A_{it-1}) + \varepsilon_E$$

where:

TAit is the total accruals of firm i in year t,

OCFit is the amount of cash flow from operations of firm i at year t,

A it-1 is the total assets of firm i at the end of year t-1,

ΔREVit is the change in revenues of firm i between years t and t-1,

ΔRECit is the change in receivables of firm i between years t and t-1,

PPEit is the total of property, plant, and equipment of firm i in year t,

εit is the residual, represents the discretionary portion of total accruals of a firm.

3. Finally, the absolute value of discretionary accruals is used as the independent variable of this study.

Control Variables. Following the previous studies, three control variables were included in the estimation model. These variables include firm size, which significantly has an effect on SRs [8, 15, 32, 43], firm profitability [13, 23, 26, 42], and financial leverage [44, 45].

4   Findings

4.1   Descriptive Results

Descriptive indicators in Table 1 indicate that unexpected returns have a mean of –3.4% and EM is 5.9%. Other indicators are self-explanatory. The number of observations varies between variables, as shown in the last column of Table 1.

Table 1. Descriptive indicators

	Mean	Median	Maximum	Minimum	Std. dev	Observations
Unexpected Return	–0.034	–0.030	0.419	–0.978	0.192	148
Earnings management	0.059	0.043	0.356	0.000	0.063	152
ROA	0.029	0.017	2.860	–0.622	0.232	183
Leverage	0.305	0.301	0.780	0.008	0.194	183
Size	7.308	7.282	9.009	5.955	0.666	182

4.2   Correlation Analysis

The bivariate correlations in Table 2 exhibit a positive relationship between all variables, except for leverage and the unexpected return. Other correlations between independent variables are small, indicating the absence of multicollinearity problems in the subsequent regression.

Table 2. Bivariate correlations

Correlation	Unexpected return	Earnings management	ROA	Leverage	Size
Unexpected return	1.000				
Earnings management	0.079	1.000			
ROA	0.042	–0.089	1.000		
Leverage	–0.127	0.045	–0.108	1.000	
Size	0.073	–0.091	0.283	0.200	1.000

4.3   Estimation Results

Using the robust least square regression to account for outliers, we investigated the relationship between EM and unexpected SRs. The R square, which represents the ability of independent variables to justify the variability of the dependent variable (Unexpected SRs), is at 14% and the Rn-squared statistic, which is a robust version of the Wald test of the hypothesis that all of the coefficients are equal to zero, is rejected at a high significance level. Both results indicate that the model is adequate in explaining the relationships in this study (Table 3).

Table 3. Estimation results

Dependent variable: unexpected return				
Variable	Coefficient	Std. error	z-statistic	Prob.
Earnings management	**0.54**	**0.20**	**2.73**	**0.01**
ROA	**0.67**	**0.05**	12.94	**0.00**
Leverage	–0.10	0.07	–1.46	0.14
Size	–0.01	0.02	–0.42	0.67
C	0.03	0.15	0.20	0.84
R-squared	0.14			
Adjusted R-squared	0.11			
Rn-squared statistic	192.96			
Prob (Rn-squared stat.)	0.00			
Included observations: 145 after adjustments				
Robust least squares is used with MM-estimation and Huber type I standard errors & covariance				

The main result revealed a strong positive relationship between EM and unexpected SRs at a 1% level of significance. Our results are consistent with the results obtained in several markets by previous studies [27–30]. This result implies that more protection for investors should exist. In this regard, initiatives from the different regulatory and professional parties are supposed to be influential.

With regard to the control variables, it is found that SRs are significantly affected by the company's profitability. On the other hand, the size and leverage of the company had no significant effect on the unexpected SR.

5   Conclusions

Earnings management methods affect the reliability of financial data, resulting in misleading financial statements of reduced quality and impartiality. This study found that EM had a large positive effect on surprise SRs in Palestine. The following are some of the recommendations drawn from the research: First, EM must be curbed by utilizing the audit committee's monitoring authority in publicly traded companies. As a result, high-quality accounting data and user trust are achieved. Second, improve the accounting profession and auditing in Palestine, and train its members to detect and reduce EM acts. Companies that distort earnings must be punished. This is the third step to making your financial statements credible, trustworthy, and fair. Fourth, future study should examine the impact of environmental elements (e.g. culture) on EM. It is proven that these factors affect financial reporting [46, 47, 48].

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The Relationship Between Disclosure Quality and Firm Performance: Evidence from Companies Listed in Palestine Exchange

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Abstract. Disclosure quality enhances market efficiency and attracting investments for the firms which has positive consequences for the firm's performance. This study investigates the relationship between disclosure quality and performance of the companies listed on the Palestine Exchange (PEX). The study includes 49 firms covering the period from 2005 to 2016. while several indicators are used to measure firms' performance, disclosure quality is assessed by discretionary accruals. Using GMM analysis, a significant relationship is found between disclosure quality and performance of the companies listed in the PEX.

Keywords: Disclosure quality · Firm performance · Palestine Exchange · GMM

1 Introduction

The goal of disclosures is to provide timely and accurate information to a variety of users. Executives should be cautious about the accuracy and sufficiency of the information included in the financial statements as these statements represent the primary instrument for communication with users. It is established that a relationship exists between the disclosure quality and the performance of firms and accordingly the investors decisions [1]. Palestine is an underdeveloped country with political instability [2, 3]. Economic growth and attracting investment are always considered as priorities. Accordingly, disclosure quality has significantly considered by the Palestinian regulators, The Palestine Capital Market Authority (PCMA) has worked to ensure that users of financial information have adequate access to high-quality information. This study addresses the impact of disclosure quality on a company's performance. A panel data of 49 companies listed on the PEX was collected from 2005 to 2016. Following previous studies, discretionary accruals is used to assess disclosure quality. On the other hand, six variables are used to

assess company performance: return on assets, return on equity, revenues, net income, liquidity, and Tobin's Q. Results reported a significant relationship between disclosure quality and company performance.

2 Literature Review

Several studies asserted the necessity of having high-quality disclosure arguing that the high-quality disclosure improves the firms' performance. It fosters true transparency and it is a key method used to manage corporations in the context of capital market [4] is. High-quality disclosure enhances the ability of shareholders in making well-informed decisions. It is one of the most beneficial instruments in protecting investors, attracting capital, and maintaining confidence in the capital markets. The lack of transparency leads to the loss of market integrity, which carries enormous costs not just for the company and its shareholders, but also for the economy as a whole. As a result, shareholders and potential investors require precise, complete, and comparable information in order to make informed selections. A lack of knowledge or clarity impairs the ability of markets to function and raises the cost of capital [5]. Disclosure quality can be measured by the qualitative characteristics of accounting information. However, lack of direct measures for these characteristics, push the researcher to rely on the earning management practices to measure disclosure quality [6]. Disclosure quality is obtained from the quality of profits declared. Accordingly, the higher the level of discretionary accruals, the wider the gap between economic performance and financial reporting results [7]. The firm benefits from the high degree of disclosure quality since it lowers the cost of capital. Soheilyfar [8] found a strong association between corporate governance and disclosure quality. Similarly, [9] showed that disclosure quality is influenced by corporate governance. The accounting literature has considered the relationship between accounting information, cost of capital, and firm performance as a critical issu. Botosan [10] indicated that information lowers the cost of capital by lowering investors' assessment risk. Heflin, Shaw, and Wild [11] showed that assessing the association between information and bid-ask spreads is difficult. They claimed that realized spreads capture transaction costs better than quoted spreads since many transactions are conducted within the quoted spread. When utilizing quoted bid-ask spreads, it is likely to attribute results to information effects incorrectly since the quoted bid-ask spread also reflects order processing and inventory holding expenses. Thus, these constraints exist, and a more sophisticated information asymmetry measure is required to account for them, and a negative relationship between bid-ask spreads and the level of knowledge was discovered. Disclosure quality and policies that reduce information asymmetry boost the liquidity of a company's securities, raise the current stock price, and lower the cost of capital [10]. In firms with strong management and weak investors, managers might take advantage of their shareholders by withholding important information, resulting in the inescapable occurrence of agency costs. Aksu and Kosedage [14] confirmed the effect of disclosure quality on company performance. Similarly, Mohammadi [15] found a positive effect of disclosure quality on firm performance. Likewise, Patel, Balic, and Bwakira [16] reported that disclosure quality has a beneficial influence on firm performance. Higher disclosure quality reduces the market beta of the firm, and thus reduce abnormal

returns and enhance confidence in the financial markets [17]. Disclosure quality ensures investor protection, greater access to the capital market, and raises firm profitability [16]. It improves the market efficiency and the efficient of investors' decisions [19, 20]. Consistently, Chi [21] findings showed a favorable association between disclosure quality and firm performance. For the financial companies in Palestine a study conducted by Asmar [22] investigated the bank-specific factors that influence the net interest margin of banks. Several characteristics, such as credit risk, risk aversion, bank orientation, and foreign banks, have statistically significant effects on the net interest margin, according to the findings.

3   Research Methodology

A panel of data was compiled from the annual reports of Palestinian companies listed on the PEX from 2005 to 2016. Palestine Exchange has 49 companies in 2016. We consider the available data because many companies were listed after 2005, and hence the data is imbalanced. Disclosure quality represents the dependent variable (DQ). Following previous studies, this study used the degree to which firms practice earning management to assess the quality of financial reporting [6]. Better disclosure is linked to lower use of earning management. Earning management is measured by discretionary accruals [7, 24] since disclosure quality is generated from the quality of earnings revealed in financial statements. In other words, the quality of financial reporting is derived from the quality of profits declared in these statements. The dependent variable of this study is firm performance. Many indicators are used to measure this variable including return on assets (ROA) which is calculated by dividing the firm's net revenue by its total assets [25], return on equity (ROE) measured by dividing a firm's net income by its total equity [26], revenues (RV) which are defined as the firm's total revenues [27, 28], net income (NI) as a measure of the firm's net income [29, 30], liquidity (LQ) calculated by dividing current assets by current liabilities [31, 32], and Tobin's Q (TQ) is calculated by multiplying the market share price by the number of outstanding shares [33]. Six models were developed to explore the influence of disclosure quality on firm:

$$Y = \alpha + \beta DQti + \beta t \tag{1}$$

where Y is ROAti, ROEti, RVti, NIti, LQti, or TQti. ROA stands for return on assets for companies registered on the Palestine Exchange, while ROE stands for returns on equity, RV stands for revenues, NI stands for net income, and LQ and TQ stand for firm liquidity and market firm price, respectively. The disclosure quality of companies listed on PEX is referred to as DQ.

4   Results and Discussion

The first portion of this section quantitatively describes the study's variables. To assess the normal distribution of each variable, the mean, biggest value, lowest value, standard deviation, and Jarque–Bera were determined. As seen from Table 1, the independent

Table 1. The independent variable (DQ)

Measure	DQ	ROA	ROE	RV	NI	TQ	LQ
Mean	−2250191	0.03	0.07	38214103	7448877	940151	2.25
Median	−768480	0.02	0.06	12563185	1480217	322657	1.37
Maximum	24772778	0.28	0.89	600000000	120000000	1470000	33.75
Minimum	−43581999	−0.2	−0.82	28752	−16525607	1450000	0.05
Std. dev	8574305	0.06	0.14	82313455	18589165	1920000	2.77
Observations	295	295	295	295	295	295	295

variable (DQ) has a mean of (2,250,191), a maximum of (24,772,778), a minimum of (−43,581,999), and a standard deviation of (8,574,305).

The stationary of the research variables (dependents and independents) was evaluated using the Augmented Dickey-Fuller (ADF) test to guarantee that there was no Unit Root problem. The ADF test revealed that all variables are not stationary, leading to acceptance of the unit root null hypothesis. Variables were then evaluated at the first difference. The data was found to be stable for all of the study's variables. Table 2 shows the findings of ADF P-Values at the level, first difference, and second difference for all variables.

Table 2. Results of augmented Dickey-Fuller test for unit root

Variable	Level		First difference	
	ADF statistics	P-value	ADF statistics	P-value
DQ	81.07	0.38	185	0.000
ROA	109.14	0.01	213	0.000
ROE	111.3	0.01	204	0.000
RV	76.51	0.53	142	0.000
NI	80.38	0.4	206	0.000
LQ	162.68	0	218	0.000
TQ	110.27	0.01	147	0.000

The study tested the hypothesis that statistics and econometrics use single-equation or multi-equation regression models of time series for modeling economic variables and their interrelationships, based on Box and Pierce methodology [24]. Their basic assumption is that time series or, in the case of multi-equation models, linear combinations are stationary. However, because most economic time series are non-stationary, this criterion is rarely met in practice. Because the economic variables were non-stationary in the analysis, the classical assumptions of normal regression methods were abused, resulting in erroneous estimations. Only when variables are stationary do traditional regression properties hold true. Most economic variables, on the other hand, are not stationary and

so do not satisfy these criteria. For this reason, and due to the small size of the population and the test of stationary of the variables in the study, the generalized method of moment (GMM) will be used to test the study hypotheses through first difference with one lagged dependent variable, allowing for the modeling of a partial adjustment mechanism, making it more appropriate for analysis than classical regression models. The following are the hypotheses testing results:

H1: there is a relationship between disclosure quality and return on assets (ROA). The findings of examining the link between disclosure quality and firm performance (ROA) utilizing (GMM) are shown in Table 3. The test was conducted with the dependent variable ROA as an instrumental variable at first difference. The coefficient of disclosure quality is ($-5.81E-10$) with t. statistic (-199.59) and P-value (0.000) according to J-statistic (191.93) and p-value (0.000). (0.0000). The findings revealed a negative significant link between the two variables, implying that disclosure quality has a negative impact on return on assets (ROA). This result contradicts Mohamadi [15]. As a result of the findings, we decided to reject the null hypothesis and embrace the alternative.

Table 3. Results of (GMM): the relationship between disclosure quality and ROA

	Coefficient		Std. error	t-statistic		Prob.
Variables						
ROA(-1)	0.013214		0.000	354.5699[**]		0.000
DQ	$-5.81E-10$		0.000	-199.59[**]		0.000
Effects specification			Cross-section fixed (first differences)			
Mean dependent var		-0.00035	S.D. dependent var	0.066098		
S.E. of regression		0.070783	Sum squared resid	1.88384		
J-statistic		191.9349	Instrument rank	49		
Prob (J-statistic)		0.000				

[**] Significant at 1%

H2: there is a relationship between disclosure quality and return on equity (ROE).
   Table 4 shows the findings of (GMM test)'s of the link between disclosure quality and firm performance (ROE), which was done with the dependent variable ROE as an instrumental variable at first difference. The model is fit based on J-statistic (46.48) and p-value (0.4523), both of which are greater than 5%. With a t statistic of (-23626) and a P-value of ($-1.77E-09$), the disclosure quality coefficient is ($-1.77E-09$) (0.0000). The findings revealed a negative significant link between the two variables, implying that disclosure quality has a negative impact on return on equity (ROE). This conclusion contradicts [20]. We reject the null hypothesis and accept the alternative hypothesis as a result of the findings.

Table 4. Results of (GMM) the relationship between disclosure quality and ROE

Variables	Coefficient		Std. error	t-statistic		Prob.
ROE(-1)	−0.29287		1.2E-05	−23626.4[**]		0.000
DQ	−1.77E−09		1.1E-11	−159.549[**]		0.000
Effects specification			Cross-section fixed (first differences)			
Mean dependent var	−0.00281		S.D. dependent var	0.180639		
S.E. of regression	0.153796		Sum squared resid	8.893562		
J-statistic		46.4835	Instrument rank	48		
Prob (J-statistic)		0.452341				

[**] Significant at 1%

H3: there is a relationship between disclosure quality and Tobin's Q.

The findings of examining the link between disclosure quality and firm performance (TQ) using (GMM) are shown in Table 5. The test was conducted with the dependent variable TQ as an instrumental variable. The model is fit based on J-statistic (43.95) and p-value (0.4738), both of which are greater than 5%. The quality of disclosure coefficient is (1.4430), with a t statistic of (15944) and a P-value of (0.0000). The findings revealed a substantial positive association between the two variables, which is consistent with Gelb & Zarowin [35] and Mohamadi [15]. We reject the null hypothesis and accept the alternative hypothesis as a result of the findings.

Table 5. (GMM) results the relationship between disclosure quality and Tobin's Q

Variables	Coefficient		Std. error	t-Statistic		Prob.
TQ(−1)	0.189977		0.000	12827.68[**]		0.000
DQ	1.442967		0.000	15944.6[**]		0.000
Effects specification			Cross-section fixed (first differences)			
Mean dependent var	125813.8		S.D. dependent var		22257490	
S.E. of regression	41986485		Sum squared resid		6.63E+17	
J-statistic		43.94728	Instrument rank		46	
Prob (J-statistic)		0.473877				

[**] Significant at 1%

H4: there is a relationship between disclosure quality and firms Revenues.

Table 6 presents the results of a test conducted by (GMM) to see if there is a link between disclosure quality and firm performance revenues (RV). The test was conducted

with the dependent variable RV as an instrumental variable. The model is fit based on J-statistic (45.15) and p-value (0.4237), both of which are greater than 5%. The quality of disclosure coefficient is (−0.7699), with a t statistic of (−16260) and a P-value of (0.0000). The results revealed a substantial negative association between the two variables, which contradicts Lang and Lundholm [19] and chi [20]. We reject the null hypothesis and accept the alternative hypothesis as a result of the findings.

Table 6. (GMM) results the between disclosure quality and firms revenues (RV)

Variables	Coefficient		Std. error	t-Statistic		Prob.
RV(-1)	0.557241		8.8E-06	63183.6**		0.000
DQ	−0.76999		4.7E−05	−16260**		0.000
Effects specification			Cross-section fixed (first differences)			
Mean dependent var	1942847		S.D. dependent var	13393705		
S.E. of regression	16332599		Sum squared resid	1E+17		
J-statistic		45.149	Instrument rank	46		
Prob (J-statistic)		0.423705				

** Significant at 1%

H5: there is a relationship between disclosure quality and firms net income.

The results of a test of the link between disclosure quality and firm performance net income (NI) using (GMM) are shown in Table 7. The test was done at first difference, with the dependent variable NI as an instrumental variable. The model is fit based on J-statistic (46.51) and p-value (0.4101), both of which are greater than 5%. The quality of disclosure coefficient is (0.2998), with a t statistic of (27465) and a P-value of (0.0000). As claimed by [35] and [19], the results revealed a positive significant association between the two variables. We reject the null hypothesis and accept the alternative hypothesis as a result of the findings.

Table 7. (GMM) results between disclosure quality and firms net income (NI)

Variables	Coefficient		Std. error	t-Statistic		Prob.
NI(−1)	0.076972		6.6E−07	116642.1**		0.000
DQ	0.299841		1.1E−05	27465.92**		0.000
Effects specification			Cross-section fixed (first differences)			

(continued)

Table 7. (*continued*)

Variables	Coefficient		Std. error	t-Statistic		Prob.
Mean dependent var		195383.2	S.D. dependent var		3172156	
S.E. of regression		3636594	Sum squared resid		4.97E+15	
J-statistic		46.50597	Instrument rank		47	
Prob (J-statistic)		0.41015				

** Significant at 1%

H6: there is a relationship between disclosure quality and firms' liquidity ratio.

Table 8 illustrates the results of a (GMM) test of the association between disclosure quality and firm performance liquidity ratio (LQ), with the dependent variable LQ entered as an instrumental variable. The model is fit based on J-statistic (46.14) and p-value (0.4663), both of which are greater than 5%. The quality of disclosure coefficient is (2.63E−07), with a t statistic of 207.71 and a P-value of 0. (0.0000). The findings revealed a substantial positive link between the two variables, implying that disclosure quality has a positive impact on the firm's liquidity ratio (LQ), and that as disclosure quality improves, so does the liquidity ratio. The findings lead us to reject the null hypothesis and accept the alternative hypothesis H6: there is a link between company liquidity and disclosure quality.

Table 8. (GMM) results between disclosure quality and firms liquidity ratio (LQ)

Variables	Coefficient		Std. error	t-Statistic		Prob.
LQ(−1)	0.237525		0.00012	2028.005**		0.000
DQ	2.63E−07		1.3E−09	207.7112**		0.000
Effects specification			Cross-section fixed (first differences)			
Mean dependent var		−0.00117	S.D. dependent var		3.207726	
S.E. of regression		4.121154	Sum squared resid		6385.951	
J-statistic		46.14281	Instrument rank		48	
Prob (J-statistic)		0.466356				

** Significant at 1%

5 Conclusion

Quality disclosure improves market efficiency and provides users of financial statements with reliable information for making informed decisions. This study looked at the impact of disclosure quality on company performance for companies listed on the Palestine Exchange (PEX) from 2005 to 2016. To investigate the association between these

variables, the researchers used the GMM approach. Disclosure quality has a favorable impact on Tobin's Q, net income, and liquidity while having a negative impact on return on assets, returns on equity, and revenues, according to the study. The study's contradictory findings show that more conceptual thinking on disclosure quality and company performance in emerging countries is required. For future research, we recommend to asses the influence of the environmental factors especially culture on the relationship between disclosure quality and performance. Several studies reported the importance of such factors on the characteristics of the financial reporting frameworks [36, 37].

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Executive Rewards and Firm Performance: A Study from Palestine

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Abstract. The goal of this study is to look into the relationship between executive pay and the financial success of Palestinian companies. The study is based on 41 companies' panel data from 2014 to 2017. ROA, EPS, and revenues were used to measure financial achievement, while executive compensation was calculated directly from annual reports. A GLS estimator found a positive relationship between executive pay and financial results as measured by return on assets and sales, but no link between executive compensation and earnings per share. Because earnings management strategies may have influenced the findings, they should be evaluated with caution. Furthermore, the small sample size makes drawing definite conclusions problematic. As a result, future work should break through this barrier and expand the scope and scale of research in this field.

Keywords: Executive rewards · Firm performance · Palestine

1 Introduction

Preventative activities, such as the installation and development of internal control systems, are essential to reduce the likelihood of an agency problem to a minimum because of the intense rivalry and complexities of connections between different parties in the organization [1]. Preventive methods, on the other hand, are insufficient to handle conflicts of interest among the company's management and other stakeholders [2–4]. Another option for resolving this dispute is to utilize incentives to drive top executives [5–8]. Because top management makes a large percentage of operational and investment decisions that are supposed to be in line with the company's objectives, and because human capital is a company's most valuable asset, this study looks at the impact of senior management compensation on the financial performance of companies listed on the Palestine Stock Exchange. Management pay is aimed to shift management incentives in the direction of the owners' interests, rather than competing with them.

According to the agency theory, conflicts between management (agent) and shareholders (principal) can be resolved through management remuneration, which was designed to reduce this conflict and influence management behavior in a way that benefits shareholders, i.e., wealth maximization [1, 9–11]. The board of directors has ultimate responsibility in making decisions and strategic planning, according to the Palestinian

Governance Code issued in 2009 [12]. The key issues of this law were the way businesses were managed and regulated, as well as the board of directors' capacity to create policies, objectives, and goals that coincided with the interests of shareholders and stakeholders. The presence of a member on the board of directors should not conflict with their other commitments. The Code of Governance recommends, at least, two independent members for the board. A member of the board of directors who is independent has no other ties to the company other than his position on the board of directors and makes decisions without being influenced by outside factors. Using optimal contracting assumptions drawn from agency theory, the board of directors should pay attention to senior management compensation as a way of attaining the company's objectives [13]. It's crucial to make sure that such payments are feasible.

Previous studies have discovered a correlation between top management rewards and financial performance, such as earnings, stock returns, and sales performance [5, 7, 8, 14, 15]. In other studies, financial incentives have been proven to enhance employee performance [16, 17]. In order to maximize an owner's wealth, this study will look at the relationship between compensation and key performance criteria in the Palestinian setting. There is little, if any, research in this field at the level of the Palestinian economy. The impact of top management compensation on the financial success of companies listed on the Palestine Stock Exchange adds to our understanding of how to use agency theory's optimal contracting assumptions to improve a company's future performance [13].

The purpose of this research is to look into the impact of senior management compensation on company financial performance, as defined by return on assets, earnings per share, and sales of publicly traded companies in Palestine from 2014 to 2017. Section 2 gives the theoretical underpinning for the remainder of this study. The methods and data are illustrated in Sect. 3. Section 4 summarizes the findings, while Sect. 5 wraps things up.

2   Theoretical Framework

According to the agency hypothesis, there is a clash between shareholders and management. Executives' aims may be conflicting with the goals of the shareholders. The board of directors is in charge of overseeing the work of the executives by organizing specialized committees such as the audit and incentive committees [1–4, 18]. As per the Palestinian Governance Code of 2009, the rewards committee's responsibilities include determining the board of directors' and top management's incentives, as well as reviewing these awards based on the firm's performance and industry. This suggests that executive salary is designed to motivate them to improve the company's performance, hence increasing the company's value. As a result, the central hypothesis of this study is that there is a positive link between executive pay and firm performance.

Executive compensation has been studied in the past to see how it influences corporate success. The body of studies indicates that senior executive compensation has a positive impact on company success. In this analysis, we focus on executive rather than the board of director's compensation. The reward might be anything as long as it benefits the personnel and satisfies some of their specific needs. Teams are rewarded in some way when they make a concrete or intangible contribution to the organization [19].

Bennett et al. [8] used a large data set of performance targets used in executive incentive contracts in a previous study to analyze pay goals and process results. They discovered that companies that meet or exceed their remuneration plans by a little margin outperform their targets in the future, whereas CEOs who miss their compensation targets are more likely to be terminated due to turnover. This process implies that there is a positive causal relationship between remuneration and performance. According to the researchers, organizations that just surpass their profits per share (EPS) targets have larger abnormal accruals and lower R&D expenditures, and firms that just exceed their profit goals have lower selling, general, and administrative (SG&A) expenses. This highlights the expense of connecting CEO compensation to financial performance, as managers may simply focus their efforts into financial reporting utilizing earnings management tactics to gain compensation, rather than enhancing performance or expanding shareholder wealth.

Firth, Fung, and Rui [15] look at the factors that may explain differences in the usage of performance-related remuneration in Chinese businesses, as well as the impact of different shareholder categories on incentive compensation use. Enterprises with government agencies as major shareholders do not appear to adopt performance-related remuneration. Companies with private-sector shareholders, on the other hand, link CEO pay to increased shareholder wealth or profitability. On the other hand, executive salary and performance sensitivity are minimal. This indicated that the firm's affluent owners influenced pay standards in order to achieve their own personal goals of wealth maximization. Compensation, however, appears to have an impact on the following year's financial success in this case as well.

The purpose of the management incentive structure, according to Bebchuk and Fried [20], is to increase corporate performance, which influences shareholder value. They discovered that salary influenced financial performance metrics in a positive way. Karami [21] hypothesized that remuneration must be efficiently created with effectiveness and efficiency in order to fulfill the high return of the company and its personnel. The overall goal of the ostensibly paid bonuses, according to Subekti and Sumargo [13], is to boost returns and performance. Executive salary has a considerable impact on firm performance, both in terms of ROA and Tobin's Q. Giving managers the incentives that encourage better work habits helps to ensure that CEO pay has a positive impact on financial performance measures [22]. Firth et al. [15] discovered a correlation between CEO pay and both accounting and shareholder wealth, as well as a link between CEO pay and profitability. Güngör [16] and Karami et al. [17] both found a positive effect. Stakeholder management, on the other hand, has been found to be important in deciding CEO compensation. CEO pay is significantly influenced by stakeholder management. The incentives that CEOs receive for enhancing financial success are frequently limited by stakeholder management. Furthermore, pursuing shareholder initiatives is likely to jeopardize the CEOs' personal fortunes [23].

Financial performance assesses the results of a company's policies and operations in monetary terms. The most often used financial performance indicators are accounting metrics and investment returns. Investor return refers to the ability to assess performance from the perspective of a shareholder, using the change in share price as an indicator of the investor's returns [24, 25] or the change in price added to dividends per share

as an indicator of the shareholder's returns. Accounting-based financial performance, often known as profitability, is used to assess a company's financial condition. It provides measurable financial data that is useful to investors as well as analysts [23, 26]. The most common metrics are return on asset (ROA), return on equity (ROE), and earnings per share (EPS) [27, 28]. This study will employ accounting-based measurements because investor returns are less likely to be linked to business success in weak and developing countries.

The majority of the literature reveals a positive relationship between CEO remuneration and financial performance, according to the previous studies outlined above. As a result, we may anticipate that top management bonuses will boost the firm's financial performance in the future year. As a result, the CEO remuneration plays an important role in increasing shareholder wealth. The following hypothesis will be formally investigated.

H1: CEO pay has a beneficial impact on next year's financial success.

3   Methodology

3.1   Sample of Study and Data Collection

The goal of this study is to determine whether there is a link between management remuneration and financial performance. Panel data was manually obtained from annual reports of Palestinian enterprises for the years 2014–2017. There are 48 businesses listed on the Palestinian Stock Exchange. Only 41 companies submitted the data needed to determine the variables in the study.

3.2   Variables and Model

In the sample's yearly financial reports, executive management remuneration is an independent variable. The lag natural logarithm is used to compute managerial compensation. Financial success, which is expressed as return on assets (ROA), earnings per share (EPS) [1, 11], or sales (natural logarithm of sales), is the study's dependent variable [13]. To adjust for extra confounding factors, a few control variables are included. Firm size, leverage, family management, number of family members on the board of directors, sales growth, auditor quality, and a dummy if the company loses money are all factors to consider [13, 15]. Table 1 contains a list of these factors.

To explore the impact of executive salary on next year's financial performance [13], the following model will be evaluated while controlling for the above-mentioned control variables.

$$Performance_t = \alpha + \beta 1\, COM_{t-1} + \beta 2 FM_t + \beta 3 Size_t + \beta 4 DFM_t + \beta 5 LEV_t + \beta 6 Loss_t + \beta 7 Growth_t + \beta 8 big4_t + \in .$$
(1)

where variables are defined in Table 1. The model is estimated using a GLS regression analysis to overcome heteroskedasticity problem.

Table 1. Variables' definitions

Variable	Name	Definition
Performance	*ROA*	Return on assets, for year t
	EPS	Earnings per share, for year t
	Ln REV	Log of sales, for year t
Compensations	*COM*	Log of CEOs compensations, for year t-1
Family membership	*FM*	% Of family members in the board of directors, for year t
Size of the firm	*Size*	Log of firms total assets, for year t
Growth rate	*GRW*	Growth in sales
Loses firms	*LOSS*	1 if the firm reports loss, and 0 otherwise
Family management	*DFM*	Family management.1 if the firm has at least two families, 0 otherwise, for year t
Leverage	*LEV*	Firm leverage (total liabilities/total assets), for year t
Audit quality	*Big4*	A dummy variable

4   Results and Discussions

The descriptive indicators for the variables are shown in Table 2. The average ROA and EPS are JD 0.141 and 2.7 %, respectively. About 6.6 % of the members are linked to one another. Leverage is around 14%, and 68 % of businesses employ a Big-4 auditor. The other symbols in the table are self-explanatory.

Table 2. Descriptive statistics

	Mean	Median	Maximum	Minimum	Std. dev	Observations
ROA	0.027	0.019	0.224	−0.622	0.085	163
EPS	0.141	0.090	1.080	−0.212	0.200	164
LNREV	16.120	16.507	20.345	10.185	1.988	164
LNCOM	11.828	12.667	15.532	0.000	2.861	164
FM	0.066	0.000	0.380	0.000	0.118	164
LNTA	17.678	17.490	22.310	13.910	1.853	164
DFM	0.341	0.000	1.000	0.000	0.476	164
LEVERAGE	0.139	0.060	3.460	0.000	0.313	164
LOSS	0.220	0.000	1.000	0.000	0.415	164
GROWTH	0.147	0.020	6.966	−0.910	0.654	164
BIG4	0.683	1.000	1.000	0.000	0.467	164

The bivariate correlation coefficients between all variables are shown in Table 3. All performance indicators are favorably associated with the compensation variable. The correlations between independent variables are often minimal, indicating that there are no concerns with multicollinearity. As a result, we may move further with the estimation.

Table 3. Correlation between variables

Variables	ROA	EPS	LNREV	LNCOM	FM	LNTA	DFM	LEVERAGE	BIG4
ROA	1.000								
EPS	0.431	1.000							
LNREV	0.260	0.247	1.000						
LNCOM	0.115	0.006	0.404	1.000					
FM	0.327	0.318	0.001	−0.046	1.000				
LNTA	0.109	0.085	0.774	0.336	−0.016	1.000			
DFM	0.220	0.231	−0.061	−0.212	0.778	0.069	1.000		
LEVERAGE	−0.104	−0.106	0.223	0.148	−0.126	0.307	−0.167	1.000	
BIG4	−0.099	−0.134	0.323	0.218	−0.135	0.411	−0.125	0.146	1.000

Table 4 shows the results of estimating the study's model utilizing the three dependent variables ROA, EPS, and LnRev. Each model is significant in their own right. The F-statistic for three of the models is less than 5%. The R-squared values for the three models are around 61.6 %, 47 %, and 92.5 %, indicating that the three models have substantial interpretation power. All three models reliably evaluate correlations between research variables.

The compensation variable has a positive and large impact on ROA and LnRev, but not on EPS. This evidence supports our hypothesis that there is a link between salary and performance. CEO compensation had a considerable impact on business success in both ROA and Tobin's Q, in Subekti and Sumargo [13], Bennett et al. [8], and Firth et al. [15]. However, this link, rather than being the result of attaining a performance target, could be the result of earnings management or the firm's future success.

A few control variables are shown to be significant as well. The way family firm is managed has a positive impact on firm's performance. In the Palestinian setting, a significant percentage of Palestinian businesses are owned by a small number of shareholders, notably family ownership. This appears to be a strategy for boosting value. The loss variable has a negative impact on ROA and EPS. Finally, while Big4 has a negative impact on both EPS and LnRev, size has a positive impact on both performance metrics [29, 30].

Table 4. Estimation results

	ROA			EPS			LNREV		
Variable	Coefficient	Std. error	Prob.	Coefficient	Std. error	Prob.	Coefficient	Std. error	Prob.
LNCOM (−1)	**0.003**	**0.001**	**0.033**	0.005	0.004	0.163	**0.068**	**0.023**	**0.004**
FM	**0.153**	**0.059**	**0.010**	0.247	0.170	0.148	**4.907**	**0.685**	**0.000**
LNTA	0.000	0.002	0.825	**0.015**	**0.004**	**0.000**	**0.888**	**0.035**	**0.000**
DFM	−0.010	0.011	0.394	−0.003	0.027	0.924	**−1.716**	**0.189**	**0.000**
LEVERAGE	0.001	0.010	0.912	−0.017	0.014	0.225	−0.244	0.259	0.349
LOSS	**−0.088**	**0.007**	**0.000**	**−0.125**	**0.016**	**0.000**	−0.161	0.125	0.201
GROWTH	0.003	0.004	0.428	0.002	0.014	0.915	0.159	0.154	0.304
BIG4	−0.008	0.007	0.211	**−0.058**	**0.015**	**0.000**	**−0.403**	**0.113**	**0.001**
C	0.003	0.025	0.910	−0.168	0.062	0.008	0.338	0.462	0.465
R-squared			0.616			0.470			0.925
Adjusted R-squared			0.596			0.443			0.921
F-statistic			30.869			17.188			237.444
Prob (F-statistic)			0.000			0.000			0.000
Method: Panel EGLS (Cross-section weights)									
Total panel (unbalanced) observations: 163									

5   Conclusion

From 2014 to 2017, this study examined the impact of management compensation on the financial performance of companies listed on the Palestine Exchange. As a result of the agency problem, the compensation system was created with the purpose of reducing conflicts of interest between shareholders and corporate executives. The results reveal that remuneration has an effect on the objectives for which it was paid. We looked at three performance parameters for the company: ROA, EPS, and sales. We identified a positive impact on asset return and sales, but not on earnings per share (EPS). The greater performance could have resulted from earnings management rather than increased efforts with the same available resources, therefore these conclusions are not conclusive. On the other hand, the favorable effect on sales is less sensitive to earnings management demonstrating a true advantage from pay given.

The study's most serious problem is its small sample size. Furthermore, the small size of the Palestinian economy may have an unanticipated impact on the results. Aside from economic factors, a company's end success may be influenced by a variety of political, social, and legal factors that must be addressed.

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Forensic Accounting Education Within the Australian Universities

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Abstract. The recent growing reforms of accounting education in global and Australian higher education institutions have opened new avenues for accounting education. The current research aims to explore forensic accounting teaching aspects within the educational programs offered by Australian universities. Thus, this study aims to understand the structure of forensic accounting teaching aspects in Australian universities and whether the teaching of forensic accounting in that context corresponds with the marketplace. The data was collected by examining Australian universities' websites. The analysis procedure is quantitative content analysis. The empirical results show that most forensic accounting courses in Australian higher education attempt to link students with the professional practice by using appropriate teaching pedagogies and exposing them to specific competencies. As a response to the scholarly calls for contributions to the advancement of empirical research in this field, this study explores forensic accounting teaching aspects in the Australian context. The current study endeavors to make several key contributions to the literature on forensic accounting teaching. This paper sets the stage for an empirical journey in this emerging topic, regarding further studies in the face of the ever-growing impacts of forensic accounting education and profession. For the holistic benefit linked to forensic accounting, the inclusion of forensic accounting education within the accounting curriculum will benefit internal and external university stakeholders. This study considers forensic accountants' essential competencies and how the universities equip their students with these competencies. Therefore, this research aims to inform policymakers, educators, and academics working in forensic accounting.

Keywords: Forensic accounting · Competencies · Pedagogy · Australian universities

1 Introduction

Forensic accounting is a growing interdisciplinary specialization. Researchers dealt with forensic accounting education, and it has been given a significant concern [1]. The demand for forensic accounting has been dramatically increased. However, the supply of forensic accounting educational programs has not kept pace with the increasing demand for forensic accounting alumni [2]. In other words, the forensic accounting educational programs were limited in scope. In addition, it can be argued that there is no approved pedagogical approach for teaching forensic accounting. All forensic accounting courses are constructed based on various philosophical beliefs toward the best approach [3].

This study investigates forensic accounting teaching aspects in Australian universities and empirically measures forensic accounting pedagogy and teaching ways in Australian universities. In addition, this paper addresses the issue of harmonization between forensic accounting education and forensic accounting professional practice. For the holistic benefit linked to forensic accounting, the inclusion of forensic accounting education within the accounting curriculum will benefit internal and external university stakeholders [4]. This study considers forensic accountants' essential competencies and how the universities equip their students with these competencies. Therefore, this research aims to inform policymakers, educators, and academics working in forensic accounting.

The main motivation of this paper is twofold. First, is due to the increasing importance and growing attention that the forensic accounting receives in the current period [3, 5–7]. Recently, the are many corporate scandals and fraud incident that require highly equipped practitioners to detect and deter. In addition, the complexity of business environment causes many financial and commercial dispute, which also require highly equipped practitioners to simplify the complexity and resolve the dispute in the financial litigations. Second, due to the lack of educational studies on the forensic accounting discipline [7, 8]. Hence, this paper is motivated to fill a gap in this area. Therefore, the main objective of this paper is to provide an examination of the reality of forensic accounting education within the Australian universities.

The remainder of this study structured as follows. The next section provides a review of relevant prior literature is provided. The methods of data collection and analysis are shown in the third section. The fourth section presents the result of this study and the discussion. The conclusion of this paper is presented in the fifth section.

2 Literature Review

2.1 The Importance to Meet Workplace Needs

Due to the increasing complexity in the business environment, educationalists have called for more alignment between the competencies of the accounting graduates and workplace needs [9]. Accounting researchers reported on different learning approaches that would achieve the appropriate alignment between graduates competences and workplaces needs [10]. Alaqrabawi and Alshurafat [11], reported on the efforts by prior accounting researchers to align the competencies of the accounting graduates and workplace needs. They found that there is lack of alignment and the accounting students should

emphasize more on the intellectual, technical, personal, interpersonal, and professional skills.

In the field of forensic accounting, researchers have reported on many useful pedagogies and teaching approach to be used to teach the wide spectrum of forensic accounting duties [3, 5]. Alshurafat, Beattie [3], named different useful pedagogies that might align forensic accounting students with the workplace requirements. These pedagogies are based on the experiential learning approaches such as mock trail, guest speaker and case studies. Gabrielli and Medioli [12], asserted on the usefulness of using statistical method such as Benford's Law and Beneish Model to detect corporate fraud. Therefore, theoretical-analytical pedagogies are also useful to be taught to the students in the field of forensic accounting.

2.2 Implementation of Forensic Accounting Education

Forensic accounting is associated with many benefits. Forensic accounting is an interdisciplinary field that covers topics that deal with a broad range of knowledge, skill, and attributes in areas of interrogation, business valuation, fraud investigation, cybersecurity, litigation support, and expert witness [3, 6–8, 13, 14]. Carpenter, Durtschi [15] argue that forensic accounting education enhances students' skepticism level. They reveal that students with forensic accounting education assigned higher relevancy assessment to fraud risk factors in comparison to students without forensic accounting education.

On the positive side, Brickner, Mahoney [16] found that the perceived knowledge of forensic accounting programs enhances the students' skills and abilities in evidence organizing, investigation process, interview technique, and communication skills. This argument is in line with Lee, Cefaratti [17], who used two phases experiment to confirm that those students who engage in a forensic accounting course show higher creativity levels than students who do not engage in a forensic accounting course. Besides, they reported that the creative capacity of students improves after engaging in a forensic accounting course.

2.3 Delivery Level of Forensic Accounting Education Worldwide

Recently, there is an increasing demand for a multidisciplinary educational program of interrogation, fraud and cybercrimes examination, litigation support, business valuation, and expert witnessing [2, 18]. Despite the rise in the need for forensic accounting services, forensic accounting educational programs offered at universities worldwide have not kept pace with this demand [19]. According to Rezaee, Lo [20] forensic accounting education has a rapid growth within countries like Hong Kong and China. Seda and Kramer [21] assert that forensic accounting education is available nowadays to the students more than in the past. Even with this increase in forensic accounting education, some universities are still lagging behind in adopting such programs. As part of this trend, Matson [22] presents practical ideas for independent study for students who may not be able to take a forensic accounting education in their university.

3   Methodology

This study aims to understand the structure of forensic accounting teaching aspects in Australian universities and whether the teaching of forensic accounting in that context corresponds with the marketplace. These aspects include the students' competencies, learning pedagogies, learning outcomes, and the students' learning experience. In this study, the main data source is the information posted on universities' websites within the Australian context, mainly the forensic accounting curriculum, handbooks, and syllabuses. The websites have been surveyed during March 2019.

Information was insufficient, particularly data related to the students' competencies and learning objectives. Therefore, the researchers contacted the course instructors by email and to gather more detailed data about the missing data. The collected data were entered into a database and prepared to be analyzed. In total, nineteen stand-alone courses of forensic accounting have been identified to be offered by thirteen universities. Besides, this study has identified four universities that offer five programs that encompass twenty-four courses. As shown in Table 1, the total number of forensic accounting units is 43, either as stand-alone courses or a course in programs of study. At the same time, 15 universities teach forensic accounting education in Australia.

Table 1. Research sample (Australian universities, which offer forensic accounting education)

University	Stand-alone courses	Program of study (Unit[a])
Deakin University	1	0
University of Melbourne	2	0
Queensland University of Technology	3	1 (3)
University of Southern Queensland	1	0
Griffith University	1	0
University of South Australia	1	0
Charles Sturt University	0	2 (9)
University of Technology, Sydney	1	0
Macquarie University	2	1(4)
Swinburne University of Technology	1	0
RMIT University	3	0
Monash University	1	0
La Trobe University	1	0
University of Wollongong	0	1 (8)
Western Sydney University	1	0
Total	19	5(24)
Total units	43	

[a]This figure refers to the number of the unit in the program of study.

3.1   Data Analysis

This study analyzed the data by applying quantitative content analysis [23]. Researchers used quantitative content analysis to examine those most addressed students' competencies and learning activities (pedagogies). The quantitative content analysis included the following:

- quantitative content analysis has been used to evaluate the importance of different educational issues related to forensic accounting education within the Australian universities [24].
- Competencies are defined as knowledge, skills, and abilities. The competencies have been quantitatively analyzed to understand which types of competencies are taught and the extent to which they are taught among forensic accounting courses.
- Learning activates 'pedagogies' are defined as the pedagogies used to deliver forensic accounting competencies. While assessment tools are those tools that are used to evaluate the students' performance in a forensic accounting course, either formative or summative assessments. Learning activates 'pedagogies,' and the assessment tools have been quantitatively analyzed to understand which types of pedagogies and the assessment tools are used and to what extent they are used among forensic accounting courses.
- The review of the course's websites revealed 193 sentences related to the anticipated outcomes of teaching forensic accounting (learning objectives). This research distributed the located intended learning outcome over five topics based on the identified patterns in the data. Each topic has been weighted against all learning objectives by dividing the number of sentences for the topic by the total number of sentences (n = 193).
- After locating the content of competencies, learning activates, and the learning objectives, a descriptive analysis has been conducted to understand the weight of each of them. Based on the descriptive analysis, the importance of each kind of the competencies, learning activates, and the learning objectives is determined and shown in the following tables.

4   Results and Discussion

4.1   Results of Descriptive Analysis

Competencies Analysis. As shown in Table 2, stand-alone courses and program of forensic accounting within the Australian higher education introduce the students to different knowledge, skills, and abilities of forensic accounting, which can be divided into three sets as follows:

- High supplied, more than 60% of the courses provide it.
- reasonably supplied, 30% or more and less than 60% of the courses provide it.
- less supplied, less than 30% of the courses provide it.

No remarkable difference has been found between the competencies results related to stand-alone courses and program of study courses.

Knowledge. In the high supplied set, knowledge areas with a frequency percentage of more than 60% are included. The first knowledge area encompasses accounting, auditing, and internal control, which are the fundamental knowledge for all courses (Highly supplied); the students must comprehend accounting as assumed to be a prerequisite knowledge. Understanding accounting concepts facilitates students with knowledge of financial reporting and disclosures. Therefore, students would articulate their accounting knowledge with forensic accounting knowledge to understand forensic work in the accounting context. It is critical to understand the applicable principles and standards of financial statements and disclosure. As well as the system of internal control and external auditing to limit the probability of criminal activates. Moreover, the strength to have that investigative flexibility of moving away from statutory audit procedures to an investigation that is more forensic-oriented is an essential capability for forensic accountants. These results are consistent with the findings of [25].

The second knowledge in this set is the knowledge of fraud investigation. The courses mainly aim to provide the student with appropriate theoretical and practical knowledge of fraud investigation techniques. These results are in line with the results of Rezaee, Crumbley [25], Fleming, Pearson [26], and Curtis [27]. As forensic accounting has a great deal with law and courts, the third most supplied knowledge is law knowledge. The law knowledge for forensic accounting students includes collecting and managing evidence and performing expert witness, court rules, and court procedures. In professional practice, forensic accountants have to acquire law knowledge. This finding is consistent with earlier studies, such as [28].

Knowledge areas with a frequency percentage of 30% or more and less than 60% are included in the second set (reasonably supplied). The second set encompasses knowledge of corporate governance, ethics, business environment, and criminology. Ethics has been recommended to be a subtopic of forensic accounting education by previous researchers [28]. Similarly, criminology has also been identified as a major subtopic in forensic accounting education [16, 27]. In the less supplied set, knowledge areas with a frequency percentage of less than thirty percent are included. These knowledge areas are risk assessment, information technology, social responsibility.

Skills. A forensic accountant should gain specific skills and traits to act professionally [29]. Similarly, skills have been distributed over three sets (High supplied, reasonably supplied, and less supplied). The most supplied skills within the forensic accounting courses are investigative and analytical. These skills have a percentage of frequencies sixty percent or more. These remarkable characteristics can differentiate the role of forensic accountants.

The second set of skills, this set of skills includes communication and research skills. Forensic accounting education qualifies students to gain written and oral communication skills, critically-thinking, and make solid decisions in the business environment based on research results using research skills. The communication skills and the research skills received more than thirty percent and less than sixty percent. The last set includes judgmental skills and technological skills. These skills received less than thirty percent of the percentage of frequencies. Accordingly, these results are a line with prior research, such as [29].

Table 2. Knowledge, skills, and attribute

Competencies		Stand-alone forensic accounting courses		Ad hoc program of forensic accounting		Total frequency	Total percentage
		Frequency	Percentage	Frequency	Percentage		
	Total sample	19	100%	24	100%	43	100%
Knowledge	Accounting, auditing, and internal control	19	100%	19	100%	43	100%
	Fraud investigation techniques	17	89%	18	75%	35	81%
	Law	15	79%	13	54%	28	65%
	Corporate governance	10	53%	6	25%	16	37%
	Ethics	6	32%	9	38%	15	35%
	Business environment	7	37%	7	29%	14	33%
	Criminology	4	21%	9	38%	13	30%
	Risk assessment	7	37%	4	17%	11	26%
	Information technology	5	26%	5	21%	10	23%
	Social responsibility	1	5%	6	25%	7	16%
Skills	Analytical skills	16	84%	12	50%	28	65%
	Investigative skills	13	68%	13	54%	26	60%
	Communication skills	11	58%	9	38%	20	47%
	Research skills	8	42%	6	25%	14	33%
	Judgment skills	4	21%	2	8%	6	14%
	Technological skills	3	16%	2	8%	5	12%
Abilities	Critical thinking	11	58%	12	50%	23	53%
	Problem solving	11	58%	5	21%	16	37%
	Reports writing	10	53%	6	25%	16	37%
	Work with team	10	53%	6	25%	16	37%
	Work independently	7	37%	5	21%	12	28%
	Using computer software	5	26%	4	17%	9	21%
	Decision making	3	16%	5	21%	8	19%

Abilities. Forensic accountants should have certain abilities. The courses of forensic accounting report on seven abilities. These abilities have been distributed over two sets. The first set (reasonably supplied) encompasses the abilities that have received more than thirty percent and less than sixty percent, including critical thinking, problem-solving, report writing, and work with teams. These abilities require students to be able to approach all situations –critical thinking- and able to solve unstructured problems.

Furthermore, students have to have the capacity to work independently or with a group of other investigators. The second set (less supplied), which encompasses the abilities that have received less than thirty percent of the frequencies, includes work independently, using computer software, and decision making. Accordingly, the results on skills are in line with Davis, Farrell [29] study.

Learning Activates 'Pedagogies' Analysis. Learning activities are usually designed to help students develop many outstanding competencies [30]. Forensic accounting specific knowledge, skills and attributes need to be taught in specific ways [25]. Incorporating teaching methods related to forensic accounting work can give students more experience corresponding with the professional practice [31]. Investigating real and hypothetically fraud cases, playing expert witness, and participating in a mock trial empowers the student with hands-on experience.

Both stand-alone courses and programs of forensic accounting implemented relevant learning mechanisms to deliver forensic accounting education. Such as self-study and discussion groups –directed learning activates– which are applied to allow the students to perform forensic accounting duties individually and with a team as joint investigation work; students have to participate in-class activities and discussions. Depending on articles in the field as sources of textual material aimed to introduce students to the existing body of knowledge in the forensic accounting domain (Table 3).

Table 3. Learning activates

Learning activates	Stand-alone forensic accounting courses		Ad hoc program of forensic accounting	
	Frequency	Average	Frequency	Average
Online learning	16	84%	24	100%
Literature review	9	47%	24	100%
Self-study	6	32%	24	100%
Case studies	10	53%	20	83%
Discussion groups/class participation	11	58%	8	33%

Learning Outcomes Analysis. Table 4 shows the learning objective distributed over the main forensic accounting core areas, these area have been identified based on the previous forensic accounting education studies [3, 5, 13], these topics includes fraud,

Table 4. The learning outcomes

Topics	Learning objectives	University
Fraud	Students are expected to: • Demonstrate different fraud types and schemes • Be conscious of recent fraud trends in a national and international context • Apply theories and techniques applicable to the fraud prevention and detection process • Be able to investigate fraud evidence in different contexts	33%
Knowledge, skills, and abilities	Students are expected to: • Understand the forensic accounting role • Develop and utilize adequate skills • Perform forensic accounting services with professional abilities • Develop student learning experience	26%
Accounting, audit, and internal control	Students are expected to: • Using Accounting mentality to support forensic accounting work • Explain the relationship between audit procedures and forensic accounting • Perform appropriate audit procedures in the context of fraud detection and prevention	16%
Litigation services	Students are expected to: • Understand the forensic accountant's role within the court • Conduct an active investigation plan within the relevant statutory and regulatory framework • Evaluate scenarios and provide recommendations	12%
Corporate governance and organizations' control systems	Students are expected to: • Understand sound corporate governance practice • Develop an understanding of risk management and control • Understanding fraud's effect on organization loss and possible failure • Utilize corporate governance measures and accountability frameworks to prevent fraud	10%

knowledge, skills, and abilities, accounting, audit, and internal control, litigation services, corporate governance and organizations' control systems. As illustrated in Table 4, the vast majority of the intended learning outcomes are correlated with fraud issues. For instance, after successfully completing a forensic accounting course, students will comprehend the essence of the forensic accountants' role as fraud investigators. Students also have to gain theoretical and practical knowledge of the new trend of fraud. They also have to recognize current issues challenging the organizations and the profession of forensic accounting.

In the second rank, universities aim to provide students with knowledge, skills, and abilities to gain a complete understanding of forensics accounting. In the third rank, accounting, audit, and internal control, students have to implement suitable audit methods in fraud investigation. In the fourth rank, litigation services and corporate governance and organizations' control systems, respectively. Regarding the litigation services, universities are intended to provide the students with sufficient comprehension of the forensic accountants' role in the litigation services. On the other hand, students are expected to analyze corporate governance's role and concept in corporate decision-making and corporate regulation. Besides, they have to recognize, define, and evaluate the effectiveness of various sources of regulation of corporate governance.

5   Conclusion

The purpose of the current study was to look at the correspondence between forensics accounting education and the current practice in the forensic accounting industry. The exploration in this paper covers forensic accounting competencies, pedagogies, and learning outcomes. Therefore, this study provides a new avenue of knowledge to academics and practitioners by providing new evidence on forensic accounting in a specific context. This paper provides constructive evidence about the student's learning experience and intrinsic goals of forensic accounting education, as claimed in the course specifications.

The overall results of this research highlight knowledge areas that should be encompassed in a forensic accounting curriculum which are accounting, auditing, and internal control. In addition, this study finds that the most supplied skills within the forensic accounting courses are investigative and analytical. While the most supplied abilities are critical thinking, problem-solving, report writing, and work with teams. The results show that forensic accounting specific knowledge, skills and attributes need to be taught in specific ways which could be experiential learning methods or traditional learning methods such as Investigating real and hypothetically fraud cases, playing expert witness, literature review, self-study, discussion groups/class participation and participating in a mock trial.

In term of the learning objectives, the findings show that the forensic accounting education programs in the Australian universities mainly focus on allowing the student to achieve learning objectives in fraud knowledge, skills, and abilities, accounting, audit, and internal control, litigation services, corporate governance and organizations' control systems.

Forensic accounting is a relatively new discipline that grabs the attention of different stakeholders. The paper provides implications on what and how to teach the student about forensic accounting through focusing on the Australian context as this context witnessed increasing attention for the forensic accounting profession and education. Therefore, the main implication of this research would be of benefit to forensic accounting students, educators, and practitioners. The findings in this article can benefit educators who want to improve or refine their current forensic accounting courses. Moreover, this study is important for students to join forensic accounting classes. Some accounting associations are planning to create forensic accounting specialization, and others are already doing so; this study may be of interest to them.

Just like any other research. This study has some limitations that might warrant future investigations. First, some universities websites provide heterogeneously and inadequate information about the courses. Second, the information provided in this paper was correct at the time of data collection by reviewing universities' websites. Future researchers could examine the correspondence between forensic accounting education in universities and the peak forensic accounting certification requirement to foster the accreditation process in one of the most valuable specifications in today's business environment. Future researchers should focus on some educational phenomena that would enhance forensic accounting education quality. This study has revealed some empirical evidence on the forensic accounting learning objectives, however, future researchers could expand the examination and provide more empirical evidence on the forensic accounting learning objectives to understand how these learning objectives could be tailored in a forensic accounting curriculum and how it should be presented to the forensic accounting students.

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The Impact of Accounting Ethics on the Professional Performance of Palestinian External Auditors

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Abstract. This research investigates the impact of accounting ethics on the professional performance of Palestinian external auditors in the Gaza Strip. A questionnaire was created using the descriptive-analytical approach to collect data from all Palestinian audit firms in the Gaza Strip. The data from 73 respondents was analyzed using multiple regression analysis. The results showed that the independent factors (i.e. integrity, objectivity, and independence; due professional care; professionalism; and confidentiality) had an influence on the dependent variable (i.e. professional performance). While this study adds to existing research, it also suggests that data might help academics and practitioners enhance professional performance.

Keywords: Integrity, objectivity, and independence · Due professional care · Professionalism · Confidentiality · Professional performance · Palestine

1 Introduction

Evidence demonstrates that an auditor's skeptical attitude is especially essential when analyzing fraud concerns, and that using it can help prevent major misstatements caused by fraud [1–3]. Each individual auditor is responsible for effectively applying professional skepticism throughout the audit, including identifying and analyzing the risks of material misstatement, performing tests of controls and substantive processes to respond to the risks, and reviewing the audit's outcomes. Failure to exercise skepticism is cited as one of the top three most significant elements in audit flaws in fraud cases in the United States [4]. The auditors' constant questioning mind is the motivating reason behind professional skepticism. Auditors must be aware of unconscious human biases and other circumstances that can cause auditors to gather, evaluate, rationalize, and recall information in a way that is consistent with client preferences rather than the interests of external users in order to maintain an attitude that includes a questioning mind and a critical assessment of audit evidence.

According to Enofe [5], ethics has a significant impact on an auditor's professional skepticism because: (I) they largely decide what he or she considers to be right, good, worthy, attractive, and ethical. (ii) They set the standards and norms by which he/she conducts themselves on a daily basis. (iii) They primarily shape his/her attitudes about the causes and situations with which he/she interacts on a daily basis, such as political, economic, social, and industrial challenges. (iv)They determine which ideas, principles, and concepts he is capable of accepting, absorbing, remembering, and transmitting without distortion. Several research had paid close attention to the function of ethics in accounting practice [6].

Accounting decision-making study argues that cognitive studies should take into account the context in which accounting decisions are made [7]. Accounting ethics is one area in which such decisions are made. Individuals must follow ethical guidelines when performing activities [8]. According to auditing literature, when auditors do their duties in accordance with the profession's ethics, it has a substantial impact on their conclusions. Accounting ethics, according to these research [9], improves the auditor's effort in applying due diligence and professional skepticism in the performance of their tasks. Furthermore, accounting ethics makes auditors more cautious, implying that auditors are more doubtful [10]. Peecher [11] discovered that auditors were more cautious. Similarly, accounting ethics, according to Nieschwietz [12], should improve audit effectiveness by making auditors more objective. According to the findings of the preceding studies, enforcing accounting ethics is likely to enhance professional skepticism since auditors will exert more cognitive effort and attentiveness, causing them to approach cautiously.

The purpose of the research is to analyze the challenges and the current state of accounting ethics education in Palestine. This research focused on measuring the impact of accounting ethics reforms and adaptation to auditing standards in increasing the quality of auditing services.

The importance of this study comes from its subject as follows:

- The Gaza Strip in particular and Palestine in general, and all Arab countries are going through a number of changes that will cast a shadow over all sectors and professions, and the accounting and auditing profession will certainly not be immune to these changes, which calls for the need to conduct many studies and research on the reality of The audit profession in general and the reality of the ethics and behavior of the profession in particular, in an effort to raise the level of the profession and improve its reputation in the community and try to bridge the expectations gap that exists between the profession on the one hand and the parties benefiting from its services on the other hand.
- The importance of accounting and auditing as a tool of economic development.
- The Palestinian Library's lack of research on this subject in the Palestinian environment, according to the researcher's knowledge.
- The importance of the study also comes in that it is an applied field, and it could be a prelude to other studies taking place in Palestine.

The rest of the paper is structured out as follows. Section 2 establishes the research model and hypotheses by incorporating earlier professional performance research. Section 3 introduces the methodology. The findings of the study are presented in Sect. 4, and the discussion of the findings, limitations, and future researches is concluded in Sect. 5.

2   Theoretical Background

2.1   Professional Performance of the Auditor

Employees' performance is measured by how well they fulfill tasks [13]. The job accomplished by an external auditor in carrying out the tasks entrusted to him is measured by quantity, quality, and timeliness and is dependent on his abilities, experience, and seriousness of time [14]. It can be claimed that auditor performance is expected to uphold professional ethics in line with the established code of ethics, that the auditor profession has principles and morals, as well as ethical behavior [15]. Understanding the importance of an auditor's ethical behavior in offering opinions can have far-reaching implications for how they approach their auditing activities in order to conform to generally accepted accounting. Auditors can meet the requirements of auditing standards by having sufficient job experience, education, and knowledge in the auditing profession, in addition to maintaining their independence. Auditor professional ethics is a professional employment in which each auditor follows the norms that have been established. The level of auditor independence is the responsibility of the public audit profession, which is expected to indirectly reflect independence and to be impartial in preparing reports on audit results that will be accepted by government agencies, the business world, and investors in carrying out its work [16]. In addition, auditors are expected to have work experience in their duties, which includes audit planning experience.

2.2   Accounting Ethics

Accounting ethics has been difficult to resist because accountants and auditors must balance the public's interest (which is based on information obtained through audits) with the need to ensure that the organization under investigation is still operational. They must evaluate how to properly smear accounting standards even when faced with problems that could result in a large loss or the company's demise [17]. The International Ethics Standards Board for Accountants, which is an independent organization, has established a code outlining the ethical accounting principles [18]. These principles cover a wide range of ethical issues for accountants, albeit special circumstances may need decisions that aren't specifically addressed in these guidelines.

Accounting professional ethics are the moral norms that govern accountants' actions when carrying out their tasks [19]. The International Ethics Standards Board for Accountants has established four essential principles [20], the IESBA Code of Ethics requires accountants to adhere to are: integrity, objectivity and independence; due professional care; professionalism; and confidentiality.

2.2.1 Integrity, Objectivity, and Independence

Integrity: All those who act in the public interest must behave with integrity. The engagement team must act and be seen to act with integrity, which includes not only honesty but also a wide variety of associated attributes including fairness, candor, and courage [21]. When there are disagreements with a client, the AICPA Code's Integrity Principle provides the framework for determining what is right or incorrect. Integrity is the foundation for moral action because it gives you the moral courage to do the right thing. Regardless of the circumstances exerted by a client, make the best accounting decision possible. It is preferable to do something else [22]. The Integrity Principle states that "Integrity is measured in terms of what is right and just. In the absence of specific rules, standards, or guidance, or in the face of conflicting opinions, a member should test decisions and deeds by asking: "Am I doing what a person of integrity would do? Have I retained my integrity?" Integrity requires a member to observe both the form and the spirit of technical and ethical standards; circumvention of those standards constitutes subordination of judgment" [23].

Objectivity: The idea of objectivity requires auditors to refrain from compromising their professional or business judgment due to bias, conflict of interest, or undue influence from others [24]. Objectivity aids in overcoming any threat of undue influence from company management, which makes it more difficult to make an unbiased decision regarding whether or not to report the audit firm. The demands placed on an external auditor by the firm's management could lead to a subordination of judgment [22]. The Objectivity Principle states that "Objectivity is a state of mind, a quality that lends value to a member's services. It is a distinguishing feature of the profession. The principle of objectivity imposes the obligation to be impartial, intellectually honest, and free of conflicts of interest. Independence precludes relationships that may appear to impair a member's objectivity in rendering attestation services" [23].

Independence: Individual members of the engagement team or audit company must be independent in order to protect their professional judgements from outside influences, and to behave with honesty, objectivity, and professional skepticism. It is also necessary to avoid facts and circumstances that are so significant that a reasonable and knowledgeable third party would be likely to conclude that the integrity, objectivity, or professional skepticism of a firm or a member of the engagement team has been compromised [21]. The accounting profession has long acknowledged the necessity for auditor independence in both fact and appearance, as independence lies at the heart of the audit function. In order to maintain the impression of independence in practice, an auditor must be free of any duty or interest that would jeopardize independence. The independence of auditors is required for the development of international auditing standards. The usefulness of any auditor's job to the client or the investing public is debatable if they are not independent [25].

Based on the above, we suggest the following hypothesis:

H1: Professional performance of the auditor is positively influenced by integrity, objectivity, and independence.

2.2.2 Due Professional Care

Due professional care is a professional competence that accountants must exhibit in order to evaluate audit evidence critically, methodically, and thoroughly [26, 27]. As a result, for the sake of public trust and confidence, the public accounting profession must operate with integrity and objectivity. Not only that, but accountability can have an impact on the quality of auditors. Laksita and Sukirno [28] explain that accountability is a psychological motivator that holds a person accountable for all of their actions and decisions. The greater the auditor's accountability, the higher the quality of the audit that results [29]. The complexity of the job to be done determines whether the auditor is responsible for the audit process [30]. Professional responsibility is a legal principle that applies to all professions. Although there is no universally accepted and authorized definition of what constitutes due care, a consistent understanding is progressively emerging in judicial practice. Based on the foregoing, we construct the following hypothesis:

H2: Professional performance of the auditor is positively influenced by due professional care.

2.2.3 Professionalism

The attitude and behavior that shape an individual's personality when performing certain occupations is referred to as auditor professionalism. According to Asikin [31], auditor professionalism is defined as having competence, technical skills, correctness in work, willingness to take risks, and high integrity as a manifestation of the auditor's job. Auditor professionalism is critical because government auditors are responsible for maintaining and managing state finances, as well as other interests that overlap with auditor professionalism. When it comes to private auditors, there is a lot of uncertainty, according to practitioners and scholars [32]. Also the term "professionalism" as applied to the auditing profession, has a public interest purpose, and is characterized by several cornerstone auditing concepts, including: due care, independence, objectivity, professional skepticism, and integrity. Based on the preceding, we construct the following hypothesis:

H3: Professional performance of the auditor is positively influenced by professionalism.

2.2.4 Confidentiality

Without the customer's approval, practitioners must not divulge confidential client information received during any type of interaction. Practitioners receive a great deal of confidential information during audits and most other sorts of engagements, including officers' salaries, product price and advertising plans, and product cost statistics. If auditors reveal this information to outsiders or client personnel who have been prohibited access to the material, their relationship with management may be damaged, and the client may be hurt in severe situations. The duty for secrecy extends to all CPA firm services, including tax and management services. Normally, the CPA's audit files can only be shared with someone else with the client's specific permission. This is true

even if a CPA sells his or her firm to another CPA firm or agrees to allow a successor auditor to see the audit paperwork [33]. Exceptions to Confidentiality are [34]: (a) Obligations related to technical standards, (b)Subpoena or summons and compliance with laws and regulations, (c) Peer review, and (d) and response to ethics division. Based on the aforementioned, we draw the following hypothesis:

H4: Professional performance of the auditor is positively influenced by confidentiality.

The conceptual structure of the study is depicted in Fig. 1. The dependent variable (i.e. professional performance) is connected to the independent variables in this model (i.e. integrity, objectivity, and independence; due professional care; professional-ism; and confidentiality).
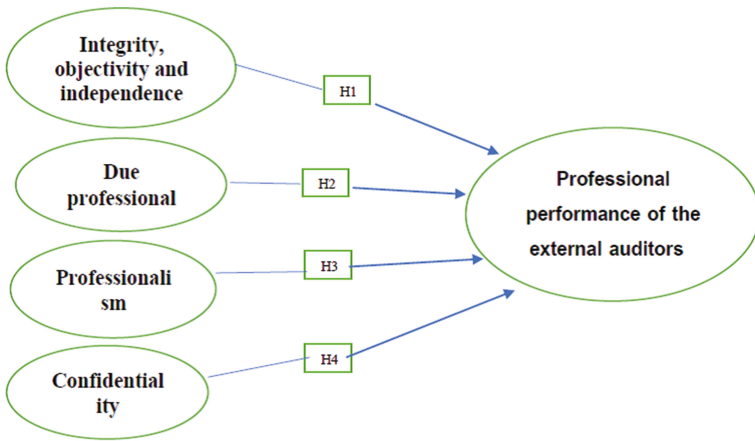
Fig. 1. The research framework

3   Methodology

3.1   Participants

According to Table 1, a total of 73 respondents completed and returned the survey. The findings of the demographic variables were presented in the table.

Table 1. Profile of respondents ($n = 73$)

Variables	Groupings	No. of respondents	%
Age	25 years or less	12	16.4
	26–35 years	19	26
	36–45 years	30	41.1
	46–55 years	8	11
	56 years and above	4	5.5
Gender	Male	57	78.1
	Female	16	21.9
Education level	Bachelor	34	46.6
	Master	29	39.7
	Ph.D	10	13.7
Experience	5 years or less	17	23.3
	6–10 years	42	57.5
	11 years and above	14	19.2
Marital status	Single	19	26
	Married	47	64.4
	Widowed	4	5.5
	Divorced	3	4.1
Monthly income	$500 or less	23	31.5
	$501–$1000	37	50.7
	$1001 and above	13	17.8

3.2 Procedures

The descriptive approach was utilized to explain the current status and answer key questions concerning the impact of accounting ethics on the professional performance of Palestinian external auditors in the Gaza Strip. As a result, survey research was used as the major approach for this study in which data collected through field visits to ensure a high response rate when employing a questionnaire. The original questionnaire was professionally translated into Arabic in order to correspond to local language standards, and it was then examined by two native Arabic speakers and pilot tested for accuracy. All Palestinian audit firms in the Gaza Strip received the questionnaire. For all statistical studies, IBM SPSS software version 21 was employed.

3.3 Measures

A 5-point Likert scale questionnaire was used in the questionnaire (1 = strongly disagree, 2 = disagree, 3 = no opinion/neutral, 4 = agree, and 5 = strongly agree). The survey was broken into five sections. The first section uses ten questions to measure integrity, objectivity, and independence, based on Mintz, [22], AICPA. [23], IFAC, [24], and Islam and Azim, [25]. In the second part, due professional care was investigated, and ten items were created in line with Rahardjo, [26], Faisal et al. [27], Laksita and Sukirno, [28], Sarwoko and Agoes, [29], and Heyrani et al. [30]. In the third section, eight items were introduced to assess professionalism [31, 32]. The fourth section includes seven questions to measure confidentiality from Arens et al. [33], and Kwanbo, [34]. The last section includes ten questions to measure professional performance from Manik and Syafrina, [13], Yuniasih et al. [14], Sunyoto, [15], and Furqan et al. [16].

4 Results

4.1 Factor Analysis

The KMO and Bartlett's tests were used to see if the factor analysis was appropriate for the inquiry. The results of the reliability test should be more than 0.7, and the Bartlett's Sphericity test should be less than 0.05. The KMO value of 0.718 is greater than the acceptable threshold of 0.000, suggesting that this analysis is sufficient for the research.

To construct the factor score coefficient matrix created by principal components analysis [35–38], one principle factor is rotated using the varimax normalization, as shown in Table 2. There are 45 variables in the factor. The lowest loading threshold for factor loadings on various scales, according to the research, is 0.30 [39–44]. All of the loadings in Table 2 are more than 0.30, suggesting that the scales' construct validity is maintained.

4.2 Hypotheses Testing

The relationship between the independent factors (i.e. integrity, objectivity, and independence; due professional care; professional-ism; and confidentiality) and the dependent variable (i.e. professional performance) was investigated using multiple regression analysis. The purpose of the multiple regression study was to determine how independent factors influence professional performance.

The independent factors account for 46.9% of the overall variance in professional performance (adjusted $R2 = 0.469$), according to Table 3. The model's quality was confirmed since the F value was significant at 0.000. Integrity, objectivity and independence (t = 2.327, p 0.000), due professional care (t = 3.213, p 0.000), Professionalism (t = 3.174, p 0.000), and Confidentiality (t = 2.872, p 0.000) were all positively associated to professional performance, as shown in Table 3. As a consequence, the data revealed that H1, H2, H3, and H4 were well supported by the data.

Table 2. Reliability and factor loading of the constructs.

Construct	Item	MV	SD	FL	Cronbach's α
Integrity, objectivity and independence	1	4.49	.503	.719	.835
	2	4.30	.735	.705	
	3	4.38	.613	.787	
	4	4.54	.814	.794	
	5	4.46	.744	.821	
	6	4.41	.890	.744	
	7	4.39	1.031	.747	
	8	4.18	1.102	.779	
	9	4.07	1.231	.821	
	10	3.95	1.204	.731	
Due professional care	1	4.12	.979	.787	.859
	2	4.18	.669	.819	
	3	4.18	1.163	.823	
	4	4.03	.993	.859	
	5	4.08	1.095	.716	
	6	4.19	.871	.826	
	7	3.97	1.205	.832	
	8	3.74	1.325	.801	
	9	4.20	.936	.900	
	10	4.31	.859	.759	
Professionalism	1	4.09	1.149	.862	.827
	2	4.46	.666	.833	
	3	4.15	1.043	.844	
	4	3.95	1.133	.827	
	5	4.08	.947	.733	
	6	4.26	.994	.810	
	7	3.99	.986	.804	
	8	3.95	1.181	.809	
Confidentiality	1	4.57	.829	.873	.847
	2	4.14	.865	.778	
	3	4.38	.806	.823	
	4	4.41	.618	.849	

Table 2. (*continued*)

Construct	Item	MV	SD	FL	Cronbach's α
	7	4.18	.927	.828	
Professional performance	1	4.34	.997	.872	.862
	2	4.38	.989	.849	
	3	4.36	1.041	.832	
	4	4.08	.990	.784	
	5	3.84	1.111	.791	
	6	4.09	.924	.904	
	7	3.96	1.210	.873	
	8	4.08	1.132	.778	
	9	3.89	1.267	.855	
	10	3.84	1.217	.767	

Table 3. Results of one-sample test.

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	1.543	.365		2.746	.000
Integrity, objectivity and independence	.292	.092	.264	2.327	.000
Due professional care	.317	.097	.287	3.213	.000
Professionalism	.276	.084	.253	3.174	.000
Confidentiality	.283	.089	.279	2.872	.000

Notes: Dependent variable: professional performance; adjusted $R^2 = .469$, sig. $= 0.000$

5 Discussion

5.1 Discussion of Findings

This paper investigates the relationship between the independent variable (i.e. integrity, objectivity, and independence; due professional care; professionalism; and confidentiality) and the dependent variable (i.e. professional performance). The findings show that integrity, objectivity, and independence have a positive and direct influence on professional performance. This is in line with previous research, which shows that anyone acting in the public interest must operate with integrity. The engagement team must act and be seen to act with integrity, which encompasses not just honesty but also a slew of other characteristics such as fairness, candor, and courage [21]. Also, auditors must

avoid compromising their professional or commercial judgment due to bias, conflict of interest, or undue influence from others in order to be objective [24]. Objectivity assists in overcoming any possibility of undue influence from corporate management, which makes making an unbiased judgment about whether or not to report the audit firm more difficult. Besides, individual members of the engagement team or audit firm must be independent in order to shield their professional judgments from other pressures and to act honestly, objectively, and skeptically [21].

Further, the data demonstrated a correlation between due professional care and professional performance. This is consistent with previous studies that reveal that due professional care is a professional competency that accountants must possess in order to critically, systematically, and comprehensively examine audit evidence [26, 27]. As a result, the public accounting profession must act with honesty and objectivity in order to maintain public trust and confidence.

Furthermore, the data revealed a link between professionalism and professional performance. Auditor professionalism refers to the attitude and conduct that develop an individual's personality when doing particular vocations. Auditor professionalism is characterized as having competence, technical skills, accuracy in work, readiness to take risks, and high integrity as a manifestation of the auditor's job, according to Asikin [31]. Because government auditors are responsible for safeguarding and managing state finances, as well as other interests that intersect with auditor professionalism, professionalism is essential. According to practitioners and academics [32], there is a lot of uncertainty when it comes to private auditors.

Moreover, the findings suggest that confidentiality has a positive impact on professional performance. Practitioners shall not reveal sensitive client information received through any sort of engagement without the customer's permission. During audits and most other types of engagements, practitioners are given a lot of secret information, such as officers' salaries, product pricing and promotion strategies, and product cost statistics. If auditors divulge this knowledge to outsiders or client workers who have been denied access to the material, their relationship with management might be jeopardized, and the client could suffer serious consequences [33, 34].

5.2   Limitations and Further Research

Contextual and application restrictions were among the study's empirical results. Our findings are based on Palestinian audit firms in the Gaza Strip, which may limit the applicability of our findings to other audit firms in the West Bank. Despite the fact that the findings apply to rising economies with comparable cultural roots, such as Palestine, they may not be suitable for places with different cultural situations. Second, the study was limited to Palestinian audit firms in the Gaza Strip, limiting the findings' relevance to other enterprises in the West Bank.

As part of future studies, the researchers recommends that the model be re-examined in different settings or cultures. Moderating factors may also be incorporated into the model to aid comprehension of the links and mechanisms underlying the situation at hand.

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Wasta and Favoritism: The Case of Kuwait

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Abstract. This study empirically explores the relationship between Wasta_ a social network, and interpersonal connections rooted in a family, tribe, and extended relationships__ and favoritism in Kuwait using Hedonism theory to explain why Kuwaitis in Kuwait use Wasta excessively. The authors collected primary data (N = 225) from males and female employees in the private sector in Kuwait via SurveyMonkey and used the Structural Equation Modeling technique (SEM) to test the three study hypotheses. The study findings show that there is a positive and significant relationship between Wasta and favoritism. The findings also conclude that out of the three Wasta components (Mojamala, Hamola, and Somah), Mojamala is the most influential factor that causes favoritism. The findings contribute to the literature by developing a Wasta conceptual for the relationship between Wasta, favoritism. Understanding the concept of Wasta could benefit foreign investors to cope, succeed, and flourish without violating their codes of ethics and business laws in Western countries. In addition, a good understanding of Wasta helps foreign firms doing business in Kuwait be aware of the unseen hand of Wasta and take proactive steps. Moreover, understanding Wasta would encourage multinational companies to prioritize designing training programs that educate international assignees on the importance of cultural values and norms.

Keywords: Wasta · Kickbacks · Favoritism · Social networks · Mojamala · Hamola · Somah

1 Introduction

The MENA region ranks poorly regarding corruption and business ethics because of bribery, kickbacks, and Wasta [1]. In the MENA, Wasta is linked to favoritism and accepted as a factor that reduces equal opportunities for employees and businesses [2].

Wasta destroys social and business equality by spreading the notion of unequal opportunities for business firms and employees as well as influencing corruption in three different forms; bribery, gifts, and favors. Wasta remains a dilemma when doing business in Kuwait, and the Arab World in particular. For example, Wasta is deeply rooted in Kuwait negatively affecting employee commitment, organizational innovation, and human resource management practices [3]. Hence, it is essential to investigate Wasta and favoritism in Kuwait in particular. By being aware of Wasta and addressing the problem proactively, policymakers and business leaders can mitigate Wasta problems and their consequences. Therefore, business leaders and academic researchers must better understand how Wasta relates to favoritism (i.e., favoring family members, tribesmen, friends, etc.) on other people who are more qualified and competent than the favored ones for personal gain. Wasta in Kuwait is associated with social links, and it influences decision-making in business and social settings [4]. In Kuwait people practice Wasta in three different forms; Mojamala (i.e., the feeling of loyalty and emotional understanding), Hamola (the level of owing or being owed favors), and Somah (i.e., a person's reputation and credibility in a society) [5]. Although no previous empirical studies link Wasta and favoritism [6, 7], there is substantial evidence that there should be a conceptual link between the two [8, 9]. Despite strong theoretical links between favoritism and Wasta, there have been no empirical tests of this relationship. Hence, the purpose of this study is to fill the abovementioned gap in the literature by empirically examining the relationship between Wasta and favoritism. This leads to two research questions. Does Wasta relate to favoritism? How does Watsta relate to favoritism?

This research paper adds a significant theoretical contribution by empirically examining the link between Wasta, favoritism. In addition, this study results provide practical implications for international corporations to better understand Wasta in Kuwait. Multinational companies could avoid legal dilemmas and hire the right managers when they run business in Kuwait.

2 Reviewing Literature and Developing Hypotheses

2.1 Corruption

Corruption is defined by Transparency International (TI) as the abuse of entrusted power for personal gain. Corruption is a behavior that is prevalent in Kuwait and deeply rooted in the MENA region in particular [10]. In the MENA region, corruption is affected by political systems and the local culture [11]. Corruption splits society into three categories; those who snatch bribes, those who hand out favors, and those who are excluded from favors and forced to pay bribes [12]. Corruption relates to Wasta [13, 14] because Wasta is a main and explicit breach of trust in business, employment, and civil services [12]. Besides, corruption is linked to Wasta because Wasta carries gift-giving and reciprocity favors. Hence, researchers should understand corruption in the context of social networks, kinship relationships, and other social ties [13, 14]. Researchers have linked corruption to favoritism because the favored person would think again about the reciprocity of favors through gift-giving or any other forms of favors [15].

2.2 Favoritism

Favoritism is favoring family members, friends, acquaintances, religious, geographic, and ethnic groups on other people who are more qualified and competent than the favored ones for personal gain [16]. Because of favoritism, people support their family members and relatives by giving them jobs based on their relationship rather than their qualifications [17]. Favoritism is an ordinary behavior in many organizations and business settings [18]. Favoritism is widespread all over the world within many organizations [15]. For example, favoritism is practiced in hospitals which is evident in appointing hospital managers in public hospitals [19].

The causes for favoritism include uncertainty avoidance and care for the closet, dearest, and nearest ones such as children, friends, or close relatives [15]. Several Researchers have added many other reasons for favoritism. These reasons include; having the same or similar beliefs, behavior, attitudes, physical appearance, social identity, ideology (political, religious, or organizational) play an essential role in favoritism [20–22]. Besides, an unhealthy political environment, social and economic structure bring about favoritism and help its development in society [23]. However, the focus of this study is on the socio-cultural structure which originated in the Arab world on tribal and kinship relations. Therefore, nepotic behavior is encouraged by an individual's norms and merits that require them to fulfill responsibilities towards their family [23].

Researchers have linked favoritism to employee intention to quit, organizational commitment, management practices in the human resource department, and job satisfaction [24]. Several researchers have even claimed that favoritism in some countries such as Russia jeopardizes the country's economic and social development [15]. In addition, favoritism is considered a form of corruption [25, 43].

2.3 Wasta

Wasta is a social network and interpersonal connections rooted in a family, tribe, and extended to acquaintances, friends, and kinship relationships [1, 4, 6, 9, 25, 26]. All Wasta definitions have agreed on one thing; family is the social unit that Wasta is built upon [27]. Families are the center and the backbone of the society in the Arab communities [28]. However, there is a belief that Wasta has a religious base. Mistakenly, Islam is thought to be the spiritual base for Wasta in the Arab World [9]. Therefore, Rice [27] concludes that Wasta relates to the concept of Shura (i.e., Consultation). Wasta developed along three major axes; tribal/ethnic solidarity, religious sectarianism, and ideological affiliation [26].

Regardless of religious affiliation, the Arab World is a relation-oriented society that focuses mainly on the creation and reinforcement of relationships within the business rather than on directly closing a deal [29]. The concept of Wasta in the MENA is associated with social connections, and it influences decision-making [4]. National culture dimensions such as collectivism influence Wasta [30]. Dunning and Kim [31] conclude that collectivism and power distance relate to Wasta. For example, power distance (i.e., unequal distribution of power) in Arab culture encourages the use of Wasta as a means of getting access to high-level individuals in society [9]. Wasta also associates with the harmony which is valued in the Kuwaiti collectivistic cultures; individuals are more

likely to take part in behaviors that secure harmony and abstain from practices that jeopardize harmony [32]. Hutchings and Weir [9], believe that uncertainty avoidance might play a critical role in making decisions to deal with family members, friends, strictly known individuals, or strangers [9]. The influence of national culture on Wasta is witnessed by Yahchouchi [33] who claimed that Lebanese national culture encourages relations-oriented leadership in business rather than promoting task-oriented leadership.

Wasta is practiced in Kuwait because it carries the feeling of fulfillment, gratification, pride, and prestige, which makes those who practice Wasta feel happy [5, 34]. Hedonism theory (Ethical Hedonism/Normative Hedonism) developed by Bentham [35] explains those feelings and the absence of pain when using Wasta. The theory postulates that people should pursue happiness and avoid pain or unhappiness. Hence, many people in Kuwait practice Wasta to pursue their happiness. The feeling of joy and pleasure created by Wasta is shared by those who ask for Wasta and get their job done. Wasta is a form of social capital [36] that allows people to exercise their social power [9] of networking to overcome access to businesses [37].

Wasta's purpose has changed over time from an intermediary (i.e., assisting the resolution of intergroup conflict) to intercessory (i.e., helping unqualified people to make money, or get employment, promotion, etc.). Intercessory Wasta has opened the doors for wrongfulness and corruption (e.g., gift-giving, kickbacks, and favors) [4, 38]. Wasta allows people to use their connections for personal interests [32]. Wasta carries gift-giving, exchange of favors, and the expectation of future mutuality [9]. Wasta is favoritism [13, 14] because it is a leading and explicit breach of trust in civil services, business, and employment [12]. In Kuwait, people who do not have Wasta connections available for them from their family, tribe, or friends are forced to look for someone who can help them get a job or acquire necessary services for kickbacks.

Wasta is also linked to corruption because it leads to bribery through gift-giving and other illegal actions. Hence, in this study, the authors argue that Wasta in its three different forms (Mojamala, Somah, and Hamola) relates to corruption because of favoritism.

2.4 Mojamala and Favoritism

Mojamala is the feeling of loyalty and emotional understanding of the other party [5]. Mojamala is considered as the emotional component of Wasta, meaning that one party shows the other party his or her level of cultural understanding by not upsetting them due to the deep feeling of loyalty whether in business, banqueting, or social encounters. In the Arab culture, because of the norms and values created by Mojamala, it is not possible to start a meeting or any significant business interaction without tea or coffee rituals [39]. Business people in the Arab world prefer to frequently interact with their counterparts and openly talk about business deals which allows them to reduce uncertainty and business risks. Mojamala is one way that the Arabs show their willingness to be accommodating for harmony and avoid confrontations that might arise in business negotiations [40]. During the tea/coffee rituals, all guests have to drink tea or coffee because they understand the feelings of the host created by Mojamala. The guests know that their refusal to do so will upset the host and offend the Arab values and customs. Accordingly, Mojamala creates face-saving in Arab societies. Face-saving is not only critical for the family, extended family members, but also the extended networks [41].

In Arab societies, people perceive Mojamala as a social force that keeps the relationship between two parties through a person's generosity, willingness to provide help, and making other people feel happy about the person who offers Mojamala by facesaving. Meaning that people do not want to upset other people regardless of the cost of favoring [5] because people would consider the contact person's feelings not to be hurt before they make an important decision. In Kuwait, Mojamala is linked to favoritism [5] because business relationships in Arab societies are built on interpersonal interactions and significant emotional feelings [42]. The emotional feelings of Mojamala are the reason why people favor someone to save face. According to Akbari, M., Bahrami-Rad, and Kimbrough [43], favoritism leads to corruption. Many researchers concluded that favoritism is corruption [44]. Favoritism causes corruption because the favored person tries to indirectly bribe whoever favored him/her by giving gifts or returning favors such as jobs, promotion, or sealing a contract that would show their generosity and appreciation. Besides, favoritism facilitates corruption [15] because the favored person would think again about the reciprocity of favors through gift-giving.

In Kuwait, the business setting starts by wining and dining by the host who generously offers free food, drink, and gifts. A business leader who negotiates first and masters social relations and emotional understanding of the host that takes place before a business meeting would be favored to get the best deal [5]. Therefore, Mojamala instigates favoritism [25]. Hence, the authors argue that Mojamala initiates favoritism. Following the above discussion, the authors posit hypothesis 1 (H1):

H1: The high levels of Mojamala caused by cultural and emotional factors instigate favoritism.

2.5 Hamola and Favoritism

Hamola is defined as the level of human kindness, empathy (i.e., the ability to understand and share the feelings of another), and favoritism an individual has with another person through owing a favor to someone or being owed favors to a family member, a tribesman, a friend, etc. In other words, Hamola is the degree of owing or being owed favors to someone else. Hamola is considered the conative element of Wasta [5]. It drives how a person acts on feelings and emotions. The empathy in Hamola represents the ability of a person to comprehend and share the feelings of the other person honestly. The sense of owing or being owed by someone is the key for individuals to think about returning favors and free themselves from being owed.

When people return favors, they seek relief from any obligations to other family members or in-groups. It is also believed that people practice Hamola because it creates value, reduces uncertainty, and helps them to get positive outcomes in business interactions [11]. These positive business outcomes can be achieved through Hamola because Hamola carries the value of interacting and leads to reciprocity among individuals [39]. Reciprocity among individuals implies exchanging favors and giftgiving [39] which is deemed to be corruption. Hamola is associated with gift-giving, dining and wining, and providing mutual support for those to whom the Wasta person owes a favor [44]. Kuwaiti a family plays the leading force in society, and it is the ground for job security and promotion [27]. Arab collectivistic societies show solid and long-term commitment to their

family members and extender relationships. The force created by family obligations to support each other and secure jobs drive people to favor their family members [45]. Favoring a relative regarding hiring or giving a business deal in Kuwait is perceived among people as fulfilling an obligation of Hamola [46]. Therefore, Hamola favoritism.

Mutual reciprocity is a key for the commitment and social networks which dare directly related to business relationships expansion [47]. Reciprocation is a strong behavioral influence that refers to repaying what another person has offered before [48].

In Kuwait, Hamola leads business managers to give special treatment to family members or in-groups regarding employment or business deals. That special treatment is considered by managers a way of fulfilling an obligation created by Hamola. The act of special treatment by managers to family members or in-groups is usually perceived as favoritism or nepotism in the western culture [46]. Favor-ing a relative in business settings is favoritism [49]. In return, Hamola makes the favored person return the favor or gift the person who favored him or her. As such, Hamola causes favoritism [25].

In Kuwaiti societies, business activities spin around interpersonal connections and social networks embedded in kinship ties and family connections that impose verbal obligations of agreed contracts [50]. In Kuwait, business relationship expansion is linked to mutual reciprocity through the obligation of owing or being owed [46]. In business, Hamola reciprocity is returning favors by the beneficiary or someone on their behalf [39] Returning favors could be gift-giving, wining and dining, and providing needed help when the time comes [47]. In business settings gift giving and any favors is a bribe [51]. Hence, the authors argue that Hamola brings about favoritism. Following the above line of discussion, the authors posit hypothesis 3 (H3):

H2: The high levels of Hamola caused by cultural and emotional factors instigate favoritism.

2.6   Somah and Favoritism

Somah is the cognitive element of Wasta. It is defined as a person's reputation and willingness to look good in society and how respected a person is. Somah reflects the level of credibility of a person and business relationships. Businesses and individuals usually assess Somah by the extent to which the other party keeps its verbal and written agreements [52]. In Arab societies, Somah is built on the tribe's reputation, individuals' actions, and mutual history [5]. In business, Somah is settled around the duration of the reciprocal relationships, how business was managed, and how disagreements between the two parties were solved in the past [52]. As such, Somah involves reciprocity among individuals and businesses who endeavor to keep their reputation at a high level. Hence, Somah relates to gift-giving or favoring through relationships. Business reciprocal relationship implies exchanging favors or gifts which is considered bribery [51].

In addition, in Kuwait society, people usually define self with other family members [52] and, therefore, the interest of the family comes first. The willingness of family members to look kind, helpful, and have good Somah (i.e., reputation) for themselves

and their extended families makes them offer favors to in-groups, friends, and tribe members. For example, values and traditions in Saudi Arabia mandate support and mutual solidarity among nuclear and extended family members [53]. These values and norms promote favoring extended family members in society and organizations since mandated individuals fulfill tribal and family responsibilities dictated by societal values and traditions [17].

According to the social identity theory [54], individuals endeavor to achieve or keep a positive social identity (i.e., the best reputation). Every individual strives to have a good face and a better reputation. The theory confirms that group memberships create an in-group and they are more likely to show favoritism at the expense of the outgroup. A person has to favor their in-group or face the consequences [7]. For example, Jordanian public employees practice favoring to avoid social isolation and lousy reputation [55]. Therefore, Somah creates favoritism [25]. Hence, the authors argue that Somah causes favoritism in business settings.

H3: The high levels of Somah caused by cultural and emotional factors instigate favoritism.

3   Methods

3.1   The Sampling Population and Data Collection

The survey sampling population is managers and employees (140 males and 85 females) from all management levels in the private sector in Kuwait. The sampling design employed is probability random sampling to give respondents who are 25 years old and above an equal chance to be selected. The authors used the survey monkey link and the response rate was 86%. Non-response bias was addressed by increasing the response rate. To achieve that, the authors took several steps. First, the authors called prospective respondents on their phones or via skype before emailing the survey questionnaires and the cover letter. Second, the authors followed up on nonrespondents twice. Third, the authors offered the survey in Arabic and English. Fourth, the authors put an announcement on social media before sending the questionnaire. Fifth, the authors suggested respondents blended mode survey options. For example, respondents have the opportunity of responding either via email or s What's up.

The authors chose Kuwait to represent the Arab countries in Kuwait because research suggests that the majority of Arab managers share a lot of fundamental values that mirror tribal traditions and Islamic values [56]. The Arab people in Kuwait are culturally and racially homogeneous despite the differences and dissimilarities in political, social, economic, and administrative systems [9]. The Arabs also share commonalities regarding business practices and social norms [57, 58]. Also, Wasta principally stems from the Arab collective and tribal social system [4, 6].

3.2   The Dependent Variable

Favoritism is the study dependent variable measured at the individual level by seven items borrowed from favoritism, nepotism, and cronyism scale developed by Aydogan

[22]. The measurement is a 5-point-Likert scale that ranges from 1 (strongly agree) to 5 (strongly disagree). For this study, the authors chose only items that measure favoritism. The scale convergent validity is supported by the inter-item correlations (≥ 0.36) while the scale reliability (Cronbach's alpha) is 0.84.

3.3 The Independent Variable

Wasta is a social network built on interpersonal connections caused by Mojamala, Hamola, and Somah to help or favor family members, extended family, tribe members, friends, etc. Wasta is the independent variable measured at the individual level by three dimensions; Mojamala (i.e., the feeling of loyalty and emotional understanding), Hamola (i.e., the level of owing or being owed favors), and Somah (i.e., a person's reputation and credibility). Wasta's survey for measuring the three dimensions is a seven-point-Likert scale that ranges from1 (strongly agree) to 7 (strongly disagree). Mojamala is measured by seven items. Hamola is measured by six items. Somah is measured by seven items.

Wasta scale was developed by Berger et al. [5] with Cronbach's alpha > 0.79. To enhance the scale reliability, the authors avoided biased terms or wording by backtranslation from Arabic to English (i.e., make sure terminologies, words, or items translated into Arabic have the same meaning). The authors also pre-tested the survey translated questions to check if they have any problems with translated questions. Besides, the authors ask pre-tested people for feedback to see if they consistently answer the questions. Furthermore, to get honest answers, the authors explained to respondents why they need their answers for asking some personal questions and tell them about the information confidentiality. Finally, item reduction was based on Cronbach's Alpha (α > 0.70) using the Confirmatory Factor Analysis technique in data analysis.

3.4 Data Analysis and Test Results

Before testing the study's three hypotheses, the authors checked for the model fit in AMOS analysis (see Table 1). The model fit indices show that the model is fit (Table 1 shows the details).

Table 1. The model fit indices

Index	Index value	Acceptable/Not acceptable
GFI	$0.923 \geq 0.90$	Acceptable
CFI	$0.983 \geq 0.90$	Acceptable
NFI	$0.900 \geq 0.90$	Acceptable
RMSEA	$0.035 \geq 0.90$	Acceptable
Chi-Square	50.235	Acceptable

In addition, the authors used the Structural Equation Modeling (SEM) technique to test the three hypotheses. The findings show that Mojamal is significantly and positively

related to favoritism (b = 0.470, p-value = 0.041, less than 0.05, significant). However, Hamola (b = −0.108, p-value = 0.652, greater than 0.05, not significant) and Somah (b = −0.354, p-value = 0.204, greater than 0.05, not significant)are not significantly related to favoritism (Table 2).

Table 2. Hypotheses test results using SEM

Relationship	β-value	p-value	Significance
Mojamal → → Favoritism	0.470	0.041	Significant
Hamola → → Favoritism	−0.108	0.652	Not Significant
Somah → → Favoritism	−0.354	0.204	Not Significant

4 Conclusions

Out of the three Wasta factors, Mojamala seems to be the most factor that instigates favoritism in Kuwaiti society because the feeling of loyalty and emotional understanding of the other business party seems to be critical in not upsetting the other party and showing the other party the deep feeling of loyalty and trust. Perhaps the relationship between Hamola and favoritism and Somah is not significant because Kuwaitis perceive face-saving and loyalty as more important than their reputation or owing something to someone else when they practice Wasta.

This study makes a significant contribution by empirically examining the link between Wasta and favoritism. Incorporating favoritism dimensions in the existing Arab Business Model might provide a better Wasta model that would help practitioners to understand the bright and the dark sides of Wasta.

Western and international firms must understand how interpersonal connections and social networks are created and how they are linked to business settings. Cultural differences could impact the performance of international firms in many aspects ranging from establishing relationships to legal contracts [57, 58].

Understanding the concept of Wasta could benefit foreign investors to cope, succeed, and flourish without violating their codes of ethics and business laws in Western countries. A good understanding of Wasta also helps foreign firms doing business in Kuwait be aware of the unseen hand of Wasta, take proactive steps, and avoid bribery risks. Understanding Wasta would encourage multinational companies to prioritize designing training programs that educate international assignees on the importance of cultural values and norms and how they relate to business in the MENA. This study has some limitations and shortcomings. The survey covered only respondents from one country in the MENA. Future research should explore more countries in the MENA to understand whether or not cultural variations and political systems impact the Wasta phenomenon and corruption. Besides, education seems to have an impact on Wasta since those who are highly educated tend to be more Wasta resistant than less educated people. Hence, future research should control for some individual factors such as age and education.

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Factors Affecting Audit Quality in Palestinian Audit Firms in the Gaza Strip During COVID-19 Pandemic

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Abstract. This paper examines factors affecting audit quality in Palestinian audit firms in the Gaza Strip during COVID-19 pandemic. Using the descriptive-analytical technique, a questionnaire was designed to collect data from all Palestinian audit firms in the Gaza Strip. Multiple regression analysis was used to evaluate the data collected from 117 respondents. The findings revealed that the independent variables (i.e. auditor experience, objectivity and independence of the auditor, and the auditor's awareness of the importance of audit quality) had an impact on audit quality. While this study expands on previous research, it also yields that data might benefit academics and practitioners in their efforts to improve audit quality.

Keywords: Auditor experience · Objectivity and independence of the auditor · Auditor's awareness · Audit quality · Palestine

1   Introduction

The fast spread of the COVID-19 pandemic of 2019 has triggered a global health, economic, and social crisis. Worldwide, the pandemic has already had substantial economic and financial implications [1, 2]. Importantly, when paired with market uncertainty, these economic turbulences can erode investors' confidence in companies' financial performance, potentially leading to plenty of financial problems [3]. The quality of the audit process has a significant impact on auditors' ability to detect material misstatements [4], and if a company does not ensure that the audit procedure is of the highest quality, shareholders' confidence in reported earnings figures is expected to decline, increasing investment risk and the cost of equity capital [5].

The audit is a procedure for reducing misalignment of information between shareholders and firm executives [6, 7]. Clients must exercise caution when selecting a Public Accounting Firm (KAP) and when having financial statements audited by KAP [8, 9]. Of course, they must adhere to applicable legislation and have values and ethics. According to the Public Accountant Professional Standards (SPAP), an audit can be considered good if it fulfills the appropriate auditing criteria or standards [10].

Audit quality is one of the most important topics in the auditing profession. If the auditor is able to detect and report on existing significant misstatements, the audit process

is considered to be of better quality [11]. The auditor's capacity to function at a high level of conduct in order to achieve high quality may be hampered by the auditor's long client relationship [12]. Audit quality measures the auditor's ability to find deliberate or inadvertent faults in the company's financial statements presented and included in the audit opinion [13]. Accountants' judgments are unquestionably backed by thorough, competent audit evidence, thus accountants must have the appropriate audit knowledge and quality control when offering opinions [14]. Accounting companies must think about putting a greater emphasis on enhancing audit quality. The auditors' mental attitude and technical abilities, which are embodied in the auditors' professional education or experience, determine the audit quality [15].

The independent variables: professional experience, Objectivity and independence, the auditor's awareness, are considered the most important variables that affect the dependent variable audit quality, for several reasons:

- The dependent variable's state is controlled by the independent variables. As a result, the entire content of the dependent variable changes in response to the change in the independent variables.
- Independent variables are a unified entity in itself that enters and interacts with the dependent variable and causes a change in its nature. Thus, hypotheses can be accurately understood and studied through independent variables.

The importance of this study stems from the scarcity of empirical research on the economic and social effect of COVID-19, and even less empirical studies show the factors affecting audit quality in audit firms during the COVID-19 pandemic [16]. The global pandemic had a major and severe impact on customers and the financial reporting process, affecting employees, the financial system, mobility, and the economy as a whole [17]. As a result, auditors may face scope of limitation or sophisticated auditing challenges as a result of these circumstances [18]. Palestine, in particular, suffers from a lack of research due to the country's underdeveloped infrastructure. This research adds to the existing literature by conceptualizing the link between the independent variables (i.e. auditor experience, objectivity and independence of the auditor, and the auditor's awareness of the importance of audit quality) and audit quality during COVID 19 pandemic. Our independent variables were chosen based on literature [19–21] since they are thought to be one of the most important factors that affect audit quality.

The remainder of the paper is organized as follows. In Sect. 2, the research model and research hypotheses are established by combining prior audit quality research. The methodology is introduced in Sect. 3. Then Sect. 4 presents the findings of the study, and Sect. 5 concludes a discussion of the findings, limitations, and further researches.

2 Theoretical Background

2.1 Audit Quality

Several studies [18, 22, 23] conducted to explore the impact of COVID 19 pandemic on audit quality. This study examines factors affecting audit quality during COVID 19

pandemic. In order to understand audit quality, it is important to start with the definitions of audit quality. DeAngelo [24] gives a theoretical concept that has served as the foundation for many audit quality research. She defined audit quality as the possibility that the financial statements would contain major mistakes and that the auditor will both detect and disclose the problems, as determined by the market. The auditor's competency determines whether or not a mistake is discovered, whereas the auditor's independence from the audit client determines whether or not the error is reported [25]. Loss of independence, according to DeAngelo [24], happens when an auditor is afraid of losing his job and hence agrees to plainly incorrect accounting standards, resulting in an audit failure. The auditor will lose future economic revenue from the same client's recurring business if a customer is lost.

Audit quality, on the other hand, is frequently defined in practitioner literature as the extent to which an audit adheres to applicable criteria [26]. Audit quality is defined by conformity to Generally Accepted Auditing Standards (GAAS) [27]. Accounting academics, on the other hand, identify a variety of characteristics of audit quality, resulting in a variety of definitions. Some of the more common definitions, according to Watkins et al. [26], are: the likelihood that an auditor will not issue an unqualified report for statements containing material errors; the accuracy of the information reported on by auditors; and a measure of audit's ability to reduce noise and bias while improving fineness in accounting data. Users of financial statements, according to Epstein & Geiger [28], believe audit reports give 100% confidence that financial statements are free of substantial misstatements and do not perpetuate fraud. The audit quality measures that are employed appear to be influenced by the viewpoint from which audit quality is analyzed. Given that the majority of consumers of audited financial statements do not have access to audit firm files, it is critical to design audit quality standards that are applicable to them.

2.2 Auditor Experience

It was shown that an audit firm's brand name (high reputation) is insufficient to improve audit quality; nonetheless, industry expertise and specialty are a vital aspect of the auditor's experience [10]. As an auditor's expertise and experience with a client's business grows, he or she becomes better equipped to spot probable significant misstatements and develop hypotheses about industry-specific routine mistakes [29]. Furthermore, as an auditor's tenure with a client increases, their experience in detecting material misstatements decreases, and they rely on their previous experience with the client rather than exerting more effort [30], an issue that would suggest mandatory rotation as a solution to overcome auditor staleness. Because auditor experience is an indicator of high quality as it rises, the question in this article is whether a client business will switch to a more experienced auditor to improve audit quality. We suggest the following hypothesis based on the foregoing:

H1: Audit quality is positively influenced by auditor experience.

2.3   Objectivity and Independence of the Auditor

The term "internal auditing" has become commonly accepted [31]. Internal auditing is a value-adding, independent assurance and consulting activity that enhances a company's operations. It helps a firm achieve its objectives by reviewing and enhancing the effectiveness of risk management, control, and governance systems in a methodical, disciplined manner. This concept emphasizes internal auditing's independence and objectivity in both assurance and consulting services. The concepts of independence and objectivity are intertwined [32]. The Institute of Internal Auditors "IIA" Standards Glossary, on the other hand, distinguishes between the two notions as follows: Independence is the absence of circumstances that jeopardize objectivity or the impression of objectivity. Obstacles to objectivity must be addressed at the individual auditor, engagement, functional, and organizational levels. Internal auditors should have an objective mental attitude that allows them to conduct engagements in such a way that they are confident in their work output and no significant quality compromises are made. Internal auditors must preserve neutrality by not relying on the opinions of others when conducting audits. As a result, it appears that the IIA's distinction between the two ideas is that objectivity is a state of mind, whereas independence is the set of circumstances that enable an internal auditor to operate objectively. While the IIA standards [33] stress organizational independence, the definition suggests that individual, engagement, and functional independence are equally significant. We expect the following hypothesis based on the above:

H2: Audit quality is positively influenced by objectivity and independence of the auditor.

2.4   The Auditor's Awareness of the Importance of Audit Quality

The concept of awareness has been widely applied in a variety of domains, and its application appears to be founded on the adage that "consciousness precedes action". As a result, it is thought that awareness has a substantial impact on how people respond in specific situations and guides people's attention when they are observing and encoding information [34]. In this way, awareness of particular concerns will lead these individuals, prompting them to pay closer attention to certain components of incoming information connected to specific difficulties; as a consequence, they will include this into their decision-making process when deciding what actions to take [35]. Some research also connects the idea of awareness to that of accessibility [36], which is the ease with which a thought or topic comes to mind. Individuals will immediately recognize the notion or issue because it is already at the forefront and will consider it into their decision-making. When faced with challenges that potentially jeopardize the auditing profession's independence, auditors will take the appropriate safeguards to uphold the ethical principle of independence in each audit assignment [37].

This idea of awareness has been used to several research in accounting and auditing, and its influence on person or auditor judgments has been investigated. Butterfield et al. [38], for example, emphasized the importance of moral awareness, regarding it

as a crucial stage in identifying what behaviors are necessary. Tan [39] investigated the influence of awareness on the audit process and auditor performance in terms of reflection. He discovered that when auditors are aware of the situation, they are more careful while conducting reviews and audits. Fay et al. [40] looked into the effects of auditors' awareness of prior-year testing strategies on auditors' judgments, and found that auditors. Such awareness would be based on previous year's tactics, allowing them to identify risk factors in certain sections of their customers' accounts and design audit processes appropriately. We formulate the following hypothesis based on the above:

H3: Audit quality is positively influenced by the auditor's awareness of the importance of audit quality.

Figure 1 depicts the research's conceptual framework. The independent variables in this model (i.e. auditor experience, objectivity and independence of the auditor, and the auditor's awareness of the importance of audit quality) are related to the dependent variable (i.e. audit quality).
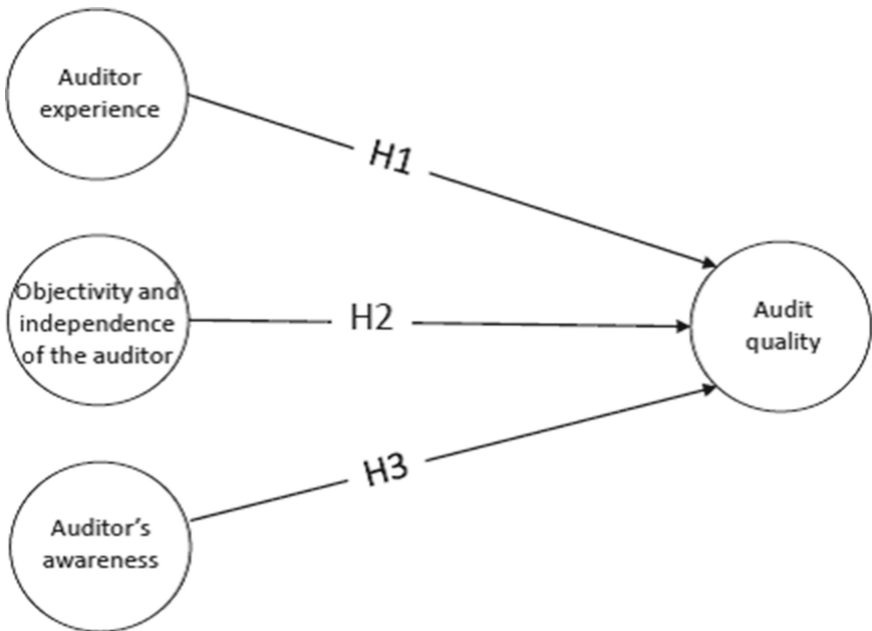
Fig. 1. The research framework

3 Methodology

3.1 Participants

As stated in Table 1, a total of 117 respondents completed and returned the questionnaire. The table summarized the results of the demographic variables.

Table 1. Profile of respondents ($n = 117$)

Variables	Groupings	No. of respondents	%
Age	25 years or less	21	17.9
	26–35 years	45	38.5
	36–45 years	31	26.5
	46–55 years	11	9.4
	56 years and above	9	7.7
Gender	Male	86	73.5
	Female	31	26.5
Education level	Bachelor	56	47.9
	Master	50	42.7
	Ph.D	11	9.4
Experience	5 years or less	36	30.8
	6–10 years	45	38.5
	11 years and above	36	30.8
Marital status	Single	41	35.0
	Married	69	59.0
	Widowed	5	4.3
	Divorced	2	1.7
Monthly income	$500 or less	36	30.8
	$501–$1000	48	41.0
	$1001 and above	33	28.2

3.2 Procedures

The descriptive technique was used to explain the existing situation and answer essential questions about factors affecting audit quality in Palestinian audit firms in the Gaza Strip during COVID-19 pandemic. As a result, the primary methodology of this study was survey research, with data collected through field visits to ensure a high response rate using a questionnaire. The original questionnaire was professionally translated into Arabic in order to conform to the local language, and it was then evaluated by two native Arabic speakers and pilot tested for correctness in translation. The questionnaire was distributed to all Palestinian audit firms in the Gaza Strip. IBM SPSS software version 21 was used for all statistical analyses.

3.3 Measures

The survey used a 5-point Likert scale questionnaire (1 = strongly disagree, 2 = disagree, 3 = no opinion/neutral, 4 = agree, and 5 = strongly agree). The questionnaire divided

into four parts. The first part, based on Chen et al. [19], Mohamed and Habib [11], Kaplan, et al. [41], assesses auditor experience with six questions. Objectivity and independence of the auditor was explored in the second part, and seven items were developed in accordance with Zahmatkesh and Rezazadeh [20], Stewart and Subramaniam [32], and Goodwi and Yeo [42]. Five items were included in the third part to look at the auditor's awareness of the importance of audit quality [21, 43]. The fourth part included seven questions from Guliyev et al. [44], Beattie et al. [45], to assess audit quality.

4 Results

4.1 Factor Analysis

To find out if the factor analysis was applicable for the investigation, the KMO and Bartlett's tests were utilized. The reliability test results should be more than 0.7 and the results of the Bartlett's Sphericity test should also be less than 0.05. The KMO value is 0.718, which is higher than the acceptable threshold of 0.000, indicating that this analysis is adequate for the study.

One principle factor is rotated using the varimax normalization to create the factor score coefficient matrix created by principal components analysis [46–48], as illustrated in Table 2. The factor has 25 variables. According to the research, the lowest loading threshold for factor loadings on various scales is 0.30 [49–53]. Table 2 shows that all of the loadings are more than 0.30, indicating that the construct validity of the scales is intact.

Table 2. Reliability and factor loading of the constructs.

Construct	Item	MV	SD	FL	Cronbach's α
Auditor experience	1	4.50	.625	.802	.785
	2	4.48	.690	.796	
	3	4.60	.644	.785	
	4	4.26	.687	.656	
	5	4.50	.596	.698	
	6	4.29	.683	.645	
Objectivity and independence of the auditor	1	4.40	.631	.739	.769
	2	4.33	.643	.695	
	3	4.32	.727	.762	
	4	4.40	.683	.639	
	5	4.48	.624	.795	

(*continued*)

Table 2. (*continued*)

Construct	Item	MV	SD	FL	Cronbach's α
	6	4.55	.623	.753	
	7	4.45	.651	.689	
The auditor's aware-ness of the importance of audit quality	1	4.37	.651	.701	.773
	2	4.46	.664	.675	
	3	4.47	.638	.761	
	4	4.49	.535	.634	
	5	4.33	.754	.529	
Audit quality	1	4.32	.775	.822	.847
	2	4.46	.623	.686	
	3	4.25	.642	.670	
	4	4.51	.582	.691	
	5	4.44	.700	.739	
	6	4.50	.625	.802	
	7	4.48	.690	.796	

4.2 Hypotheses Testing

Multiple regression analysis was used to assess the association between the independent variables (i.e. auditor experience, objectivity and independence of the auditor, and the auditor's awareness of the importance of audit quality) and the dependent variable (i.e. audit quality). The goal of the multiple regression analysis was to figure out how the independent variables affects audit quality.

According to Table 3, the independent variables account for 47.2% of the overall variation in audit quality (adjusted R2 = 0.472). Because the F value was substantial at 0.000, the model's quality was validated. As shown in Table 3, auditor experience (t = 2.214, p 0.000), objectivity and independence of the auditor (t = 3.522, p 0.000), and the auditor's awareness of the importance of audit quality (t = 4.146, p 0.000) were all favorably related to audit quality. As a result, the data found H1, H2, and H3 to be appropriately supported by the data.

Table 3. Results of multiple regression analysis.

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	1.417	.545		2.601	.011
Auditor experience	.315	.089	.278	2.214	.000
Objectivity and independence of the auditor	.305	.087	.298	3.522	.001
The auditor's awareness of the importance of audit quality	.355	.086	.350	4.146	.000

Notes: Dependent variable: audit quality; adjusted R2 = .472, F = 10.792, and sig. = 0.000

5   Discussion

5.1   Discussion of Findings

This paper examines the association between (auditor experience, objectivity and independence of the auditor, and the auditor's awareness of the importance of audit quality) and the dependent variable (i.e. audit quality). According to the findings, auditor experience has a favorable and direct impact on audit quality. Previous studies proved that a client business will shift to a more experienced auditor in order to increase audit quality because the auditor's experience is an indication of high quality as it rises.

Furthermore, the data revealed a link between objectivity and independence of the auditor, and audit quality. Internal auditors must preserve objectivity by not relying on the opinions of others when conducting audits. As a result, it appears that the IIA's distinction between the two terms is that objectivity is a state of mind, whereas independence is the set of circumstances that enable an internal auditor to operate objectively. While organizational independence is emphasized in the IIA standards [33], the definition emphasizes that individual, engagement, and functional independence are all equally important.

The results also show that the auditor's awareness of the importance of audit quality have a beneficial relationship to audit quality. The concept of awareness has been examined in various accounting and auditing studies, as well as its impact on individual or auditor judgements. For example, Butterfield et al. [38] stressed the relevance of moral awareness, describing it as a critical stage in determining what behaviors are required. In terms of reflection, Tan [39] looked at the impact of awareness on the audit process and auditor performance. While auditors are aware of the issue, they are more cautious when performing reviews and audits, he discovered. Fay et al. [40] investigated the impact of auditors' knowledge of prior-year testing strategies on their judgments, finding that auditors. Such awareness would be based on the previous year's initiatives, allowing them to identify risk concerns in certain sections of their customers' accounts and adapt audit processes appropriately.

5.2 Limitations and Further Research

The study's empirical findings included contextual and applicability limitations. Our conclusions are based on Palestinian audit firms in the Gaza Strip which may limit the generalizations of results to the other parts of the country's audit firms. Even though the findings apply to emerging economies with similar cultural backgrounds, such as Palestine, they may not be appropriate for regions with diverse cultural circumstances. Second, the research was conducted in the Palestinian audit firms in the Gaza Strip, which limits the applicability of the findings to other firms in the West Bank.

The researchers suggest that the model could be re-examined in other situations or cultures as part of future study. Additionally, moderating factors may be included to the model to help understanding of the relationships and mechanisms underlying the problem at hand. In addition, future study should include users of audit firms' services in the sample.

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Social Characteristics and Its Relationship with Intent to Stay-with Reference to Financial Sectors

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Abstract. One of the challenging tasks of the HR management of the organization is to design the job in such a way that facilitates a good work culture/atmosphere for the employees to ensure their stay in the organization. The present study analyzed the role of social characteristics of the job with their intention to leave among the employees working in the finance sector. Primary data were collected from 250 employees working at all levels of management in the finance and banking sector in India's southwest region through the Convenience sampling method. Morgeson and Humphrey (2006) developed the work design questionnaire which was adopted and used for data collection. Hierarchical multiple regression used for applied for data analysis. The results show that social characteristics cannot predict intent to stay. Also, age and gender do not have a significant role as mediating factors to social characteristics and intent to stay.

Keywords: Social characteristics · Intent to stay · Finance and banking sectors · India

1 Introduction

Employees are considered an essential resource of the organization, and many factors determine the attitude of the employees towards the work while contributing to the organization. Few among them are the type and nature of the job they are performing, pace in work, getting enough time for rest and recuperation, and interpersonal and social interaction. The success of every organization depends upon the achievement of the organizational goals through the service of experienced, talented, and skilled employees working in the organization. The employees' decision to continue with the organization depends on the organization's success.

2 Review of Literature

2.1 Social Characteristics

Every job performed in an organization comprises different elements such as work characteristics, task characteristics, knowledge characteristics, and social characteristics. Morgeson and Humphrey (2006) developed a work design model. Each of these characteristics has its relevance in the job context. Both organizations and employees need a non-fortuitous (Derbali 2014) social connectedness among members of the organizations. Under the social structure, they look for defined roles and status, teams, social networks, social institutions, and organizations. These make employees content and satisfied; otherwise, they are dissatisfied. The second important aspect is that most employees' perceptions and attitudes are influenced by social cues (Salancik and Pfeffer 1978). Studies have shown a positive relationship between interpersonal relationships and job satisfaction, employee engagement, and employee productivity (Rožman et al. 2017). O'Reilly and Caldwell (1979) experimented to determine the impact of task design and information cues on job satisfaction and perception of task characteristics. The findings stated that there is a positive relationship. Further, results also indicated that most employees' attitudes are influenced by social information they access, and most workers tend to compare their job and work situation with others. Considering these critical findings, Morgeson and Humphrey (2006) developed social characteristics, the sub construct of Work Design. Social characteristics consist of four sub-dimensions; social support, interdependence, Interaction outside the organization, and feedback from others. Though many studies are conducted on social factors, most of the studies support the work design model Morgeson and Humphrey (2006), and the current study focused on the same objectives.

Social Support: Employees always look for a cordial relationship with their supervisors. Social support refers to how employees get guidance and direction from their supervisor and colleagues (Morgeson and Humphrey 2006). An organization with free flow of information between co-workers and their supervisors are more engaged, satisfied, productive, committed, and happier to spend longer tenure with the organization (Duan et al. 2019). They would also be willing to go the extra mile and help their fellow employees (Ginbreta and Desiana 2020).

Interdependence: Interdependence takes two forms in an organization; initiated means the workflows from one task to another. Received interdependence refers to how each job is affected by the work done by others (Borges-Andrade et al. 2019).

Interaction Outside the Organization: Employees working in finance and banking, marketing, sales, and production hold a job profile that requires continuous interaction with customers, clients, vendors, suppliers, or any other third-party vendor. Studies have shown that the performance of employees differs between younger and older employees for roles that need high Interaction outside the organization (Grandey 2000).

Feedback from Others: It refers to the level at which employees can get reviews and feedback about their performance from their peers, supervisors, and other related stakeholders (Morgeson and Humphrey 2006).

2.2 Intent to Stay

Job satisfaction is one of the determinants of employees' intention to stay in their organization, and workplace design has a positive influence on job satisfaction (Deepak and Prakash 2018). Employee turnover is a burning topic researched in depth by organizational psychologists, and many studies are conducted since 1900 (Cotton and Tuttler 1986). Research on employee turnover is being carried out mainly in the service sector, such as public service, health care, hospitality, and technology (Hatton et al. 2001). Lack of employee recognition, poor pay scales, unfulfilling jobs, poor career are few other reasons for employees leaving the organization.

2.3 Social Characteristics, Demographic Factors (Age and Gender), and Intent to Stay

Facilitating social Interaction for the employees is the primary requirement for the development of professionals (Hiltrop 1999). It is challenging to create a good interpersonal relationship between employees and employers if no good social relationship exists in the organization (Flint et al. 2013). Prospective employees are interested in applying for a job and working in an organization that better suits their social needs (Milkovich and Newman 2008). Employee demographic factors significantly influence their intention to stay in their organization. Employees aged 21–30 and divorced have lower intention to stay, while female employees and those with lower qualifications have higher intention to stay. Demographic factors influence employee turnover decisions (Emiroğlua et al. 2015). The age of the employees has highly influenced the turnover intention of the employees. In contrast, factors like employee's tenure, gender, and educational level have shown the most negligible influence on turnover intentions (Kamau et al. 2021). Employees' intention to leave their organization is significantly different among the employees with different age groups (Akova et al. 2015).

3 Research Gap

Not many studies have been conducted on employees' intent to stay about specific social characteristics of employees' jobs in the finance sector, which proliferates with innovative products and services by creating a more stressful work environment.

4 Hypotheses

Based on the reviews, the study formulated the following hypothesis;

H1a: There is a significant relationship between Social Characteristics and Intent to Stay
H1b: Age moderates the relationship between Social Characteristics and Intent to Stay
H1c: Gender moderates the relationship between Social Characteristics and Intent to Stay

5 Methodology

The study primarily focused on employees working in the finance and banking sectors and employees need to be given more focus as it can directly impact customer satisfaction and loyalty (Famiyeh et al. 2018). The study collected data from a sample of 250 working at all levels of management. The study adopted convenience sampling were the authors reached out to employees working in India's southwest region's financial or banking sector based on the reference. The work design questionnaire Morgeson and Humphrey (2006) adopted social characteristics from the work design questionnaire. The questionnaire consisted of 19 items, and each item was measured on a five-point Likert scale in which 1 stands for strongly disagree, and 5 stands for strongly agree. Descriptive statistics and hierarchical multiple regression were applied in order to measure the for-data analysis.

6 Results and Discussion

The current study had three hypotheses: one measuring the direct effect between the independent and dependent variable, and linear regression used to analyze the same. The other two were moderating hypotheses, where age and gender moderated social characteristics and intent to stay; moderated hierarchical regression was performed using Process macro 2.15 by Hayes (2013). The study collected data between age of 21 and above, also equal representation among gender was considered.

6.1 Hypothesis Testing

The direct relationship between social characteristics and intent to stay.

H1a: There is a significant relationship between Social Characteristics (SC) and Intent to Stay (IS) (Table 1).

Table 1. Direct effect between social characteristics and intent to stay

Direct effect	Unstandardized Estimates (B)	SE.	P	Standardized Estimated (β)
SC—--->IS	−0.077	.176	.660	−0.030

The study expected a positive relationship between social characteristics and intent to stay. A linear regression test was used to understand if the social characteristic is a predictor of intent to stay, and the results are shown in the table. It is inferred that the relationship between social characteristics and intent to stay is negative where B = −.077, β = −.030, and P = 0.660. Hence the relationship between social characteristics and intent to stay is negative and insignificant. Thus, social characteristics cannot be the predictor for intent to stay.

Moderating effect of age between Social Characteristics and Intent to Stay.

- H1b: Age moderates the relationship between Social Characteristics and Intent to Stay (Tables 2 and 3).

Table 2. Summary of the moderated regression analysis of age between social characteristics and intent to stay

Model	Coeff	SE.	T	P
Constant	3.7354	1.5708	2.3781	.0183
WD	−.1142	.4303	−.2654	.7909
Age	−.0988	.6509	.−1518	.8795
Int_1	.0185	.1769	.1064	.3671

Table 3. Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0000	.0109	1.00	222.00	.9168

The study assumed that age moderates the relationship between social characteristics and intent to stay (H1b). The study used a multiple Hierarchical regression model to measure the moderating relationship. The moderated regression results are shown in the table. The interaction term was not statistically significant for IS (B = 0.0185, SE = .1769, t = 0.1046, P = .9168), indicating that age was an insignificant moderating effect of social characteristics and intent to stay.

Moderating effect of age between Social Characteristics and Intent to Stay.

- H1c: Gender moderates the relationship between Social Characteristics and Intent to Stay (Tables 4 and 5).

Table 4. Summary of the moderated regression analysis of gender between social characteristics and intent to stay

Model	Coeff	SE	t	P
Constant	2.0003	1.9980	1.0011	.3179
WD	−.3473	.5454	.6368	.5249
Gender	1.0492	1.2922	.8119	.4177
Int_1	−.2925	.3551	−.8236	.4111

Table 5. Test(s) of highest order unconditional interaction(s)

	R2-chng	F	df1	df2	p
X*W	.00	.0109	1.00	220.00	.4111

The second demographic variable, gender, was also considered a moderating variable between social characteristics and intent to stay. Even in this hypothesis, the interaction term was not statistically significant ($B = -0.2925$, $SE = .3551$, $t = 0.8236$, $P = .4111$). From the table, it is inferred that gender was an insignificant moderator effect of social characteristics and intent to stay.

7 Limitation and Future Research

The study has acknowledged a few limitations while conducting the research. Since the study is based on quantitative data, there has been a time and sample size limitation. The study focused only on some parts of the countries, and thus findings cannot be generalized to entire working people in financial sectors. Furthermore, the study is restricted to one sector, but studying the role of social characteristics in other sectors such as hospitality, hospital, and other related services will also give a better understanding of the importance of this construct. Further research should extend on employees working in financial sectors located in other parts, which gives a more in-depth understanding of the role of social characteristics and their effect on intent to stay. In addition, the research can also consider other constructs of work design such as task characteristics, knowledge, and contextual.

8 Conclusion

Organizations are shifting from a rigid hierarchy to a flatter organization with minimal management involvement. Researchers have also started focusing on the role of social characteristics on various organization-related outcomes such as commitment, employee engagement, and intent to stay. Social related aspects cover autonomy, co-operation from fellow team members, ongoing and constructive feedback from the managers. Previous studies have shown that social characteristics strongly influence engagement and commitment levels. However, in the current study concerning intent to stay, the data showed an insignificant relationship with intent to stay. The primary reason for this insignificant relationship is that employees in financial sectors give more importance to tasks, autonomy, and knowledge because of the nature of work. Hence studies determining the relationship between these factors with intent to stay would provide better insight and help determine strategies to achieve employee retention.

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The Impact of IFRS 16 "Leases" on the Financial Performance on Jordanian Industrial Companies

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Abstract. The implementation of IFRS 16 will fundamentally change the accounting for lease contracts. This standard eliminates off-balance-sheet financing by capitalizing on operating leases. This paper explains the impact of IFRS 16 on financial performance. For this purpose, this paper is applied to industrial companies whose shares are publicly traded on the Amman Stock Exchange. The study's results indicate that the application of IFRS 16 does not have a statistically significant effect on the tested financial ratios (return on assets (ROA) and return on equity (ROE)) for the period 2015–2020.

Keywords: IFRS 16 · IAS 17 · Financial performance · Amman stock exchange

1   Introduction

Various sectors have witnessed rapid technological developments, which led to the emergence of high-value assets that are difficult for most companies to own. In line with these developments, companies had to find another financing method that helps to benefit from these assets without the need to purchase them. Therefore, most companies resort to leasing as it is associated with relatively low risk compared to other forms of financing [1].

Leasing has emerged as one of the most important and latest financing methods used by various companies. As leasing is an important source of financing, it should be a part of corporate financial decisions [2]. Leasing gives the lessee the right to use a specific asset for a certain period without resorting to its purchase in case of difficulty, in return for periodic payments for a certain period that are paid to the lessor [3]. So, leases specify who is to maintain the asset [4]. In some cases, leasing can also be considered the only way for the lessee to obtain the right to use a physical asset that is not available for purchase [5]. In general, leasing is an alternative mechanism to facilitate access to finance.

The International Accounting Standards Board (IASB) issued IFRS 16 "Leases" in January 2016 which is effective in January 2019, which eliminates the classification of leases into finance leases and operating leases, and instead operating leases are

capitalized as assets shown in the balance sheet. The new standard aims to ensure that lessees provide appropriate information in a manner that faithfully reflects lease transactions, to help users of financial statements evaluate the impact of leases on the financial performance of companies.

Consequently, there is one accounting model for leases for the lessee, which is the recognition of the leased asset as right-to-use, that results in an inflow of economic benefits for a lessee, and the recognition of the obligation resulting from this contract as part of the company's obligations in the balance sheet. As for the lessor, there has been no change in what was stated in IAS 17 (IASB, 2021).

Financial leasing is considered one of the tools used to develop the means of financing, and its usefulness in economic projects appears, so this topic has been recently regulated in the Arab environment. Financial leasing is the legal name, while lease-to-own contracts are named in Islamic law. Jordan is considered one of the countries that are interested in financial leasing. Jordan enacted the Financial Leasing Law No. 45 in (2008) as a legislative tool to regulate the financing of the use of assets without the need to purchase them.

This law defines the main features that must be available in a financial lease contract, which are represented by two conditions: First, that the lessor owns the leased property from the supplier intending to lease it under the lease contract. Second, the lessor is obligated to enable the lessee to benefit from the leased property in return for the leases fee, whether or not the contract includes the purchase option. The Jordanian legislator has held the lessee responsible for the safety of the leased asset and any risks it may face.

Accordingly, as companies resort to leasing over time, the question of how leasing affects financial performance has arisen. Leasing improves the financial performance of companies by influencing profitability, as profitability reflects the company's ability and efficiency to meet its obligations and optimally use its resources to generate profits [6]. profitability ratios indicate the company's efficiency in using its resources to reap profits and also indicate the success or failure of the company during a certain period [7]. Since the main goal of most profit-oriented companies is profitability, these companies increase their sales or reduce their costs to achieve the maximum return on profits. Profitability is measured through the various activities followed by the company or by analyzing the financial statements to reach profitability ratios, which are important financial analysis tools, because of their relative indicators that contribute to clearly reading the financial performance. In addition, most companies rely on profitability ratios to prepare future plans [7]. So, this study focused on basic profitability ratios, return on assets (ROA) and return on equity (ROE).

Therefore, this study sought to determine the extent of the Jordanian industrial companies' commitment to capitalizing operating leases and applying IFRS 16 that cancels the classification of lease contracts, thus assessing its impact on financial performance. Accordingly, the study problem can be summarized in the following questions:

- Question One: Do companies with leases have higher ROA compared to companies without leases?
- Question Two: Do companies with leases have higher ROE compared to companies without leases?

2 Literature Review

The purpose of this section is to review the relevant literature on the study area to better present the knowledge gap that the study seeks to fill. The study aims to examine the impact of IFRS 16 on the financial performance of industrial companies listed on the Amman Stock Exchange. Specifically, this chapter includes several sections, after the introduction section, the second section presents the theoretical framework of the IFRS. The third and fourth sections present the theoretical literature of IAS 17 and IFRS 16 related to leases in terms of concept, purpose, recognition mechanism, and accounting treatments from the point of view of the International Accounting Standards Board, and the reasons for issuing IFRS 16. The fifth section discusses financial performance and its metrics, followed by a review of the previous literature on the topic of IFRS 16 and its impact on financial performance. The next section includes the legal responsibility to comply with IFRS 16. Finally, the final section explains what distinguishes this study from other related studies.

The reason for issuing IFRS 16 is due to the criticism surrounding IAS 17. As IAS 17 classifies leases into operating leases that do not appear on the balance sheet, this will mislead users of financial statements who do not have sufficient experience to extract the important information from the off-balance sheet. Therefore, the International Accounting Standards Board found that it is necessary to show lease contracts within the balance sheet to increase transparency, facilitate comparison and take decisions based on clear information. This is to give users of the financial statements a complete and clear picture of the company's financial statements. In addition, IAS 17 allows companies to manipulate by classifying their contracts into operating leases instead of financing leases to improve their financial ratios and reduce their obligations, which leads to misleading users and affecting financial performance (IASB, 2016).

Therefore, IASB issued the new lease standard IFRS 16 "Leases" in 2016 which is effective for accounting periods that start on or after the 1st of January 2019 [8]. The new standard requires lessees to recognize their leases on the balance sheet, replacing IAS 17, which distinguishes between financial and operating leases [9]. The main objective of this issuance is to solve the problems caused by the old standard and provide relevant information that is presented in an honest manner that provides a basis for users of financial statements to assess the impact of lease contracts on financial performance (IFRS Foundation, 2021). From an accounting point of view, the most important measure of IFRS 16 is the elimination of discrimination between operating and finance leases [10]. IFRS 16 adopts a single accounting model for the lessee and requires recognizing leases as assets and lease payments as liabilities, except for short-term leases of 12 months or less, or small assets, when the leased asset is considered to have low value [3].

Regarding the accounting treatment of IFRS 16, this standard will have important implications, particularly for lessees who have operating leases that do not appear on the balance sheet [8]. The lessee must recognize the present value of future lease payments during the lease term as a liability, as the lessee uses in calculating the present value the discount rate contained in the lease agreement, if any, or the additional borrowing rate of the lessee. Also, the lessee must recognize, at the beginning of the contract term, the leased asset as a right of use in addition to any direct costs borne by the lessee, or if the lessee obtains incentives from the lessor or makes payments before the date of

the contract to be calculated, or in the case of removal or dismantling. The used asset is subsequently measured at cost less accumulated depreciation and any impairment losses.

Indeed, there will be no change or difference in IFRS 16 compared to IAS 17 for the lessor. Within the two standards, the lessor continues to classify the leases as an operating lease or a finance lease. For a finance lease, the lessor will recognize the lease as a financed sale of the asset on the balance sheet, whereby substantially all the risks and rewards of ownership of the underlying asset are transferred. While the operating lease is recognized as lease income [11].

The financial performance of the company is considered as feedback on the effectiveness of its operations, as it focuses on the use of financial indicators to measure the extent of achievement of goals and to identify the existing financial position of the company [12]. The company's financial performance level is measured by comparing the company's percentage each year with previous ratios, or with the best performing competitor [13]. Financial performance is also a measure of a company's ability to generate profits or revenue, and knowledge of the strengths and weaknesses of its financial position.

Over decades, previous literature has used various methods to measure the effects of an operating lease on the financial performance of industrial companies. Most of the relevant studies followed the construction operating lease capitalization model of Imhoff et al. (1991) which is considered the most widely cited model. This method capitalizes the present value of operating lease payments to determine the effect of this method on financial performance [5], as it accounts for long-term operating leases as assets and liabilities on the balance sheet, facilitating comparison between companies [9]. This method will have significant impacts on the financial statements of listed companies that adopt IFRS [5]. With this model they investigated 14 US companies for 1987 in seven industries, the result being a 32.4% increase in unrecorded lease assets and a 72.8% increase in unrecorded lease liabilities, and a 21.4% decrease in total equity.

In 1998, Beattie, Edwards [14] used the method of Imhoff Jr, Lipe [15] and examined the effect of capitalization of operating leases on 232 industrial and commercial firms listed in the United Kingdom. On average, they found an increase in unrecorded assets and liabilities of 6% and 39%, respectively.

A study was done by Salam [16] to find the relationship between lease financing and company performance using ROA and ROE with 23 medium and 30 small and medium-sized companies in Bangladesh. The results showed that the medium enterprises were statistically significant positively correlated in a line between lease financing and ROA and ROE. This was the same with small businesses. The results confirmed that lease financing has a significant impact on improving the financial performance of SMEs companies.

Later, Kajirwa and Ikapel [17] analyzed the impact of operating lease financing on the financial performance of a study sample of 4 companies in Kenya. The results showed that financing the operating lease negatively affects financial performance.

More recently, Magli, Nobolo [8] through an analysis of the financial statements of 113 issuers whose shares are traded on the markets managed by the Italian Stock Exchange, confirmed that the financial performance will be significantly affected by the changes brought about by IFRS 16.

According to Wong and Joshi [18], changes in lease accounting will affect the financial performance of companies that have obtained an operating lease and can also affect the decision-making of users of financial statements. The excluding of leased assets from the balance sheet in operating leases improves the company's performance, which results in a material distortion of performance measures [5].

Although previous studies used different samples and in different countries, they proved that industries are clearly affected by lease capitalization. The results showed that the financial performance is affected after the application of capitalization of the operating leases, where unrecorded assets and liabilities are witnessing an increasing trend, towards a decrease in the value of equity. Overall, the previous literature emphasizes the advantages of leasing as an additional financing form for corporations. So, it is an alternative mechanism to facilitate access to finance, especially so for industrial companies.

The change that will occur when the lessee companies capitalize their operating leases will affect their financial ratios. Financial ratios are widely used in financial statement analysis to measure and evaluate the distinctness of a company's financial performance [10]. These ratios are considered essential in making financial decisions for users of financial statements [19]. Financial ratios allow users to know the effect that will occur as a result of lease capitalization, and the ability to compare companies of different sizes and at different periods. Veverková [20] states that capitalization of operating leases following IFRS 16 will have a strong impact on profitability ratios.

Nuryani, Heng [19] prove that constructive capitalization of operating leases significantly affects the financial ratios of companies. Since the capitalization of the operating lease is relevant information in making economic decisions, the non-capitalization of the operating lease leads to the emergence of biased financial statements due to the appropriateness of the financial ratios, and thus misleads the users of the financial statements.

Referring to previous literature, capitalization of operating leases affects profitability ratios. Profitability ratios measure a company's ability to make a profit from its investments, such as return on assets (ROA) and return on equity (ROE). Under IFRS 16, profitability ratios will see a significant difference, due to the removal of expenses from the income statement to the balance sheet, for the lessee. The IASB believes that operating lease capitalization will have significant impacts on companies' financial ratios, where leasing plays a major role in the operations of the firms [21].

Nelson [22] is considered the first to investigate the effect of operating lease capitalization on financial ratios. Nelson [22] used a sample of 11 US companies that voluntarily disclose operating leases in their annual report. The results of his research showed that most financial ratios were significantly negatively affected by operating lease capitalization, and in 56% of cases the ratings of companies changed. According to Nelson [22], this effect could have changed the economic decisions of investors significantly. In addition, financial analysts could easily make wrong decisions through negative changes that occurred on the ratios examined.

The study conducted by Branswijck, Longueville [10] for companies listed in Belgium and the Netherlands, showed a negative effect of lease capitalization on the return

on assets, which supports the results of the studies but also proved that the effect on financial ratios varies between industries. The effects are shown depend on the jurisdiction in which the companies are located.

Similarly, [18] analyzed the impact on the financial ratios of a sample of 109 Australian companies in the fiscal year 2013 that included large industries, the results showed a decline in ROA (-15.35%) and ROE ratios (-1.23%). The study emphasized that financial ratios are important performance measurement tools, as they are used to assess the ability of companies. Moreover, Öztürk and Serçemeli [23] confirmed by the study conducted for an airline in Turkey, that there is a (34.4%) decrease in ROA as a result of the capitalization of the operating lease, but there is a (15.6%) increase in ROE. In another word, this impact changes depending on the density of the use of operating leases in companies and the sector in which they are.

Joubert, Garvie [21] found similar findings to the literate above, examining the effects on companies listed on the Australian Stock Exchange. It is concluded that ROA is one of the main financial ratios most affected by the capitalization of operating leases, due to its dependence on total assets, where the inclusion of leased items as assets in the balance sheet will have a greater impact.

More recently, in research conducted by Raoli [24] in Italy. The results show that the ROE was not affected by the transition from IAS 17 to IFRS 16, in contrast to the operating profitability (ROA) that was affected by this transition.

In many accountings literature, it has been observed that there is a big difference in the results of financial ratios when applying lease capitalization, especially in companies whose leases are classified as operating leases, where their financial ratios will change significantly. Unlike companies that classify their leases in a finance lease, this will not cause very significant changes in their financial ratios [23]. This classification misleads external users of financial statements and prevents them from considering the correct measures to make decisions [25].

Therefore, the following hypothesis is expressed:

H0: There is no statistical difference between companies with leases and companies without a lease in terms of their ROA and ROE.

3   Methodology

After presenting the theoretical background of this study, this section presents the appropriate statistical analysis methods that were used to answer the study questions. Accordingly, this study aims to examine the impact of IFRS 16 on the financial performance of listed industrial companies. This study adopted a quantitative approach to determine the impact of IFRS 16 on the financial performance of industrial companies listed in ASE. A quantitative approach is used to test a hypothesis consisting of variables, measured in numbers, and analyzed by statistical procedures [26].

A quantitative approach was used for this research, and information about IFRS 16 and the financial performance was manually collected based on a sample of 34 Jordanian industrial listed companies over the period 2015–2020. Therefore, the annual reports of the companies have been utilized as the source of study data in terms of IFRS 16 and the financial performance.

The ROE is defined as the net income (after-tax) ratio a company has earned compared to the total amount of shareholder's equity on the balance sheet. ROE is what shareholders are looking for in return for their investment. The high return on equity in the company indicates that it was the best in terms of making profits and being the ability to generate cash internally [8]. ROE shows the company's ability to turn equity investments into profits [12, 27–30]. While ROA is measured by dividing net income on total assets for a given company in a given year. A dummy variable was used to measure the implementation of IFRS 16, were 1 was recorded if the company implement the IFRS 16 and 0 otherwise.

The study population consists of all industrial companies listed in the Amman Stock Exchange until (31/12/2020). The industrial companies were selected as being the most companies that use long-term assets. There were 34 listed companies according to the website of the (ASE).

4 Results

Normality is defined by the normal distribution of values of variables. Before embarking on the analysis of the data, a normality test was carried out for all the quantitative variables ROA and ROE. In this study, a normality statistics test was used to get skewness and kurtosis within -2 and $+2$. As observed in Table 1, the skewness test was within the range of -3.567 to -2.625, and the kurtosis test produced a range of 14.55 to 33.873 for all research variables. These results show that all variables were not distributed normally.

Table 1. Normality test for all research variables

Variables	Skewness		Kurtosis	
	Statistic	SE	Statistic	SE
ROA	-3.567	0.172	33.873	0.342
ROE	-2.625	0.172	14.550	0.342

5 Testing Hypothesis

To test this hypothesis, we answer the research questions as below:

5.1 Question One: Do Companies with Leases Have Higher ROA Compared to Companies Without a Lease?

To answer this question, we use the Mann Whitney U-test to compare companies with leases and without a lease for ROA. Table 1 shows the results.

Table 2 shows the Mann Whitney U-test to compare between companies with lease and without a lease for ROA variable, the results indicate that there is no statistically significant difference between companies with lease and without a lease for ROA variable ($Z = -1.13$, P. > 0.05).

Table 2. Mann Whitney U-test to compare between companies with lease and without a lease for ROA variable

Lease	N	Min	Max	Mean rank	Z	P
No	178	−.857	.361	102.12	−1.13	.259
Yes	22	−.159	.139	87.36		

5.2 Question Two: Do Companies with Leases Have Higher ROE Compared to Companies Without a Lease?

To answer this question, we use the Mann Whitney U-test to compare companies with leases and without a lease for ROE. Table 3 shows the results.

Table 3. Mann Whitney U-test to compare between companies with lease and without a lease for ROE variable

Lease	N	Min	Max	Mean rank	Z	P
No	178	−1.050	0.509	101.78	−.886	.375
Yes	22	−.960	0.274	90.18		

Table 3 shows the Mann Whitney U-test to compare between companies with lease and without a lease for ROE variable. The results indicate that there is no statistically significant difference between companies with leases and without leases for ROE variable (Z = −0.886, P. > 0.05).

6 Conclusion

The objective of this paper is to assess the impact of IFRS 16 on the financial performance of Jordanian industrial companies. Thus, 34 industrial companies listed on the Amman Stock Exchange were studied for the period 2015–2020. The study found that applying IFRS 16 without an operating lease would have no effect on the tested financial ratios (ROA, ROE). The result indicates that with the application of the new standard, there will be no difference between companies with leases and those without leases.

This paper has limitations as it focused on only 34 listed industrial companies on ASE. Not all industrial companies were considered as not all of them had listed and current financial data available at the time of the study. Therefore, further research could be conducted on all industrial companies listed on ASE and then compare the results of this study. If all the industrial companies are compared, then the users of the financial statements will be able to evaluate each company. This paper only focused on the impact of operating lease on profitability ratio. Future researchers could use the 'event study' methodology for more relevant examination.

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The Role of Debt and Dividends in Moderating the Relationship Between Overinvestment and Financial Performance: Evidence from Palestine

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Abstract. The purpose of this study is to look into the impact of debt and dividend policies on the relationship between overinvestment and financial performance. The study's sample includes 31 non-financial companies listed on the Palestine stock exchange (PEX) from 2013 to 2019. Data is manually gathered from financial statements. The function of investment demand is used to calculate overinvestment while firm financial performance measures include EBIT, EBT, and EAT. Panel OLS (Ordinary Least Square) regression with robust standard errors was used for estimation. The findings revealed a negative link between overinvestment and financial performance, which can be mitigated by both debt and dividend policies. The debt and dividend policies, according to this article, are effective approaches for reducing the free cash flow problem and improving corporate governance in order to control the problem of agency.

Keywords: Free cash flow problem · Overinvestment · Debt policy · Dividend policy · Palestine

1 Introduction

The most important trio of financial policies is dividend policy, debt policy, and investment policy [1–3]. Together, these policies play an essential part in determining the company's profitability, as both the debt policy and the dividend policy can help improve the company's investment strategy. To attain the optimal level of investment, managers must efficiently allocate capital resources during the management process, ensuring that marginal costs and marginal benefits of capital investment are equal. Any investment that exceeds the optimal level indicates inefficient investment decisions. This indicates that there is a problem with over-investment, which leads to ineffective management. Overinvestment is caused by a misalignment of interests between shareholders and executives. While managers want to increase the value of the assets under their control for personal gain, shareholders seek to increase the company's value in the future by increasing earnings [4]. As a result, managers strive to boost investment levels, which increase the chances of managers investing in initiatives with negative net present value [5]. As

a result, shareholders pay dearly to limit such discretionary activity in order to align interests between the two parties by watching the managers. The company's success is harmed by these high costs and inefficient investment decisions [6].

In order to satisfy their commitments to both shareholders and debt holders, managers must pay dividends and use debt more effectively, according to agency theory [7, 8]. As a result, the corporation might reduce the costs of the agency problem by combining an investment policy with dividends and debt policies to effectively oversee managers' behavior. These policies can be used as instruments to help the board limit the excess cash flow. Governance should create a company plan that includes dividends, debts, and investments. Over-investment can be mitigated by adjusting one of the three factors. This will eventually offset the detrimental impact of excessive investment on the company's profitability.

This study attempts to answer the following research questions: (1) is the financial performance of non-financial corporations listed on the Palestine Stock Exchange negatively affected by over-investment problem?, (2) can the negative effect of over-investment on financial performance be mitigated by the use of debt policy?, and (3) can the negative effect of over-investment on financial performance be mitigated by the use of dividends policy.

This paper is novel in Palestine and in the surrounding region where agency problems are widespread. It sheds new light on agency alleviation techniques that have the potential to succeed. These policies can be used by Palestinian businesses to prevent excessive free cash flow, which helps to alleviate the problem of over-investment and improves the company's performance. Furthermore, the findings of the study back up the agency theory by recognizing the interdependence of over-investment, debt, and dividend policy, all of which are elements of the agency theory. The following part reviews the literature. Section 3 explains the procedure. Following the findings in Sect. 4, Sect. 5 concludes.

2 Literature Review

In a perfect capital market, there are no taxes, bankruptcy fees, or transaction fees between market participants. Information is equally accessible to management and shareholders. Debt burden is shared equally among debt-holders and stockholders. In imperfect markets, flaws in the system allow for the creation of new theories. The cost and benefit of using debt in the capital structure are depicted using the trade-off theory [9–11]. Pecking order theory depicts a hierarchy of financing sources (from least to most safe) [12], Bird-in-Hand theory describes how uncertainty can be reduced by supporting dividend payments [13], and the agency theory portrays the competing interests of shareholders and managers [14].

Managers take advantage of their insider knowledge to make decisions that benefit them the most, such as overinvest in projects that are unviable and may have a negative present value. The problem may worsen if shareholders do not succeed in uncovering the managers' conduct of such behaviors through their supervisory role [12, 15], causing the company to suffer from the problem of overinvestment and, as a result, the indirect deterioration of the company's value over time [15].

Several studies have examined the link between profitability and overinvestment. In a study of listed Singaporean companies, Shima [16] identified a link between over-investment and profitability. Farooq et al. [17] classified investment into three levels in their research of Chinese firms: optimal that is effective and efficient. Under- and over-investment, on the other hand, are inefficient. Finally, optimal investing is rare, say Guariglia and Yang [18]. Agency concerns have impacted the company's performance and restricted capital availability. A similar conclusion is found by Lee and Kim [19] research. Nonetheless, Jensen [1] presented an agency theory based on free cash flow. Managers can use extra free cash flow to increase investment and their position by controlling more resources [2, 6]. As a result, lowering free cash flow has been suggested as a solution [1, 8]. Debt and dividend policies can help reduce free cash flow, prevent over-investment, and increase external monitoring [1, 20–24].

The Richardson [25] study also indicated that increasing monitoring can assist minimize free cash flow. A study by Lang and Litzenberger [26] showed that minimizing over-investment could enhance dividend distributions while boosting business value. The above-mentioned problems reveal a positive relationship between debt and performance in over-invested firms. With debt or tight debt agreements, the company may suffer insolvency or, at best, financial hardship. Manager possibly losing their management influence as a result. In terms of dividend policy, Kato et al. [27] discovered that if institutional ownership is concentrated, dividend payouts may not be effective in curbing overinvestment. This is because controlling owners can decide what dividends to pay out. To put it another way, the controlling shareholders' decision to distribute dividends can be used as a tool to get the remainder of the investors (shareholders who own insignificant or few shares in the company) to overlook the over-investment, which has a negative impact on the company's performance [1, 28]. Based on this review of literature, the following hypotheses have developed:

H1: Over-investment negatively affects financial performance of corporations listed on PEX.
H2: Debt policy may moderate the negative relationship between over-investment and financial performance of corporations listed on PEX.
H3: Dividend policy may moderate the negative relationship between over-investment and financial performance of corporations listed on PEX.

3 Methodology

3.1 Data

The relationship between over-investment and financial performance, as well as the effects of debt and dividend policies on this relationship, were investigated in this study. Palestinian data manually collected from annual financial reports was used to evaluate the hypotheses. From 2013 to 2019, the research used the financial reports of 31 non-financial companies listed on the Palestine Exchange (PEX). The study's final sample is made up of 186 firm-year observations in total.

3.2 Variables

The Dependent Variable. In this research, financial performance was used as a dependent variable; it is measured by earnings before interests and taxes (EBIT), earnings before taxes (EBT), both scaled by total assets and earnings after taxes to total assets (ROA).

The Independent Variable. Over-investment is used as an independent variable in this research. It is measured by subtracting the real to the fitted value of required investment to get the residual. In short, overinvestment has been measured as the residual amount given $v_{i,t} > 0$ through the following regression equation (definition of variables is in Table 1):

$$\text{Invesment}_{i;t}^{\text{NEW}} = \lambda_1 \text{DebitRatio}_{i,t} + \lambda_2 \text{Risk}_{i;t} + \lambda_3 \text{CompanySize}_{i,t} + \lambda_4 \text{SaleGrowth}_{i,t}$$
$$+ \lambda_5 \text{AssetTurnover}_{i,t} + \lambda_6 \text{GrowthOption}_{i,t} + \lambda_7 \text{CashFlow}_{i,t} + V_{i,t}$$

$$\tag{1}$$

Table 1. Overinvestment estimation

Dependent Variable:
Investment ^{NEW} (New investment): It is measured by total investment including long-term and short-term investment divided by total asset.
Explanatory (Independent) variables:
Cash Flow: It is measured by the free cash available to the company after subtracting capital expenditures.
Growth Option: It is measured by Tobin's Q ratio calculated as the market value of the company divided by the book value of assets.
Asset Turnover: It is a measure of the fixed assets needed for each dollar of sales measured by total fixed assets divided by total sales.
Sales Growth: It is measured by growth rate of sales over one year.
Firm Size: It is measured by natural logarithm of total assets.
Risk (Business risk): It is measured by standard deviation of ROA in three consecutive years.
Debt Ratio: It is measured by total liabilities over total assets.
V: Error term which is the measure of overinvestment given that vi,t > 0 and zero otherwise.
i.t **:** firm and year subscripts

Moderating Variables. The following variables were used as moderating variables in this research:

Dividend Policy. Measured by Cash dividend payout divided by earning after tax.

Debt Policy. Measured by Total liabilities/total asset.

Control Variables. The following variables used as control variables in this research following [7, 29, 30]:

Company Size. It is measured by the natural logarithm of total assets.

Growth. It is measured by growth rate of total sale.

Risk. It is measured by standard deviation of ROA over rolling three years.

Liquidity. It is measured by quick ratio (current assets – inventories)/current liabilities.

Tangibility. It is measured by tangible fixed asset/total asset.

Table 2 summarized the variables used in this research.

Table 2. Variables of the study

Variable type	Variable	Symbol	Measurement method	Source
Independent variable	Over-investment	Overinvestment	Investment residual measured by overinvestment estimation with $vi,t > 0$	[25]
Dependent variable	Financial performance	Performance	EBIT/Total Asset, EBT/Total Asset, EAT/Total Asset	[31]
Moderating variables	Dividend policy	Dividends	Cash dividend pay-out over earning after tax	[31]
	Debt policy	Debt	Total liabilities/total asset	[31]
Control variables	Company size	Size	Natural logarithm of total asset	[9, 10]
	Growth	Growth	Growth rate of total sale	[29, 32]
	Risk	Risk	Standard deviation of ROA	[32]
	Liquidity	Liquidity	Quick ratio (current assets – inventories)/current liabilities	[33]
	Tangibility	Tangibility	Tangible fixed asset/total asset	[31]

3.3 Estimation Model

This research utilized a panel OLS with robust standard errors in estimating the relationships through the following regression model:

$$Performance_{i,t} = \lambda_0 + \lambda_1\ Size_{i,t} + \lambda_2\ Growth_{i,t} + \lambda_3\ Risk_{it}$$
$$+ \lambda_4\ Liquidity_{i,t} + \lambda_5\ Tangibility_{i,t} + \lambda_6\ Dividend_{i,t} + \lambda_7\ Debt_{i,t}$$
$$+ \lambda_8\ Overinvestment_{i,t} + \lambda_9\ Dividend_{i,t} \times Debt_{i,t}$$
$$+ \lambda_{10}\ Debt_{i,t} \times Overinvestment_{i,t} + \lambda_{11}\ Dividend_{i,t} \times Overinvestment_{i,t}$$
$$+ \lambda_{12}\ Dividend_{it} \times Debt_{i,t} \times Overinvestment_{i,t} + \mu_{i,t} \qquad (2)$$

4 Empirical Results

Table 3 lists the factors used in this study. Excessive investment is the key independent variable, accompanied by corporate performance (EBIT, EBT, and ROA) and control factors. Over-investment is 9.6% on average, with a median of 0% and a standard deviation of 16.9%. Other variables follow the same path. Each variable has a maximum of 186 observations. However, the low bivariate correlation coefficients between independent variables indicate that multicollinearity is not an issue in subsequent regressions.

Table 3. Descriptive analysis

	Mean	Median	Maximum	Minimum	Std. dev.	Observations
EBIT_TA	0.038	0.034	0.275	−0.600	0.085	186
EBT_TA	0.030	0.027	0.275	−0.622	0.087	186
ROA	0.027	0.024	0.275	−0.622	0.085	186
FIRM_SIZE	7.249	7.296	8.636	5.873	0.651	186
GROWTH	1.651	0.011	262.413	−1.000	19.416	184
STDV__EBITDA	0.030	0.021	0.229	0.000	0.034	186
LIQUIDITY	2.976	1.342	63.792	0.103	7.924	186
TANGABILITY	0.298	0.228	0.966	0.000	0.257	186
CASH_DEVIDENDS	1.506	0.000	203.793	−8.550	14.974	186
LEVERAGE	0.340	0.335	1.122	0.012	0.199	186
OVERINVESTMENT	0.096	0.000	0.982	0.000	0.169	186

Table 4 presents the results of regression analysis using financial performance measured by EBT, EBIT, and ROA as the dependent variables. Over-investment is the independent variable. The debt policy and dividend policy as moderator variables on the

Table 4. Estimation results (panel OLS Regression results)

Variable	Dependent variable		
	EBT/TA	EBIT/TA	ROA
SIZE	0.00	0.006	0.005
	(0.01)	(0.010)	(0.010)
GROWTH	0.00	0.000	0.000
	(0.00)	(0.000)	(0.000)
STDV_EBITDA	**−1.11*****	**−1.057*****	**−1.041*****
	(0.37)	(0.363)	(0.369)
LIQUIDITY	0.00	0.001	0.001
	(0.00)	(0.001)	(0.001)
TANGIBILITY	**−0.12*****	**−0.110*****	**−0.117*****
	(0.03)	(0.028)	(0.028)
DIVIDENDS	**−0.01***	−0.002	−0.002
	(0.00)	(0.005)	(0.005)
LEVERAGE	**−0.15*****	**−0.122*****	**−0.141*****
	(0.03)	(0.034)	(0.034)
OVERINVESTMENT	**−0.23*****	**−0.214*****	**−0.223*****
	(0.05)	(0.045)	(0.044)
DIV*LEV	**0.02****	0.003	0.003
	(0.01)	(0.010)	(0.010)
LEV*OVERINVEST	0.04	0.016	0.058
	(0.16)	(0.160)	(0.158)
DIV*OVERINVEST	**−2.08****	**−2.131****	**−1.627***
	(0.98)	(0.968)	(0.924)
DIV*LEV*OVERINVEST	**5.47****	**5.633****	**4.268***
	(2.51)	(2.475)	(2.362)
Constant	**0.17****	0.114	**0.126***
	(0.08)	(0.072)	(0.070)
R-squared	0.372	0.351	0.365
Adjusted R-squared	0.328	0.306	0.321
F-statistic	**8.435*****	**7.710*****	**8.202*****
Total panel (unbalanced) observations	184	184	184

Cross-section weights (PCSE) standard errors & covariance (d.f. corrected)

Standard errors in parentheses.
***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

overinvestment-financial performance relationship and Size, Growth, Risk, Liquidity and Tangibility are control variables.

The R-squared of the three models is good, as is the F-statistic. The free cash flow hypothesis can explain the strong negative significant connection between overinvestment and all performance measures. Managers strive to boost investment to increase their control over money. In fact, they overinvest in initiatives having a negative net present value. Firms must pay and supervise managers to avoid agency concerns [17, 19, 31, 33].

Leverage has a negative effect on all performance measures. This finding is reinforced by the belief that when a company's capital structure is more debt-laden, it is more likely to face bankruptcy and financial difficulties. The rising interest payments will hurt these enterprises' profits [9, 10]. The dividend variable has a negative influence on EBT but is minimal on EBIT and ROA. The relationship between payouts and performance is thus tenuous. Only a few studies have found a negative correlation between dividend policy and business performance [34].

The relationship between dividend and leverage is positive when measured by EBT, but insignificant when measured by EBIT or ROA. The positive debt-dividend interaction coefficient indicates a substitution effect. Dividend payments will reduce the firm's financial resources, forcing it to borrow money to fund new investment initiatives, enhancing future profitability. Thus, combining the use of debt in the company's capital with dividend distribution can assist offset the negative effects of either policy alone. Unfortunately, research on the relationship between debt levels, dividend policy, and financial performance is lacking. The level of significance of the correlations between leverage, dividend, and firm performance is reliant on the choice of the firm's financial performance proxies, according to Vu et al. [35].

There is also a significant and unfavorable interaction between dividend and overinvestment in their association with financial performance. This suggests that the combined effect of dividends and over-investment in Palestinian enterprises exacerbates overdetrimental investment's impact on performance. The free cash flow hypothesis and the overinvestment hypothesis are incompatible with this. Given the Palestinian market's institutional foundation, this finding should not be surprising. According to Abdeljawad and Masri [7], there is a concentration of institutional ownership in Palestine, which could lead to conflicts of interest between small and large shareholders. In some cases, the firm becomes a subsidiary when institutional investors extend their ownership in enterprises they control. Their majority in general meetings allows them to make decisions that align with their goals. Thus, dividend decisions benefit controlling owners. As a result, dividend policy in Palestine has no impact on controlling overinvestment. This conclusion is consistent with Kato et al. [27] and Denis et al. [28] research.

Leverage and overinvestment have a weak and negative relationship with financial performance as measured by EBT, EBIT, and ROA. So the disciplinary effect of debt does not reduce overinvestment and so does not increase performance. This may be owing to solid relations between Palestinian banks and enterprises. The debt does not pressure or endanger Palestinian firms to undertake profitable projects, limiting the negative effects of overinvestment. This result is consistent with De Jong's [36] research.

This means that corporations that pay dividends, use debt in their capital structure, and overinvest have a significant and beneficial moderating effect on financial performance. Comparatively, paying dividends separately had a negative impact on performance, but the positive effect of this interaction lessens the negative impact of overinvestment. The positive interaction between the three factors suggests that Palestinian companies that pay dividends and have greater leverage will perform better by reducing over-investment. This means those firms have fewer agency difficulties. This contradicts the conclusions of Nghĩa et al. [33] and Trong and Nguyen [31], who stressed the substitution effect between leverage and dividends, claiming that using one of them improves performance by limiting the negative effect of overinvestment. When the two policies are used together, they have a detrimental impact on performance. However, it was discovered in this paper that using one of the two policies (dividends or increasing financial leverage) as a single company policy is insufficient to limit the negative impact of overinvestment on performance, but combining them effectively restricts over-investment in Palestinian companies and thus raises performance.

This article also takes into account some control variables such as business risk, tangibility, liquidity, firm size, and growth. Business risk has a negative and severe impact on performance [37]. Companies' profitability may fluctuate over time as they engage in more risky ventures, increasing their risk of bankruptcy, an outcome in line with Trong and Nguyen [31]. Interestingly, tangibility displays a negative significant connection with performance, contrary to our predictions. Agency costs of debt can be decreased as a result of easy collateralization of tangible assets, resulting in improved financial performance, which interprets the positive influence of tangibility on firm performance [9, 10]. Furthermore, tangible fixed assets have been shown to have a significant impact on the efficiency of a company's operations. Liquidity, firm size, and growth have no effect on the outcome.

5 Conclusion

Based on the free cash flow hypothesis and agency cost theory, this study assumed that the three financial policies of debt, dividend, and investment are interrelated. We contend that overinvestment negatively affects business performance. Dividend and debt policies interact to remove excess free cash flow from the firm, lowering the overinvestment effect on firm performance. The findings of this study imply that corporations should combine financial leverage and dividend payments to limit excess free cash flow and thereby reduce the impact of overinvestment on a company's profitability. This study has significant drawbacks. Because Palestine is a developing country with distinct economic and political circumstances, the study's conclusions may not be generalizable. Future research should include more nations to allow for generalization.

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Impact of Audit Committee Effectiveness on Malaysian Takaful Performance, and Moderating Role of Shariah Committee Quality

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Abstract. This paper examines the impact of the audit committee's effectiveness (ACE) on the performance of Malaysian Takaful companies licensed by the Central Bank of Malaysia. In addition, this study investigates the moderator role of Shariah Committee Quality (SCQ) on the relationship between ACE and performance. The study uses a sample of 11 Malaysian Takaful from 2010 to 2017. Performance is proxied using return on assets and return on equity, while ACE is measured via four attributes, mainly audit committee (AC) chairman specialization, size, independence, and meeting. Furthermore, SCQ is quantified via an index based on six attributes. To answer our research questions, a panel fixed effect regression is used. Our results show that ACE positively affects performance. At the individual level, a larger and more independent audit committee positively related to performance of Malaysian Takaful companies. However, AC meeting and chairperson specialization do not affect performance. Moreover, Shariah Committee Quality positively moderates the relationship between ACE and Malaysian Takaful companies. Results provision the important role played by AC in boosting performance. Our findings are of great importance to Malaysian regulators to enhance the existing corporate governance effectiveness by directing Takaful companies to establish robust and high-quality audit and Shariah committees. This research provides a new understanding regarding AC as a component of CG and its relationship with performance. This study is supposed to fill the gap in corporate governance by testing the impact of AC effectiveness on performance and its implementation in Malaysia especially in the Takaful sector. Besides, this study brings additional evidence of the influence of AC on performance, which is moderated by SCQ.

Keywords: Malaysian Takaful companies · Shariah committee quality · Audit committee · ROA · ROE

1 Introduction

Effective and good corporate governance is critical for a company to remain competitive and strong (Al-Amarneh and Yaseen 2014), and many countries worldwide have enacted

corporate governance systems and introduced some reforms to protect shareholder rights and attract foreign investments. Accounting and finance scholars have paid great attention to corporate governance (CG), the audit committee (AC), and the board of directors (BOD). The CG is found to increase the monitoring tools, which could reduce the agency problems between managers and shareholders. More specifically, AC is seen as a key element in corporate governance and is assumed to monitor management's practices, reduce fraud, enhance the quality of financial reporting, and ensure that managers are ethically disclosing their companies' financial statements. While a better quality of financial reports can boost investor confidence, financial fraud can decrease investor confidence (Blue Ribbon Committee 1999).

Therefore, audit committees play an important role in monitoring a company's management, maintaining accountability, and improving transparency (Alqatamin 2018). "The AC is an important governance mechanism designed to ensure that a company produces relevant, adequate and credible information that investors, as well as independent observers, can use to assess company performance" (Bansal and Sharma 2016). A reliable presentation of a company's financial position will boost its financial performance (Bhardwaj and Rao 2015).

The two principal functions of an AC are monitoring and reporting a firm's financial performance. In serving these functions, an AC deals with appointing, terminating, and compensating external auditors, reviewing the content and extent of audit work and internal control system, ensuring auditor independence, and resolving disagreements between executive management and auditors. ACs evaluate and recommend accounting policies and practices and monitor the financial reporting, disclosure levels, and adherence to standards and practices of a firm. In addition to monitoring a firm's accounting processes and their reliability, ACs ensure compliance with corporate ethical and legal standards, including fraud prevention controls (Turley and Zaman 2004; Eldaia et al. 2022).

In Malaysia, the market faced an extraordinary crash with the loss of investors' confidence in the aftermath of the Asian financial crisis of 1997. To boost investors' confidence, Malaysia has enacted the Malaysian Code of Corporate Governance (MCCG) in 2000, a framework for regulating corporate governance best practices. Based on this code, ACs duties include reviewing the scope of the internal auditing function and its results, evaluating quarterly and yearly financial statements, and discussing any concerns arising from the audit process with the external auditor. The audit committee is also given an explicit authority to access a firm's financial and non-financial information (Mohd Saleh et al. 2007; Eldaia 2020).

The uniqueness of Malaysia as compared to others stems from various aspects. It is a quickly developing nation with a unique background. Although being dominated by Muslims, it is the home of multiple cultures, races, and religions. The combination of these factors has led Malaysia to become an Islamic finance hub while attracting many foreign investors and Islamic banks. Companies listed on the Bursa Malaysia are categorized as either Shariah-compliant or non-Shariah compliant companies. Shariah-compliant companies conduct their activities while adhering to Islamic principles, and thus are categorized as Shariah-compliant by the Shariah Advisory Council (Othman et al. 2009).

This study is the first to investigate the association between AC and financial performance in Malaysian Takaful companies (MT) and the moderating role of SCQ. This paper is organized as follows. The second section presents the literature review followed by hypothesis development. The third section data details and the research methodology. "The fourth section describes and discusses the findings, and the fifth section concludes the study with some recommendations".

2 Literature Review

An audit committee (AC) is a key component of the corporate governance system needed to overview the financial reporting process for companies, reduce agency problems, and improve the quality of disclosed information to shareholders. Its role has evolved from being a voluntary mechanism to a core monitoring process for shareholders and the attention of many regulatory bodies (Abbott and Parker 2000). The present responsibilities of Audit Committee are helping the board of directors to fulfil its governance responsibilities and overseeing the accounting and financial reporting, the internal control system, the risk management system, and the audit processes of the company (AlMatrooshi et al. 2016). It should include qualified and non-executive independent directors who will strengthen the internal audit function and act as a reliable guardian of public interest (Abbott et al. 2002). Many regulators have put requirements for the financial knowledge of the directors and the composition of AC. For example, Sarbanes-Oxley (SOX) "requires the AC to be entirely composed of independent directors and to include at least one financially knowledgeable member" (Sarbanes-Oxley Act (SOX) 2002).

2.1 Theoretical Framework

CG is defined as the mechanisms implemented to control the management activities and decisions to ensure the right of shareholders to have accurate, correct, and timely information (Claessens and Yurtoglu 2013). Firms are adopting CG to assure their commitment to the accurate, timely, and transparent disclosure of financial information (Tariq and Abbas 2013). The impact of CG on FP has been initially suggested by the agency theory (principal-agent), which clarifies the relationship between shareholders and managers. Given the separation between ownership (principal) and management (agent), companies should create mechanisms to control and observe the manager's behaviour and ensure the rights of shareholders and stakeholders. "The agency theory explains the board's effect in decreasing the conflicts between principals and managers". The governance mechanisms are among the primary factors that could reduce agency problems and enhance firm performance, based on the agency theory perspective (Nasrallah and El Khoury 2021a, b).

Since then, other theories were used to explain the association between CG and firm performance. For example, the stakeholder theory focuses on protecting all stakeholders, whether individuals or groups, like creditors, governments, shareholders, or suppliers, to boost firm performance. The resource dependence theory assumes that institutional structures, like the board of directors and audit committees, are intended to assure effective control over management and to serve as an active link to produce excellent relationships with external resources, which will improve financial performance (Pfeffer 1973).

2.2 Hypotheses Development

The audit committee is considered as a global corporate governance requirement, which is needed to ensure better transparency towards shareholders and to decrease earnings management and frauds (Weir et al. 2002). Several AC characteristics have been researched to understand their relevance to firm performance. Any difference in performance could be attributed to the difference in Audit Committee characteristics. The main AC examined in this study, which we will discuss below, are four (i) specialization of AC chairman; (ii) size of AC; (iii) independence of AC; and (iv) AC meeting frequency. The purpose is to clarify, if any of these characteristics, significantly affect the financial performance of MT companies.

H1: There is a positive relationship between audit committee chairman specialization and the performance of MT companies.
H2: There is a positive relationship between audit committee size and the performance of MT companies.
H3: There is a positive relationship between audit committee independence and the performance of MT companies.
H4: There is a positive relationship between audit committee meeting frequency and the performance of MT companies.
H5: There is a positive relationship between AC effectiveness and the performance of MT companies.
H6: SCQ moderates positively the "relationship between AC effectiveness and the performance of Malaysian Takaful companies".

3 Data and Methodology

3.1 Data and Sample

Our initial sample consists of all MT Companies listed by the Bank Negara Malaysia (BNM), from 2010 to 2017. Given a small number of those companies, the study period was expanded to explore the impact of AC on performance. The result is panel data of 11 companies for eight consecutive years, which helps in measuring the changes between events in time (Cavana et al. 2001). This "study period is large enough to include many important events, both international and local, such as the European debt crisis, the Greek government-debt crisis of 2015–2016, and the Chinese stock market turbulence, in addition to the 1Malaysia Development Berhad (MBD) crisis in 2016" (a significant local financial crisis). Another feature is the fact that Malaysian Corporate Governance (MCCG) was revised twice within this time frame, in 2012 and 2017.

Using STATA, version 16.0, a panel data is used consisting of 11 companies (N = 11), over 8 years (T = 8), leading to a total of 88 observations (N = 11*T = 8). As for missing values, we treat them following Hair et al. (2017)'s recommendations. More specifically, the mean value is used to replace a missing variable if the missing values are less than 15% of the sample. However, the observations are removed from this study if the missing values exceed 15% of the sample. In this study, the first method is used, whereby the missing values are replaced by the mean value. This results in a strongly balanced data.

3.2 Variables

3.2.1 Dependent Variables

The accounting and management literature has used firm performance (FP) as a major dependent variable (Bauer et al. 2008; Klapper and Love 2004; Shatnawi et al. 2019). In line with past research, we use two accounting measures to calculate our dependent variable, mainly return on assets (ROA) and return on Equity (ROE) (Buallay et al. 2021; El Khoury et al. 2021a, b).

3.2.2 Independent Variables

This study uses four main independent variables to explore their impact on FP. The first independent variable is Audit Committee Chairman Specialization (ACCS), measured as a dummy variable that takes the value 1 when the AC Chairman has an accounting specialization and 0 otherwise. The second variable is "Audit Committee Size (ACS) measured as the total number of directors in the audit committee. The third variable is Audit Committee Independence (ACI) calculated as the ratio between the total number of independent directors in AC and the total number of directors". "Audit Committee Meeting Frequency (ACMF) is the last variable, measured as the total number of meetings held by AC every year. These four characteristics are integrated into one score, named AC effectiveness (ACE)".

3.2.3 Control Variables

Three control variables have been considered. Firm size (FSIZE) is the first control variable considered, measured as the book value of total assets. The second control variable included is Firm Age (FAGE) defined as the number of years since incorporation. The last control variable is leverage (LR) and is measured as the ratio between debt and total assets. These variables are included as they are found to significantly affect performance (Al-Matari *et al.* 2014). While size and age are expected to have a positive effect on performance, a negative effect of leverage on performance is expected.

3.2.4 Moderator Variable

Finally, the moderator variable is the Shariah Committee quality (SCQ), which is measured by aggregating six attributes, "mainly Shariah committee expertise, multi-committee membership, qualification of Shariah committee members, Shariah committee size, Shariah committee meeting frequency, and Shariah committee gender diversity, into one index". A higher figure indicates better quality.

Table 1 shows the definition and the measurement of all variables.

Table 1. Variables and their measurements

Variables	Acronym	Measurement
Dependent variables		
Return on Assets	ROA	Net income/total assets
Return on Equity	ROE	Net income/shareholders' equity
Independent variables		
Chairman Specialization	ACCS	A dummy variable equal to "1" if the AC chairman has an accounting qualification and "0" otherwise
AC Size	ACS	The total number of AC members
AC Independence	ACI	The number of independent non-executive directors in AC divided by the total number of directors in AC
Meeting Frequency	ACMF	The number of AC meetings held during the financial year
Control variables		
Firm Size	FSIZE	Book value of total assets
Firm Age	FAGE	Number of years since the firm was incorporated
Leverage Ratio	LR	Debt/Assets
Moderator variable		
Shariah Committee Quality	SCQ	Index made of 6 key board attributes

4   Analysis of Results

4.1   Descriptive Statistics

The descriptive statistics of dependent variables (ROA and ROE), independent variables measuring audit committee's effectiveness (audit committee chairman specialization, audit committee size, audit committee independence, meeting frequency), the ACE index, in addition to SCQ as a moderator variable. Results show that the ROA's average is −0.68% with a median: 0.4%, ranging from −18.2% to 0.9%. ROE, on the other hand, shows a higher figure, with a positive mean of 1.3% and a median of 3.1% (minimum: −38.6% and maximum: 26%). Audit Committee size is 3.314 members, while audit committee independence accounts for 80.2% of members. ACCS, which is when the AC chairperson has an accounting qualification, accounts for 77.1%. This high figure shows the importance of accounting specialization within MT companies. Moreover, the audit committee meets, on average, 5.536 times every year. When looking at audit committee effectiveness, the mean is 0.502, ranging from 0 to 1. Finally, the mean value for SCQ is high, being 0.881 and varying from 0.48 to 1, indicating the importance of the quality of the Shariah committee within MT companies.

4.2 Audit Committee Characteristics and Financial Performance

To achieve this paper's objective and to investigate the effect of audit committee characteristics on the performance of MT companies in Malaysia, the panel regression fixed-effect method is used.

4.2.1 AC Chairman Specialization and Financial Performance

The first hypothesis predicts a positive association between AC chairman specialization (ACCS) and the performance of MT companies. The coefficient of the chairman specialization is positive (being 0.046 and 0.065 for ROA and ROE respectively). While it is insignificant for ROA (T = 1.33, p = 0.159), it is significant at 10% for ROE (T = 1.89, p = 0.061). This relationship is expected given that AC chairman in most of the sample firms is qualified in finance and possess the auditing skills required to perform the tasks. Thus, our results reject H1, concluding that the presence of a chairman specialization has no effect on the financial performance of MT companies, although it is significant for ROE, but only at 10%.

4.2.2 AC Size and Financial Performance

The second hypothesis proposes a positive connection between ACS and the FP of those Malaysia companies. The variable ACS the expected positive sign and is statistically significant. More specifically, the ACS coefficient is 0.139 and 0.044 for ROA and ROE, respectively. It is significant at 5% (p < 0.05) for ROA (T = 2.13, p = 0.037), and ROE (T = 2.33, p = 0.024). Therefore, the second hypothesis is accepted, implying that ACS contributes to the performance of MT companies. Our results are consistent with the resource dependency and the agency theories. Thus, as the size of the audit committee increases, the available resources will increase, which will F improve the effectiveness of AC. Moreover, a larger AC might bring the benefits of diverse skills, experiences, expertise, and broader knowledge on Takaful business, which will enable the committee to make better decisions and handle different problems, thus minimizing agency problems. This finding is consistent with Aldamen et al. (2012), Alqatamin (2018), and Pearce and Zahra (1992) who find that a larger audit committee size is associated with better performance. Thus, our results support H2, suggesting the presence of a positive relationship between ACS and the performance of MT companies.

4.2.3 AC Independence and Financial Performance

The third hypothesis predicts a positive link between AC independence and FP. Results shows that ACI has the expected positive sign (coefficients of 0.179 and 0.213 for ROA and ROE, respectively). This variable is significant at 1% (p < 0.01) for ROA (T = 2.54, p = 0.009) and ROE (T = 3.19, p = 0.002), confirming our third hypothesis that an increase in AC independence will positively contribute to a higher ROA and ROE of Malaysian Takaful companies.

The positive effect of AC independence on FP could be related to the fact that an audit committee with more independent directors is more likely to offer better oversight and supervising role (Kallamu and Saat 2015), which will improve company performance. This result reinforces the agency theory, implying that independent directors reduce the conflicts of interest, increase transparency, and enhance the quality of decision-making (Fama and Jensen 1983), effectively monitor management activities, thus reducing exploitation of power and likelihood of opportunistic behavior by managers (Fernández-Gago et al. 2016), eventually enhancing performance. This finding is consistent with Chan and Li (2008) and Kallamu and Saat (2015), who find the same positive relationship. Thus, H3 is accepted, suggesting that independent members boost the accounting-based performance of the Malaysian Takaful companies.

4.2.4 Meeting Frequency and Financial Performance

The "fourth hypothesis of this study proposes a positive association between AC meetings and FP. The findings show a positive effect on FP (coefficients of 0.004 and 0.005 for ROA and ROE", respectively), but insignificant ($p > 0.1$). Thus, our hypothesis is rejected, implying an insignificant relationship between ACMF and the company's performance.

One possible explanation is that meeting frequency might not accurately gauge audit committee's diligence. For instance, Spira (1999) states that meetings were mostly unproductive in boosting financial reporting because the meetings were primarily ceremonial. Additionally, in MT companies, the SC is responsible for monitoring and controlling activities. This finding is also in harmony with Alqatamin (2018) and Mohid Rahmat et al. (2009) who find an insignificant relationship. Given that AC meeting in Malaysia is obligatory, AC should meet regularly irrespective of the quality of the meetings. Thus, those compulsory AC meetings are not translated into better performance. Thus, H4 is rejected, suggesting that changes in AC meeting frequency will not affect the FP of Malaysian Takaful companies.

4.2.5 Audit Committee Effectiveness and Performance

In the second step, ACE is measured using a composite score by aggregating the four attributes previously mentioned (Mathew et al. 2020; Rasli et al. 2020; Makhlouf et al. 2017). The objective is to see the aggregate effect of these metrics on the financial performance of MT companies, as it is often believed that an overall measure indicates a more significant effect than an individual measurement. The p-value is statistically significant at the level of 0.000 ($p < 0.000$), and the R-square indicates that 54% and 44.5% of the variations in ROE and ROA are explained by ACE and the three control variables included in this model".

The fifth hypothesis posits a positive impact of ACE on the performance of MT companies in Malaysia. The findings show that the ACE coefficient is positive (coefficients of 0.271 and 0.193 for ROA and ROE respectively) and significant at 1% ($p < 0.01$). Thus, this finding indicates that an increase in AC effectiveness will positively contribute to the accounting-based performance of MT companies. Accordingly, the fifth hypothesis is supported, concluding that the ACE is considered as an essential corporate governance

factor that controls the activities of MT companies, increases their transparency, reduces agency costs, thus enhancing their financial performance.

4.2.6 SCQ as a Moderator Between ACE and Financial Performance

The last model is run to test the role of SCQ as a moderator on ACE-FP link. Although the moderator relationship can be measured using the hierarchical regression, we rely on the technique suggested by Hair et al. (2010), consisting of creating a new variable which is a multiplication of two main predictors. Thus, in this study, a new variable, known as the moderator variable (ACE*SCQ), is created by multiplying ACE by SCQ. Thus, our sixth hypothesis predicts that SCQ would positively moderate the impact of ACE on the financial performance of MT companies (i.e., ACQ*SCQ should have a positive sign). The results, which again show a statistically significant model for both FP (p < 0.01). "Moreover, 59% and 53% of the variation in ROA and ROE might be explained by AC effectiveness, SCQ, the moderating effect, and the control variables, Looking at the coefficients, the moderator variable (ACE*SCQ) has a positive and significant effect on performance (coefficients of 0.057 for ROA and 0.037 for ROE, significant at 1%), suggesting that SCQ positively moderates the relationship between ACE and FP, accepting hypothesis 6". This result advocates the dual role played by the audit and Shariah committee in improving the performance of MT companies.

Finally, among the control variables, the significance variable depends on the model used. Age is significant in Model 3 give a positive impact on ROA, but a negative impact on ROE. Size is insignificant in all models regardless of the dependent variable. Finally, leverage has a persistent positive impact when ROA is used as a measure of financial performance.

5 Conclusion

Given the crucial role performed by the audit committee in global corporate governance, regulators are requiring AC members to be financially literate with some accounting knowledge. Furthermore, AC is recommended to include more independent directors and to meet more frequently. Given the importance of AC, the aim of this study was to investigate the effect of ACE on the FP of MT companies from 2010 to 2017. Furthermore, the analysis was extended by analyzing whether SCQ moderates the association between AC effectiveness and financial performance. The findings of this study add to the literature and the understanding of the effect of audit committee attributes by demonstrating their impact on accounting performance. Moreover, the findings are consistent with earlier studies addressing developing countries and with the agency theory.

First, the descriptive statistics indicate that those companies have adopted some recommendations for the audit committee. Second, two individual attributes, mainly ACI and ACS positively affect their performance. Third, meeting frequency has no significant impact on their financial performance. On an aggregate level, audit committee effectiveness positively contributes to better financial performance. Finally, SCQ significantly moderates the relationship between ACE and FP. The findings, thus, provide empirical evidence that AC enhances financial performance, and such a relationship is being

moderated by SCQ. Additionally, the findings imply that AC independence and size are promoters of performance and that ACE-SCQ interaction fosters greater performance.

Thus, our findings have significant implications for managers and regulators. First, managers can use the results of this study to make proper changes to AC features to enhance company performance, such as increasing AC size and AC independence. Second, policymakers can have a better understanding of the attributes of AC that could be incorporated into the new policy to improve companies' performance. Third, regulators in other countries might benefit in looking at some ways to improve the efficiency of AC, which will ultimately improve financial performance. Finally, our findings contribute substantially to the importance of AC as a reinforcer of corporate governance practices and a solution to the agency problems in Takaful companies in the Malaysian context.

This research provides a clear vision of how audit committee effectiveness affects the financial performance of MT companies. However, this paper has some limitations. First, it is limited to Takaful companies in Malaysia. Further studies may focus on other contexts (different countries, different industries, different economic cycles, and different sample sizes) and may compare Malaysia and Gulf Cooperation Council countries in the Takaful industry. Second, the study is also limited to 8 years. Thus, future research may consider extending the study to encompass more years to obtain a comprehensive understanding of the industry, more so because COVID-19 has had a tremendous adverse impact on national economies. Third, this study is also limited in constraining some of the features of AC (chairman specialization, independence, size, and meeting), thus future works should investigate how other AC characteristics can impact the financial performance of those companies. Future research could also analyze interactions between external and internal corporate governance mechanisms and their influence on FP. Fourth, this study is limited in its focus on only ROA and ROE as a measure of performance. Future studies can use different proxies for financial performance, such as non-performing loans (NPL), Profit Margin (PM), Return on Investment (ROI), or Tobin's Q (TQ), to provide a more thorough understanding of corporate performance. Fifth, this study adopts a panel data approach which is useful for analyzing longitudinal data. However, this approach does not capture unique behaviors. Therefore, future studies may use interviews or questionnaires to explore this issue from other perspectives. Finally, this study could test for new moderating or mediating variables that could affect the AC-FP link.

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The Impact of Job Stressors and Burnout on Internal Auditors' Satisfaction

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Abstract. The present study explores the antecedents and outcomes of burnout phenomenon among internal auditors. The use of more inclusive group of burnout predictors has expanded the examination of burnout in accounting and auditing areas. Based on past relevant works, the links present among burnout, attitude, and behaviour were predicted, and then, the links were tested using the survey outcomes obtained from 187 internal auditors in Jordan. The model of structural equation shows outcomes that correspond to the conceptual model proposed towards the data. Notably, role overload and neuroticism were found as important predictors of burnout among internal auditors. Also, job satisfaction was found to be the direct outcome of burnout. Hence, the links presented in the literature especially in terms of those reported to exist between the antecedents of burnout and the outcomes are affirmed and expanded in this study. Not only that, the important role of burnout as a mediating aspect in contributing to the links between stressors and job satisfaction is also affirmed.

Keywords: Burnout · Role overload · Neuroticism · Job satisfaction · Internal auditors

1 Introduction

Corresponding to the rapidly developing explorations on the subject of stress and its injurious effects to the private life and career of a person, the phenomenon of burnout is now a major concern in various professional fields. The notion of burnout was initially discussed in the American context, but now, burnout is a global concern. Similarly, researchers and practitioners, Schaufeli, Leiter [1] indicated that burnout has been recognised as a social problem that cannot be ignored; it needs to be resolved.

Burnout has been evidenced as vital in justifying various behaviours and attitudes in highly stressful working environment. Given the importance of internal auditing to improve audit quality has put pressure on internal auditors which may leads to burnout. [2] are among those who examined burnout in working environment, but, in the context

of burnout among internal auditors, among the few studies include [3–5]. For instance, Kalbers and Fogarty [6] suggested that internal auditing may be vulnerable to burnout of high level. In a study by [7], several proactive measures for facilitating burnout prevention among internal auditors were discussed.

In Al Shbail, Salleh [4], the authors reported that the adverse impacts of burnout on employees include dissatisfaction, absenteeism, turnover, and decreased productivity, which incur high costs to organization. For this reason, burnout becomes the focal point of the present study. Another factor motivating the present study is the importance of understanding burnout role in the context of internal auditing as this could facilitate management in reducing the harmful effects of burnout Understanding and addressing the harmful effects of burnout may help managers to maintain internal auditors' satisfaction.

Based on the past findings, burnout is evidently a multifaceted construct that is primarily related to factors of workplace. However, as reported by some (e.g., Alarcon, Eschleman [8]), the effect of personality factors on burnout need to be examined further. Meanwhile, the present study view personality traits, especially neuroticism to be antecedents of job burnout. A model is also constructed in this study. It includes crucial constituents to a progressing psychosocial environment of internal auditing during dramatic change. The model is then tested.

The next section will discuss the conceptual model and the hypotheses formation. Then, the methodology chosen will presented in the ensuing section, followed by a section highlighting the outcomes obtained. The ending section presents the limitations of the study.

2   Conceptual Model and Hypothesis Development

The present study applies the model of job stress proposed in Parker and DeCotiis [9]. Here, the scrutiny of the impact of stressors on job burnout and job satisfaction are two levels of outcome. Accordingly, grounded upon the models proposed in Fogarty, Singh [10] burnout becomes the mediating variable to the stressors among auditors. In early role stress studies, Smith, Davy [11] reported that they were mostly focusing on the direct connexions between job-related stressors (i.e., role overload) and key outcomes such job satisfaction and performance. However, the authors also reported the inconsistency of the outcomes, which, according to Fogarty, Singh [10] is related to misspecification bias from the removal of key variables that connect role stressors with job outcomes. Hence, to refine the paradigm of stress among auditors and accountants, there have been unrelenting efforts in integrating the key mediator variables including the mediator of burnout, since the last two decades.

Accordingly, the model proposed to supersede the job stress model alongside its summarized important proposed hypotheses can be viewed in Fig. 1. As can be observed, the mediator constructs encompass the predictor and the criterion variables as well, with the prediction that they convey the impact of the constructs of exogenous stressor to job satisfaction. The proposed model is akin to the models proposed in Jones, Norman [12] and in Smith and Emerson [13]. As such, the expectation is that through their impact on burnout, stressors would have significant effect on job satisfaction. Furthermore, the mediation impacts will eradicate all the direct influences.
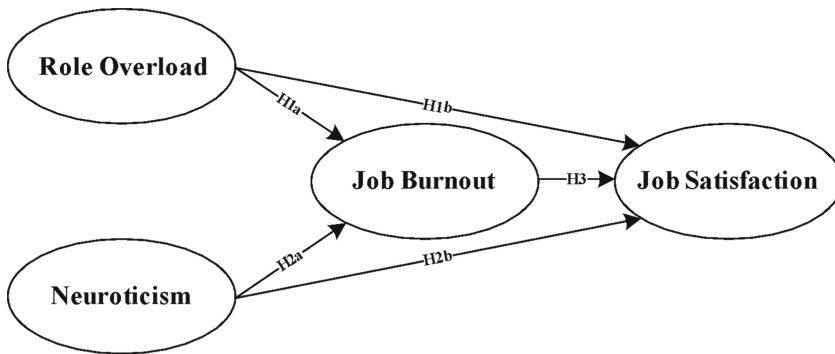
Fig. 1. Conceptual model of the antecedents and consequences of internal auditor burnout.

2.1   Role Overload, Job Burnout and Job Satisfaction

Considering that internal auditing often requires substantial workloads and myriads of deadlines, Larson [14] regarded this occupation as stressful. Apart from that, internal auditors often are required to make frequent and lengthy business travels and consistently perform their task at countless work locations [15], which can further exacerbate their job burnout as all these requirements can cause these auditors to experience role overload. In fact, role overload has been found to lead to burnout. Leiter and Maslach [16] appositely reported that employees who feel that they are overworked appear to have less time and resources to properly execute their assigned tasks.

The burnout level of internal auditors is predictable through role overload as has been demonstrated in Larson [3]. In addition, in studying internal audit, Guillot [7] found that among internal audit managers, the belief is that employees that have to deal with significant amount of workloads and somewhat unchanging daily tasks are inclined to experience burnout. In addition, role overload has been found to considerably affect job burnout, which implies the appropriateness of considering role overload as equally a burnout antecedent in forthcoming models for internal audit situation Kalbers and Fogarty [6]. As such, the following hypothesis will be tested:

H1a: There is a positive relationship between role overload and job burnout.

In the context of organizations, among the negative impacts of role overload include absenteeism, reduction in performance, overall firm profitability, job satisfaction, enthusiasm and commitment to the organization, and increased intent towards turnover [17]. Besides that, several studies (e.g., Persellin, Schmidt [18]) reported a negative link between role overload and satisfaction on the job. In Larson [3], a negative link was found to exist between role overload and job dissatisfaction, and the link was particularly significant in the context of internal auditors. Relevantly, the internal audit departments are always demanded to maintain low operational costs, which, according to Larson [14] is compelling the auditor to accomplish more in a lesser amount of time, with resources that are limited. As such, the following hypothesis is proposed:

H1b: There is a negative relationship between role overload and job satisfaction.

2.2 Neuroticism, Job Burnout and Job Satisfaction

Theories of burnout initially included the work-related stressors. Then, work-related and individual factors which can lead to stress and burnout, were added [19]. However, in the scrutiny of internal auditors, this approach is yet to be applied.

Personality is a factor of individual disposition, and it encompasses the individual psychological processes pattern that originates from individual characteristics. Accordingly, the patterns of emotions, behaviours, feelings, and thought differ based on individuals [20], and for this reason, a person has a unique personality. This uniqueness contributes to the establishment of thoughts, motivations, and behaviours of individuals in diverse environments and circumstances [21].

The factors of personality are all conceptually attributed to the Big-5. Further, in the extant literature, the established hypotheses relating to neuroticism were underpinned by 2 main reasons. The first reason is the found evidence that neuroticism predicts the work-related outcomes (e.g., career deviance) [22], and for this reason, [23] indicated the likelihood of this variable in affecting the coping resources in terms of their obtainability and use. The second reason is the connection that exists between neuroticism and negative health outcomes [24]. Additionally, Schaufeli and Enzmann [25] reported the neuroticism personality trait as a strong burnout predictor, while You, Huang [26] found the connection between neuroticism and depression, which contains a job burnout characteristic.

In explaining a neuroticism trait, Watson and Clark [27] stated that it encompasses the temperament of a person to interpret events in a negative manner, and for this reason, McCrae and John [28] indicated the potential of neuroticism in causing job burnout. This is because a person with high level of neuroticism appears to be pessimistic and view the world as threatening. Further, a positive link between the neuroticism personality trait and job burnout was also reported [5, 8]. As such, the present study presents the following hypothesis:

H2a: Neuroticism is positively related to job burnout.

Certain personality traits have been found to have linkage to the level of job satisfaction. For example, Staw and Ross [29] concluded that those with positive attitudes are more inclined to experience higher job satisfaction level. Further, in exploring the traits of Big 5 personality, Lapierre and Hackett [30] reported the trait of conscientiousness as the second strongest link to job satisfaction, after neuroticism.

Rusting and Larsen [31] found that people with neuroticism personality trait are more inclined to demonstrate negative attitudes concerning the job, implying low job satisfaction level. Additionally, as reported in Bruk-Lee, Khoury [32], a neurotic person appears to be less inclined to be pleased with his/her current job. Apart from that, Tokar and Subich [33] found neuroticism as a significant predictor of job dissatisfaction level. Also, among internal auditors, Obeid, Salleh [34] found a strong and negative link between neuroticism personality and job satisfaction. Therefore, it is expected that

internal auditors that are highly neurotic are expected to have low satisfaction level. Hence, the present study presents the following hypothesis:

H2b: Neuroticism is negatively related to job satisfaction.

2.3   Job Burnout and Job Satisfaction

Job satisfaction relates to how a person feels or the person's state of mind concerning the nature of his/her work, and for internal auditors, satisfaction of towards their jobs is evidently a crucial matter. Also, considering that the job nature of internal auditors requires independence, job satisfaction becomes an important variable to understand the behaviour and attitudes of internal auditors. Relevantly, Fogarty and Kalbers [35] suggested the addition of job satisfaction inside the burnout conceptual model resulting from the situations and environment of the job of internal auditor, and as an antecedent variable with consequences including organizational commitment, job performance and also, the intent to abandon the organization, as can be observed in Fig. 1.

Past studies on job burnout demonstrate negative correlations of job burnout dimensions with job satisfaction (e.g., Fogarty, Singh [10]), and it was found that the decrease in the level of job burnout leads to the increase in the level of satisfaction. Hence, the hypothesis below is proposed:

H3: Job burnout negatively affects job satisfaction.

2.4   Mediating Role of Burnout

The key mediating role of burnout has been supported in several conceptual and empirical arguments. In this regard, Fogarty, Singh [10] reported the sufficiency of conceptual evidence concerning the conceivable equivocal effects imparted by role stressors and the unequivocal impact of burnout on job outcomes, which has linkage to the law of Yerkes-Dodson (introduced in 1908). In particular, the law suggests that at an "intermediate" level, role stressors may positively and functionally affect job outcomes, while at a "low" or "high" level, role stressors may negatively and dysfunctionally affect job outcomes [36]. It is therefore not possible to predict the effect of role stressors on job outcomes in a random sample, considering that the perceived level of role stressors may be different across persons with "low", "intermediate" and "high" level. Contrariwise, the effect of burnout is unequivocally dysfunctional. Furthermore, when distress is present, which means the presence of "high" or "low" role stressors, the person would feel overwhelmed, resulting in emotional exhaustion, decreased personal accomplishment, and depersonalization. It is also possible for the job outcomes to be dysfunctionally impacted as a consequence. In this regard, the dysfunctional impacts of a "distressful" role environment is mediated by burnout.

The available literature highlighted job stressors as among the key factors associated with job dissatisfaction and job burnout. In the context of auditors, their performance may be impacted by both job dissatisfaction and burnout. As noted from a study of Smith, Emerson [37], who surveyed external auditors found that burnout fully mediate

the relations between job stressors and job outcomes. However, the extent and dimensions of this overlapping impact need to be explored more in the context of internal auditors. Meanwhile, job satisfaction and burnout have been found to have a negative link. Additionally, a question arises as to whether job satisfaction is in fact job burnout's antecedent or consequence. In addition, Cherniss [38] proposed a causal order of relevant variables, as follows:

work-setting characteristics → work stressors → burnout → job dissatisfaction

Further, in Koeske and Koeske [39], the links among relevant variables were proposed, as follows:

work stressors → stress → burnout → job dissatisfaction

Further, Wang, Zheng [40] mentioned the usability of both models above as a base for the conceptualization and testing of burnout and job dissatisfaction particularly with respect to their process. Hence, the hypotheses below are proposed:

H4a: Job burnout mediates the relationship between role overload and job satisfaction.
H4b: Job burnout mediates the relationship between neuroticism and job satisfaction.

3 Method

3.1 Sample and Procedure

The present study employed 385 internal auditors from Jordanian listed companies. These internal auditors were representatives of several sectors, including industrial, service and financial sectors. However, from these 385 respondents, only 187 gave beneficial responses.

In terms of the demographics distribution of the sample, a large portion were: male (92.5%), not officially qualified internal auditor (72.7%), had significant amount of working experience that is between 11 and 15 years (73.7%), and 43.3% were hired as an internal audit staff, In regards to the types of companies of the respondents, 31% of respondents were hired by industrial companies, roughly 39% were hired by service companies, and 30% of respondents were hired by financial companies.

3.2 Measurements

Job Burnout. The Burnout Measure (BM; [41]), comprising 21 items, was used in gauging this construct. The breakdown of BM is as such: 17 items with negative wording and 4 items with positive wording. For measurement purpose, a 7-point scale (1 = "never" to 7 = "always") was provided with the items.

Job Satisfaction. An overall satisfaction subscale comprising three items from Obeid, Salleh [34] was used in the measurement of this construct. For measurement purpose, a 7-point scale (1 = "strongly disagree" to 7 = "strongly agree") was provided with the items.

Role Overload. A total of 3 items from Beehr, Walsh [42] were employed in this study to measure this construct. For measurement purpose, a 7-point scale (1 = "strongly disagree" to 7 = "strongly agree") was provided with the items. Similar items were also employed in Beehr, Jex [43]. In this study, the internal consistency of this construct was at 0.893, which is deemed acceptable by Sekaran and Bougie [44].

Neuroticism. A total of 10 item of the neuroticism scale from the revised NEO Personality Inventory (NEO-PI-R) Costa and McCrae [45] were employed in this study to measure this construct. The reliability level of this measure is deemed as acceptable (Cronbach's α = 0.906).

4   Results

In testing the proposed relationship, this study employed the structural equation modelling (SEM) that includes the partial least squares (PLS-SEM) technique. PLS-SEM involves the application of a wide-ranging multivariate statistical analysis approach, and as mentioned in several studies (e.g., [46–49]), PLS-SEM can concurrently examine the links among all of the variables inside the conceptual model, together with the components of measurement and structure.

The PLS-SEM approach is favoured over others such as the covariance-based statistics, owing to several factors [50, 51]. The first factor relates to the nature of this study, that is, this study is exploratory study, meaning that the relationship between neuroticism personality trait with job burnout and job satisfaction will be affirmed in the context of audit. In this regard, the discovery of a new interconnection is possible. Another factor is the non-requirement of normally distributed data when using PLS, as PLS is a nonparametric method [50].

Furthermore, PLS-SEM is increasingly handy in the delineation of multifaceted behaviour research [52]. The next factor is the sufficiency of the returned questionnaires (187 returned questionnaires out of 385) for the execution of the PLS-SEM analysis, whereas a threshold of 100 samples was documented in past research [53]. A sample containing 187 responses is therefore fitting for this study.

There are two stages in the execution of PLS-SEM analysis, and in the first stage, the researchers will determine the measures' reliability and validity. These measures are used as the operationalization of the supporting constructs, namely the measurement model. Then, in the ensuing stage (the second stage), the researcher construes the resulting model coefficients (the structural model). The next sections present the results and the main statistics for both stages.

4.1   Measurement Model

In order to provide assurance that the items in this study measured the latent variables, tests of reliability, discriminant validity, and convergent validity were carried out. In this regard, the outcomes are showing that the models of measurement all fulfil the minimum requirements, as can be observed in both Table 1 and Table 2. In this study,

a cut-off value of 0.70 is deemed as significant for factor loadings (t-value > 1.96 and p-value < 0.05). Accordingly, the study items all obtained loadings that are higher than 0.70, and appositely, Hair, Hult [50] stated that higher level of outer loading factors shows indicator reliability of higher level. Furthermore, Cronbach's alpha and Composite Reliability employed in this study allow Dijkstra-Henseler's rho (rho$_A$) to generate estimation of data consistency with improved accuracy. Also, the values acquired show that the reliability of the items loaded on all constructs, as construed in [54]. Meanwhile, the average variance extracted (AVE) values are all bigger than the threshold of 0.50, and such values are construed by Henseler [51] as denoting the convergent validity of the construct measures.

Table 1. Measurement model.

Construct	Items	Loadings	Cronbach's Alpha	CR	rho$_A$	AVE
Role overload	RO-1	0.933	0.893	0.934	0.900	0.824
	RO-2	0.921				
	RO-3	0.869				
Neuroticism	NP-1	0.846	0.906	0.930	0.910	0.728
	NP-2	0.827				
	NP-3	0.845				
	NP-7	0.895				
	NP-9	0.853				
Job burnout	JB-1	0.840	0.891	0.915	0.893	0.605
	JB-4	0.745				
	JB-8	0.783				
	JB-11	0.798				
	JB-12	0.793				
	JB-14	0.735				
	JB-17	0.746				
Job satisfaction	JS-1	0.900	0.845	0.907	0.846	0.764
	JS-2	0.881				
	JS-3	0.840				

Two criteria were employed in this study, in the development of the discriminant validity in the reflective models of measurement. In this regard, Hair, Hult [50] proposed the application of the Fornell-Larcker criterion considering that it is the most common approach used in the evaluation of discriminant validity. For the same purpose, HTMT can also be employed [55]. Consequently, the Fornell-Larcker Criterion assessment results alongside the square root of the constructs can be referred in Table 2. As can be viewed, the AVE square root in bold is higher when compared to its highest construct's correlation with any other constructs. Hence, this procedure is carried out to ascertain if or not the examined variables should be placed in groups. Accordingly, using the guidance by Henseler, Hubona [52] to evaluate the outcomes, the construct demonstrates discriminant validity.

The use of Heterotrait-monotrait (HTMT) ratio of correlations established in Henseler, Ringle [55] is also common in the evaluation of discriminant validity. HTMT can be used as a substitute for the conventional discriminant validity. The mechanism of HTMT actually follows the multitrait-multimethod matrix. As proposed in Henseler, Hubona [52], the achieved HTMT value that is significantly lower than 1.00 denotes the affirmation of the discriminant validity. Other traditional methods such as the Fornell-Larcker's [56] criterion have been linked to several probable weaknesses, and for this

reason, discriminant validity needs to be checked using several methods [52]. Accordingly, Table 2 displays the HTMT criterion Results, and the results are showing that each latent variable shows the HTMT criterion that is lower than 0.85, implying the affirmation of discriminant validity [57, 58].

Table 2. Discriminant validity based on Fornell-Larcker and HTMT criteria

	Fornell-Larcker criterion				HTMT criterion			
Construct	1	2	3	4	1	2	3	4
Job burnout	**0.778**				-			
Job satisfaction	-0.650	**0.874**			0.747	-		
Neuroticism personality trait	0.590	-0.583	**0.853**		0.654	0.662	-	
Role overload	0.460	-0.271	0.266	**0.908**	0.515	0.310	0.294	-

4.2 Structural Model

In this study, the evaluation is made to the structural model by analysing the model's predictive abilities, and the links that exist between the constructs. This evaluation is grounded upon the collinearity assessment; the R^2 values (variance explained); the algebraic sign, the magnitude and significance of the structural path coefficients; the f^2 effect size; in addition to the Q^2 (cross-validated redundancy) test for predictive relevance [59]. Additionally, bootstrapping was employed to facilitate the statistical significance evaluation of the path coefficients. Through bootstrapping, standard errors and t-statistics are formed.

Furthermore, there are 5 direct relationships hypothesized in this study, and 4 appear to demonstrate significance. In achieving the exact outcome, Henseler, Hubona [52] recommended the application of percentile bootstrapping to establish a confidence interval of 95%. In this regard, at a confidence level of 95%, an interval comprising no zero denotes a structural path coefficient that is significantly different from zero [60]. As such, the significance of the path coefficient is affirmed. Such outcomes support the following Hypotheses: Hypothesis 1a, Hypotheses 2a and 2b and Hypothesis 3.

For the relationship of the structural model, the results demonstrate the considerable R^2 values obtained for job burnout and job satisfaction at respectively 0.599 and 0.495. As explained in Sarstedt, Ringle [61], R^2 values lend support to the in-sample predictive power of the model. The effect sizes f^2 for role overload and neuroticism personality on job burnout denotes a small and important effect size, at correspondingly 0.107 and 0.123. A small effect of neuroticism personality (0.091) on job satisfaction was found, in addition to very small effect size of role overload (0.002), also on job satisfaction. As for job burnout, it appears to impart a medium effect size of 0.153 on job satisfaction. Meanwhile, for the endogenous variables, blindfolding was used in the model evaluation, with the index of cross-validated redundancy (Q^2), as also demonstrated in Chin [62] in the scrutiny of a theoretical/structural model in terms of its predictive relevance. In construing the values of Q^2, [63] explained that those that are higher than zero imply the predictive relevance of the model. In this study, the structural model was found to have sufficient predictive relevance for each endogenous construct. Table 3 provides the details.

Table 3. Hypotheses verification (direct relationship)

Structural path	Path coefficient and (T-Statistics)	Effect size (f^2)	Percentile 95% confidence intervals		P-Values (0.05)	Conclusion
			95% LL	95% UL		
H1a: RO -> JB	*0.222 (3.763)*	*0.107*	*(0.110 ; 0.342)*		*0.000*	*Supported*
H1b: RO -> JS	*0.039 (0.635)*	*0.002*	*(-0.078 ; 0.166)*		*0.525*	*Not supported*
H2a: NP -> JB	*0.269 (4.136)*	*0.123*	*(0.140 ; 0.393)*		*0.000*	*Supported*
H2b: NP -> JS	*-0.275 (3.593)*	*0.091*	*(-0.422 ; -0.126)*		*0.000*	*Supported*
H3: JB -> JS	*-0.439(5.008)*	*0.153*	*(-0.603 ; -0. 263)*		*0.000*	*Supported*

Notes: *NP = Neuroticism personality, RO = Role overload, JB = Job burnout, JS= Job satisfaction.*

The results provide affirmation on the expected influence of role overload on job burnout. Expressly, role overload and burnout are significantly and positively linked (0.222; p-value of < 0.001). From the bootstrapping confidence intervals, the outcomes of analysis were 0.111 and 0.342, denoting support to hypothesis 1a. In terms of Hypothesis 1b in ascertaining the impact of role overload on job satisfaction, the outcomes demonstrate no impact ($\beta = 0.039$, p-value > 0.05), and therefore, Hypothesis 1b is not affirmed.

As can be observed in Table 3, the results fully affirm the effect of neuroticism personality as an added exogenous variable within the role stress model. Expressly, the standardized path coefficients as can be viewed in the table denote a significant positive link between neuroticism and burnout ($\beta = 0.269$, p-value < 0.001) and a t-value of 4.136. Additionally, there is no zero in the results of the bootstrap method (0.140; 0.393), lending support to Hypothesis 2a. Further, negative linkage between neuroticism and job satisfaction ($\beta = -0.275$, t = 3.593) can be observed from the table, lending support to Hypothesis 2b.

In addition, a strong negative link between burnout and job satisfaction can be observed in Table 3. According, the obtained value of path coefficient (β) was -0.439, with a highly significant t-value of 5.008 at p < 0.001. For Hypothesis 3, the bootstrapping method also contains no zero in the confidence interval (-0.603; -0.263). Hence, this hypothesis is supported.

Following the recommendation of Hair, Hult [50], the mediation analysis and bootstrapping using 5000 bootstrap samples were carried out in this study. Specifically, meditation analysis encompasses a mediating variable with the presumption of an intermediate role in the relationship between the independent and dependent variables. Accordingly, in PLS-SEM, Nitzl [64] described the two steps of mediation analysis as follows: In the first step, with the use of the bootstrap routines, the researcher determines the significance of the indirect effects, and the significant indirect effect in this step affirms the mediating effect. In the second step, the researcher determines the mediation type - full or partial. In this study, both steps were used.

As can be observed in the proposed model, job burnout plays the mediating role in the link between stressors and job satisfaction. As shown in Table 4, a significant indirect effect of role overload on job satisfaction (IE = -0.098 and t-value = 2.701) at p < 0.05, in addition to the indirect significant effect of neuroticism personality on job satisfaction (IE = -0.118 and t-value = 3.510) at p < 0.05, with an agreeable interval

Table 4. Test of mediation by bootstrapping approach

Hypothesis	(a)	(b)	(a*b)		Percentile 95% confidence intervals		VAF	Conclusion
	Path coeff.	Path coeff.	Path coeff.	t-value	95% LL	95% UL		
RO->JB->JS	0.222	-0.439	-0.098	2.701*	(-0.176 ; -0.036)		0.89	Full mediator
NP->JB->JS	0.269	-0.439	-0.118	3.510*	(-0.186 ; -0.056)		0.30	Partial mediator

Notes: *p < 0.05, NP = Neuroticism personality, RO = Role overload, JB = Job burnout, JS= Job satisfaction.

confidence $(-0.186, -0.056)$, can similarly be viewed from the table. Additionally, both the direct and indirect effects of neuroticism on job satisfaction seem significant, which means that job burnout partially mediates the link between these two constructs [50].

The construal of mediation value has been provided in Hair, Hult [50] as follows: VAF less than 20% denotes almost zero mediation, VAF higher than 20% and lower than 80% implies a usual partial mediation, and VAF higher than 80% implies full mediation. The values of VAF acquired in this study are greater than 20% and lower than 80%, which means that job burnout is evidently a partial mediator between neuroticism personality and job satisfaction, and is suggestively a full mediator between role overload and job satisfaction.

5 Discussion and Conclusion

In testing the proposed relationship, this study employed the structural equation modelling (SEM) that includes the partial least squares (PLS-SEM) technique. PLS-SEM involves the application of a wide-ranging multivariate statistical analysis approach, and as mentioned in several studies (e.g., [46–49]), PLS-SEM can concurrently examine the links among all of the variables inside the conceptual model, together with the components of measurement and structure.

The present study examined the main and interacting effects of role stressors on burnout and job satisfaction among internal auditors, and the achieved results on the main effects are consistent with the theoretical framework of burnout that several past studies [13, 65] have reported. Role overload and neuroticism are deemed as important antecedents of burnout in this study. These antecedents will consequently predict job satisfaction among internal auditors. This study finds the positive correlation of role overload and neuroticism with job burnout. Contrariwise, neuroticism is the only constructs with significant direct correlation with job satisfaction. Meanwhile, job burnout is significantly and negatively correlated with job satisfaction, and this construct also fully mediated the link between role role overload and job satisfaction, and partially mediated the link between neuroticism and job satisfaction. Hence, the links presented in the literature especially in terms of those reported to exist between the antecedents of burnout and the outcomes are affirmed and expanded in this study. Not only that, the important role of burnout as a mediating aspect in contributing to the links between stressors and job satisfaction is also affirmed.

Considering that job stressors may lead to high burnout and low satisfaction, managers of internal audit need to be aware of the job stressors present in the work of an

internal auditor and take the right action to reduce them, which in turns reduces the risk of staff dysfunctional behaviours and poor audit quality. It is in fact impossible to avoid these stressors in, but if management of companies take the actions needed to manage the burnout and satisfaction level among these auditors, thestressors can be reduced.

Notably, the present study is among the early ones that explore personality traits and its link with burnout and satisfaction within the circumstance of internal audit. Hence, with these outcomes under consideration, Ozer and Benet-Martinez [66] indicated the possibility of companies in reaping the benefit from reviewing the personality profiles of prospective job applicants prior to selecting them.

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
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Approaches to Land Zoning on the Basis of Sustainable Territory Development

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Abstract. One of the basic approaches to land use is their differentiated (separate) use, which is implemented through the division of land by main purpose into categories and the introduction of land zoning. Under the purpose of a particular land is proposed to understand the method of its operation (use) for a specific purpose in accordance with the zoning of land, as well as the legal regime of the relevant category of land. Land zoning is a way to ensure the use of land for various social needs, in which the purpose is set not for one land plot, but for a group of adjacent plots that form a functional zone. The owner of the land has the right to choose its intended use within the list of types of targeted land use established for a specific functional area. The zoning should be based on such classification features as the distribution of land by category, the suitability of land for use in economic sectors, the suitability of agricultural soils for growing crops, the composition of landscape complexes and land, the need for certain land in certain lands, legal status of lands.

Keywords: Land planning · Land zoning · Sustainable land use · Purpose of land · Land suitabilit

1 Introduction

The unique importance of land resources in the livelihood of society is determined by their effective management, especially when there is an intensive process of formation of land relations of a new type. The development of various forms of land ownership, the formation of a ranked economy necessitate the improvement of land management based on land zoning, the essence of which is their differentiated use. In Ukraine, the principle of land zoning is defined by the Land Code of Ukraine, which states that land zoning is carried out within settlements and sets requirements for permissible types

of development and other land use within individual zones in accordance with local building regulations [1].

As for lands outside settlements, the problems of their zoning in Ukraine still remain without due attention. Although in many countries of the world land zoning and determining on this basis their long-term use, taking into account a range of environmental, economic, social, historical and other factors has long been widely used in the practice of territorial development management. The experience of European countries shows the prospects and effectiveness of this.

Thus, Larsson Gerhard identified trends in addressing the issues of adaptation of the territory to difficult conditions and finding methods to ensure efficient use of land and other natural resources. During the twentieth century, we have witnessed the very active development of legal instruments for this purpose, aimed at managing spatial planning and implementation of plans in accordance with the chosen goals and policies [2].

Hall Thomas researched the planning process of large cities, the problems that arose during their development, and analyzed the impact of individual design decisions on the development of their development [3].

It is obvious that these studies are acceptable for the conditions of Ukraine.

The issue of land zoning in Ukraine is the subject of scientific works of domestic scientists such as Berladin O., Ibatullin Sh., Loik G., Martyn A., Novakovska I., Perovich L., Tretyak A. etc.

Berladin O. considers land zoning as a necessary condition for creating in Ukraine an effective mechanism for determining the distribution of land by their categories and types of land use within administrative-territorial entities and the implementation of effective state management of land use and protection [4].

Ibatullin Sh. Developed a conceptual model of mechanisms of land relations development in the context of balanced use, protection and reproduction of land resources as a component of spatial socio-economic development, and proved the need for innovative forms of land use management due to environmental constraints on land use [5].

Loik G. substantiated the methodology of functional zoning of territories when updating the master plans of villages in order to increase the efficiency of land use [6].

According to Martyn A., the introduction of organizational and methodological approaches to defining the boundaries of administrative-territorial units in Ukraine and land zoning can be an important prerequisite for streamlining the territorial organization of our state, the proper functioning of the tax system, the introduction of effective maintenance of state land cadastre and register of real property rights [7].

Novakovska I. considers the features of forecasting, planning and design of airports in the context of ecological and efficient land management. Scientists have proposed a detailed plan for zoning aerodromes and substantiated the principles of zoning the area around the aerodrome in combination with the aerodrome and land use [8]. In addition, Novakovskaya proved that satellite data is an important part of the information needed for sustainable use of nature, assessment of the impact of economic activities of ecosystems, identification of risks associated with loss of landscape and biotic diversity [9].

Perovych L. believes that cadastral zoning of lands is one of the important components of creating a cadastral system of Ukraine, which contributes to the creation of an attractive investment climate and identifying priority areas for sustainable economic development of territories. These issues are not fully resolved for lands outside settlements. The cadastral zoning of lands should take into account the requirements of European and international standards for classification and codification of the administrative-territorial structure of the state, types of economic activity [10].

Tretyak A. defined the conceptual basis of land zoning for the management of land resources outside settlements and substantiated the essence of land zoning as a land management process for the formation of the legal regime and land regulation of land use [11].

However, many aspects of the research problem have not been studied both methodologically and practically. Some of them are debatable and require further research and justification. Determining the criteria and methods of allocating territorial zones, their classification and impact on improving the management of land use and protection remains one of the important factors of environmentally friendly land use.

2 Methodology

The methodology of research of the problem of land zoning determines that the subject of research is the principles of land zoning through their differentiated use in market land relations. In the process of research the methods of abstract-logical, economic-statistical and monographic are used, with the help of which the zoning of lands for substantiation of ecologically safe land use is substantiated.

3 Results and Discussion

The implementation of a differentiated approach to land use is carried out through the division of land into categories according to the main purpose and the introduction of land zoning. Given that this activity, according to the requirements of the time, will be significantly adjusted, this approach will be a reliable basis for the introduction of new methods of land use management and protection.

We consider land as the basis on which economic activity takes place on the basis of the right to land, which complies with current legislation. In this regard, we highlight the following features of land use as an object of management:

– land is an integral part of natural resources;
– land is a product of nature, its fertility is determined to a greater extent human activity;
– land is used inseparably from other natural resources;
– rational use of land can be carried out only taking into account natural, political, economic, social and other conditions;
– land plots have qualitative and quantitative individual properties;
– land use should be differentiated, conditioned soil-climatic and territorial conditions;
– land use should be accompanied by an increase in its productive power.

The Land Fund of Ukraine suffers from many negative environmental and economic factors due to the unreasonableness of establishing targeted land use. The issue of improving the mechanism of land management needs to be addressed to increase the efficiency of land use and reproduction in the context of environmentally friendly land use [12].

The solution to the problem of land use optimization is seen in the improvement of methodological approaches to establishing targeted land use and determining the optimized structure of land for the use of zoning tools.

Ecological and economic model of sustainable development in land use of Ukraine in the medium term, which reflects the ratio of different groups and categories of land, in terms of regions are given in Table 1.

Implementation of its main methodological provisions will optimize the structure of Ukraine's land fund and form sustainable land use, which is a prerequisite for rational and productive use of land resources in various sectors of the economy and increase the production of environmentally friendly agricultural products.

As already mentioned, the problems of land zoning outside settlements have long been left without proper attention. Although land zoning (zoning) is a very good alternative to the system of land use. Zoning is a way to ensure the use of land for various social needs, in which the purpose is not set for one plot of land, but for a group of adjacent plots that form a functional area. Each functional zone has a specific generalized purpose, for each of which is established not one purpose, but a certain set of permissible land use. Therefore, the owner of the land has the right to choose its use within the list of types of land use, established for a specific functional area. The principles of land zoning should be the basis for land use in accordance with their intended purpose.

We offer the following basic principles for land zoning [13]:

– zoning should be carried out taking into account the landscape structure of the territory and the qualitative characteristics of the land;
– ensuring environmental priorities of land use;
– taking into account the existing buildings, transport and engineering infrastructure, as well as special elements of the urban structure within the settlement, ensuring its reconstruction and development on the basis of rational nature management and resource conservation.;
– definition for each territorial zone (subzone) of land management regulations, which establish a set of types and conditions of land use, as well as their permissible changes;
– establishment of the legal regime for each territorial zone in the calculation of its application equally to all land plots located within its boundaries;
– linking the boundaries of zones with the boundaries of major land holdings and land uses;
– the amount of territorial units allocated for zoning should correspond to the area of dismembered land in the individual type of zoning or volume in the case of typological zoning;
– the features on which the division of land is carried out (whether territorial units are classified) must be such that each point (territorial unit) falls into only one of the selected categories;
– the classification feature may vary from one degree of zoning to another.

Table 1. Ecological and economic model of sustainable development in land use of Ukraine in the medium term in terms of regions

No.	Region	Total area, thous. ha	Functional type of environment, thous. ha / %							
			agro-landscape		environment stabilizing					for construction and location of objects of branches of economy (building)
			total	of them arable	total	of them				
						forests and other forested lands	open wetlands	water		
1	Vinnytsia	2649,2	1925,0 / 72,7	1600,4 / 60,4	569,7 / 21,5	391,6 / 14,8	29,5 / 1,1	43,0 / 1,6	154,5 / 5,8
2.	Volyn	2014,4	952,6 / 47,3	561,9 / 27,9	889,8 / 44,2	727,6 / 27,9	116,8 / 5,8	45,4 / 2,3	172,0 / 8,5
3.	Dnepropetrovsk	3192,3	2427,8 / 76,1	2003,1 / 62,7	485,5 / 15,2	212,8 / 6,7	26,9 / 0,8	155,8 / 4,9	279,0 / 8,7
4.	Donetsk	2651,7	1913,5 / 72,2	1492,7 / 60,1	351,8 / 13,3	234,9 / 8,8	10,3 / 0,4	41,4 / 1,6	386,4 / 14,5
5.	Zhytomyr	2982,7	1535,5 / 51,5	997,5 / 33,4	1241,3 / 41,6	1110,5 / 37,2	82,5 / 2,8	48,3 / 1,6	205,9 / 6,9
6.	Transcarpathian	1275,3	430,0 / 33,7	169,2 / 13,3	742,6 / 58,2	723,3 / 56,7	1,0 / 0,1	18,3 / 1,4	102,7 / 8,1
7.	Zaporozhye	2718,3	1982,9 / 72,9	1588,9 / 58,5	393,6 / 14,5	141,9 / 5,2	6,7 / 0,2	172,0 / 6,3	341,8 / 12,6
8.	Ivano-Frankivsk	1392,7	588,9 / 42,3	323,7 / 23,2	742,1 / 53,3	643,8 / 46,2	2,6 / 0,2	23,7 / 1,7	61,7 / 4,4
9.	Kyiv	2812,1	1582,1 / 56,3	1237,7 / 44,0	963,7 / 34,3	740,5 / 26,3	49,4 / 0,2	173,8 / 6,2	266,3 / 9,4
10.	Kirovograd	2458,8	1955,0 / 79,5	1672,3 / 68,0	343,7 / 14,0	193,9 / 7,9	10,4 / 0,4	75,7 / 3,1	160,1 / 6,5
11.	Luhansk	2668,3	1832,9 / 68,7	1263,1 / 47,3	530,7 / 19,9	393,9 / 14,8	16,4 / 0,6	22,0 / 0,8	304,7 / 11,4
12.	Lviv	2183,1	1156,9 / 53,0	656,0 / 30,0	758,3 / 34,7	706,2 / 32,2	9,5 / 0,4	42,6 / 2,0	267,9 / 12,3
13.	Mykolayiv	2458,5	1935,5 / 78,7	1604,9 / 65,3	351,8 / 14,3	138,3 / 5,6	20,9 / 0,6	127,4 / 5,2	171,2 / 7,0
14.	Odessa	3331,3	2407,2 / 72,3	1825,4 / 54,8	732,3 / 22,0	246,7 / 7,4	72,8 / 2,2	211,5 / 6,3	191,8 / 5,7
15.	Poltava	2875,0	2064,1 / 71,8	1593,9 / 55,4	649,9 / 22,6	295,3 / 10,3	85,8 / 3,0	148,3 / 5,2	161,0 / 5,6
16.	Rivne	2005,1	843,3 / 42,1	503,9 / 25,1	984,2 / 49,1	834,7 / 41,6	107,3 / 5,4	42,2 / 2,1	177,6 / 8,8
17.	Sumy	2383,2	1655,8 / 69,5	1184,9 / 49,7	581,6 / 24,4	462,6 / 19,4	62,0 / 2,6	30,6 / 1,3	145,8 / 6,1
18.	Ternopil	1382,4	975,5 / 70,6	760,0 / 55,0	285,4 / 20,6	208,2 / 15,1	4,9 / 0,4	19,4 / 1,4	121,5 / 8,8
19.	Kharkiv	3141,8	2322,0 / 73,9	1834,4 / 58,4	650,5 / 20,7	439,0 / 14,0	30,6 / 1,0	60,3 / 1,9	169,3 / 5,4
20.	Kherson	2846,1	1842,6 / 64,7	1594,2 / 56,0	794,0 / 27,9	181,9 / 6,4	31,6 / 1,1	433,3 / 15,2	209,5 / 7,4
21.	Khmelnytsky	2062,9	1446,5 / 70,1	1102,3 / 53,4	441,1 / 21,4	298,4 / 14,5	21,1 / 1,0	39,8 / 1,9	175,3 / 8,5
22.	Cherkasy	2091,6	1344,0 / 64,3	1124,6 / 53,8	627,5 / 30,0	346,4 / 16,6	28,9 / 1,4	135,9 / 6,5	120,1 / 5,7
23.	Chernivtsi	809,6	401,6 / 49,6	250,2 / 30,9	344,6 / 42,6	261,0 / 32,2	1,2 / 0,1	18,5 / 2,3	63,4 / 7,8
24.	Chernihiv	3190,3	2050,0 / 64,3	1305,3 / 40,9	923,0 / 28,9	736,4 / 23,1	119,1 / 3,7	67,5 / 2,1	217,3 / 6,8
25.	Autonomous Republic of Crimea	2608,1	1693,9 / 64,9	1006,8 / 38,6	680,4 / 26,1	332,7 / 12,8	4,9 / 0,2	216,7 / 8,3	233,8 / 9,0
26.	Kyiv	83,6	5,0 / 6,0	0,5 / 0,6	43,4 / 51,9	36,4 / 43,5	0,3 / 0,4	6,7 / 8,0	35,2 / 42,1
27.	Sevastopol	86,4	26,1 / 30,2	10,3 / 11,9	37,2 / 43,1	36,3 / 42,0	- / -	0,9 / 1,0	23,1 / 26,7
	In general in Ukraine	60354,8	39296,2 / 65,1	29268,0 / 48,5	16139,7 / 26,8	11075,2 / 18,4	953,4 / 1,6	2421,0 / 4,0	4918,9 / 8,1

Therefore, the classification features of zoning are important. After all, the correct selection of certain features essentially determines the content and depth of land zoning. The proposed features of land zoning are: distribution of land by category, suitability of land for use in industries, suitability of agricultural land for growing crops, the composition of landscape complexes and land, the need for certain land in a particular land, legal status of lands, etc.

When zoning lands in Ukraine, it is proposed to single out the following system of taxonomic units: zones of the 1st order (groups of lands); zones of the 2nd order (types of lands); zones of the 3rd order (subtypes of lands); zones of the 4th order (types of lands); zones of the 5th order (land plots). In the practical implementation of the principle of land zoning, the proposed name of "zones of different order" can be clarified. For example, more well-established taxonomic unit names may be suggested: zone, province, county, subdistrict, district, subdistrict, locality, area, and so on.

Land zoning should be carried out in different detail, ie at the national, regional and local levels, with differences in tasks and mechanisms of practical application. Specific land zoning options depend on many factors: the existing land use system, the natural structure of landscapes, historical heritage, social goals, and so on.

In terms of land zoning are graphically indicated:

– boundaries of zones (groups of lands, categories, types of land use, etc.), defined for agricultural and forestry activities, housing and public buildings, nature reserves and environmental activities, recreational, health, historical, cultural and water activities, industry, transport, so-called communications, energy, defense and other purposes;
– boundaries of lands in respect of which restrictions on their use apply;
– boundaries of drinking water sources;
– boundaries of lands for soil dumps, earthworks and extraction of local minerals of local significance;
– land boundaries for measures to protect, preserve and improve the quality of the upper fertile soil layer, environmental protection and landscape;
– boundaries of especially valuable agricultural lands and forest lands.

In accordance with the proposed classification features, we conducted zoning of lands of Kyiv region which are shown in Fig. 1.

Zones of the 1st order (groups of lands): agro-landscape, environment-stabilizing and residential (building).

Thus, zoning of lands by types of land use is land management actions on the division of land into types and subtypes of land use depending on the ecological and economic suitability of land, the value of other natural resources - outside settlements and urban and natural resource value of land and other natural resources - within settlements.

Land zoning is most effective when a set of interrelated criteria and approaches is used to allocate zones. Naturally, the fewer zones and the larger the area of each, the better to achieve such a comprehensive and effective zoning.

When assessing the effectiveness of a land zoning system, it is proposed to use four main criteria: functional, environmental, economic, social (according to the interests of different groups). The last two criteria in practice can not always be clearly separated and then they are combined into a single socio-economic criterion.

From the standpoint of environmental efficiency in the same functional area should include areas similar in their environment-forming or environmental function. For example, the territory of one watershed, the habitat of certain, the most valuable in terms of conservation species and communities, etc., which is important for the preservation and implementation of the functions of an ecosystem. Sometimes such areas, which are part of a single ecosystem (for example, a watershed), are partially found outside the zone. These external areas form an area to which the community seeks to extend its influence and where it interacts with local and regional governments. According to the existing legislation, this zone should be granted the status of a protection zone.

In addition, the zoning of land (by their categories) outside the settlements should be understood as land management and legal actions, in addition to the division of land by type and subtype of land use within the ecological and economic suitability of land [14].

As for economic and social efficiency. The value of zoning of lands on which economic activity is carried out (or will be carried out in the future) is to combine different types of nature management and management without conflict (Table 2).

In order to make a profit is now used the principle of efficient use of land resources. Thus, the application of the principle of the most efficient use of land is provided - it is physically possible and economically feasible use of land and (or) land improvements in accordance with the law [15].

Constant fluctuations in land prices lead to other changes in land use due to constant pressure on existing land use and contribute to the reconstruction of property, which includes dilapidated buildings or structures. Prices remain highest in the most accessible areas around the city center and transport corridors, and the density in these areas continues to grow. In proportion to the development of the city, there is a tendency to increase land prices throughout the city (Table 3).

Therefore, it is important that zoning meets the requirements of efficiency in the load of interests and the nature of land use, ie based on existing boundaries of lands, settlements and administrative and economic entities.
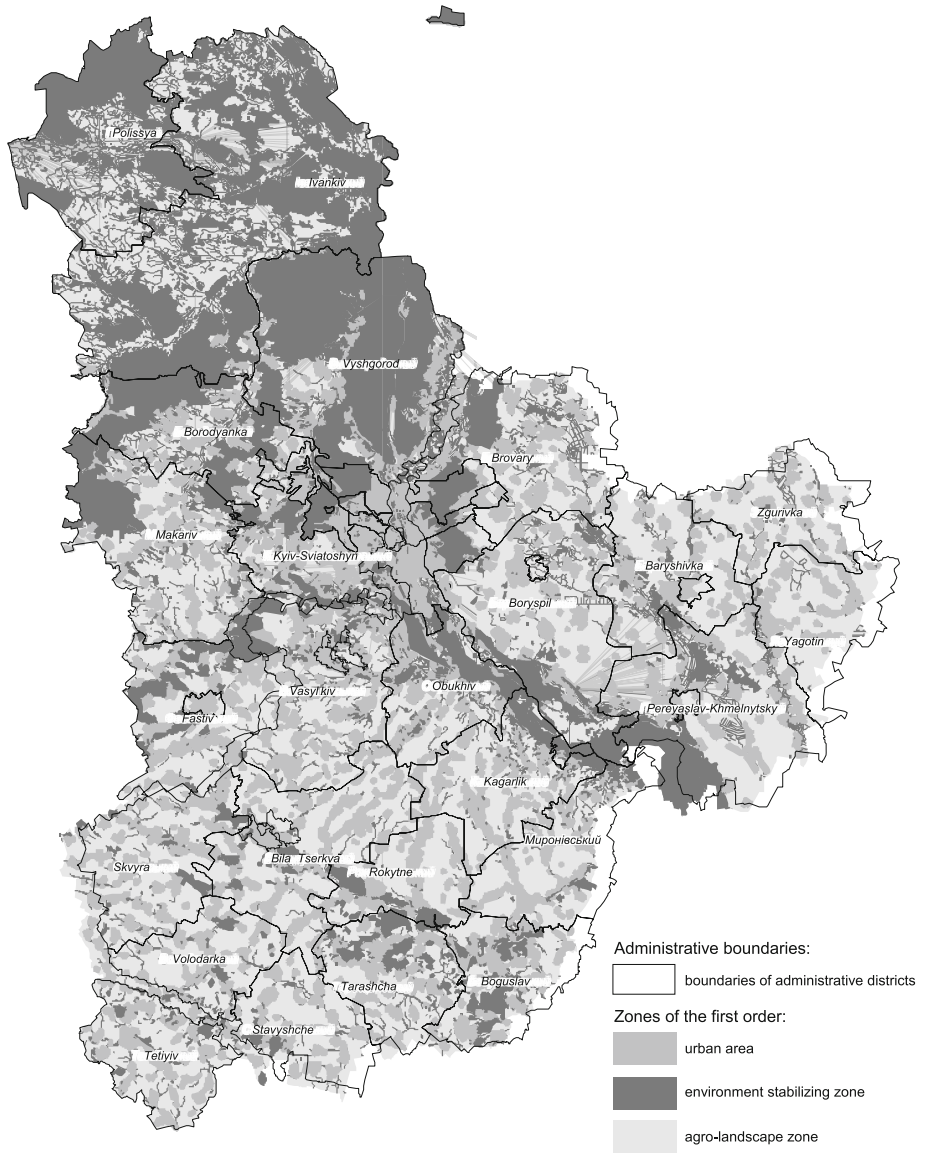
Fig. 1. Geoinformation modeling of zoning of the Kyiv region with the allocation of first-order zones

Table 2. Average annual income from land use by purpose*

Administrative-territorial unit and separate territory	Average annual income from the use of land for its intended purpose, UAH/ha							
	agricultural land	lands of nature reserves and other nature protection purposes	health-improving lands	recreational lands	lands of historical and cultural significance	forestry lands	water fund lands	land for industry, transport, communications, energy, defense and other purposes
1	2	3	4	5	6	7	8	9
Autonomous Republic of Crimea (except for the South, South-East and West coasts)	1070	5371	6171	5143	6243	7034	1246	13714
Southern coast of the Autonomous Republic of Crimea	2048	8057	13029	10857	6243	14069	2491	13714
South-Eastern coast of the Autonomous Republic of Crimea	1275	8057	7714	6429	6514	8441	1868	13714
West coast of the Autonomous Republic of Crimea	898	5371	9257	7714	6243	10551	1868	13714
Vinnytsia region	914	537	1371	1143	3257	4111	753	12000
Volyn region	715	4297	1543	1286	3529	3003	1016	14571
Dnipropetrovsk region	776	806	1029	857	1900	8286	446	16857
Donetsk region (except the Azov coast)	850	806	1200	1000	1357	9320	360	18571
Azov coast of Donetsk region	986	1074	2057	1714	1357	11184	539	18571
Zhytomyr region	560	3223	1714	1429	1900	2968	462	18000
Transcarpathian region	627	9131	51433	4286	3800	1278	1016	13429
Zaporozhye region (except the Azov coast)	818	537	1200	1000	2171	14337	905	16571
Azov coast of Zaporozhye region	825	269	2057	1714	1357	15771	1357	16571
Ivano-Frankivsk region (except mountain and foothills)	689	7520	2400	2000	4071	1399	736	13429
Mountain and foothills of Ivano-Frankivsk region	508	13429	4286	3571	4071	3497	883	13429
Kiev region	831	1343	1714	1429	2171	3629	755	16286
Kirovograd region	777	537	1029	857	1357	9091	723	10571
Luhansk region	607	537	1029	857	1086	6777	360	14857
Lviv region (except mountain and foothills)	615	1611	2400	2000	8414	2999	665	16571
Mountainous and foothill part of Lviv region	392	13429	4286	3571	8414	7498	798	16571
Mykolaiv region (except the Black Sea coast)	658	537	1886	1571	1086	13806	905	13429
Black Sea coast of the Nikolaev area	872	537	2571	2143	1086	15186	1357	13429

Table 2. (*continued*)

Administrative-territorial unit and separate territory	Average annual income from the use of land for its intended purpose, UAH/ha							
	agricultural land	lands of nature reserves and other nature protection purposes	health-improving lands	recreational lands	lands of historical and cultural significance	forestry lands	water fund lands	land for industry, transport, communications, energy, defense and other purposes
1	2	3	4	5	6	7	8	9
Odessa region (except the Black Sea coast)	728	1611	2057	1714	1086	8103	1163	25429
Black Sea coast of Odessa region	931	1880	2571	2143	1086	12154	1745	25429
Poltava	853	806	1543	1286	1629	7457	755	13143
Rivne region	746	1074	1714	1429	2171	2816	555	14000
Sumy region	690	537	1543	1286	2171	4013	679	12286
Ternopil region	783	1880	1886	1571	3529	4730	753	11714
Kharkiv region	767	806	1371	1143	1900	5251	562	18000
Kherson region (except the Black Sea and Azov coasts)	882	2149	2057	1714	1629	9560	905	14286
Black Sea and Azov coast of Kherson region	928	5371	2571	2143	1900	11472	1357	14286
Khmelnytsky region	879	537	1371	1143	3257	3981	753	12286
Cherkasy region	1012	537	1886	1571	2443	4297	985	12571
Chernivtsi region (except mountain and foothills)	886	2149	2229	1857	3257	1320	736	17429
Mountain and foothill part of Chernivtsi region	612	5371	4286	3571	3257	3301	883	17429
Chernihiv region	589	3223	2400	2000	3257	3199	616	13429
m. Kyiv	1151	9756	8979	7483	9441	21494	2822	46216
Sevastopol and administrative-territorial units that are part of it	2959	5371	6171	5143	6243	9200	850	19714

*Developed according to the datна adopted in accordance with the Methodology for determining the amount of damage caused by unauthorized occupation of land, use of land for other purposes, removal of soil cover (fertile soil layer) without special permission.

Table 3. Average annual income from the use of land for housing and public buildings by purpose according to the group of settlements by population*

Groups of settlements by population, thousand people	Average annual income from the target use of land for housing and public buildings, UAH/ha
To 0,2	4026
From 0,2 to 1	5636
From 1 to 3	7247
From 3 to 10	8052
From 10 to 20	12883
From 20 to 50	20130
From 50 to 100	24156
From 100 to 250	28182
From 250 to 500	32208
From 500 to 1000	40260
From 1000 and more	56364

*Developed according to the datнa adopted in accordance with the Methodology for determining the amount of damage caused by unauthorized occupation of land, use of land for other purposes, removal of soil cover (fertile soil layer) without special permission.

4   Conclusion

The main features of land use as an object of management are their belonging to natural resources, determining the effective fertility of human activities, inseparable from other natural resources use, the presence of land qualitative and quantitative individual properties, differentiated nature of use due to soil and climatic and territorial conditions, etc.

To solve the problem of land use optimization, it is necessary to improve methodological approaches to establishing targeted land use using land zoning tools.

The zoning should be based on such classification features as the distribution of land by category, the suitability of land for use in economic sectors, the suitability of agricultural soils for growing crops, the composition of landscape complexes and land, the need for certain land in certain lands, legal status of lands.

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Conceptualizing the Effects of Board of Directors' Characteristics on Earnings Management

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Abstract. This paper aims to conceptualize the association between board of directors' (BOD) characteristics and earnings management (EM). It then hypothesizes that political instability moderates the relationship between the two variables. The paper bridges the knowledge gap by proposing a conceptual framework related to BOD characteristics, EM, and political instability. This article reviews recent literature on CG and EM to understand how BOD characteristics may mitigate EM practices. Moreover, it elaborates the effect of political instability on the managers' engagement in EM. Evidence from prior studies suggests that BOD is an important part of the firm's structure and responsible for monitoring information quality in financial reports. It is argued that an effective BOD can reduce EM. During periods of intense political instability, managers are motivated to engage in high levels of EM to improve their companies' financial performance. This paper argues that a more effective BOD will deter the opportunistic behaviors of managers to engage in EM.

Keywords: Board of directors · Earnings management · Political instability

1 Introduction

The past decade has witnessed several financial crises and a series of financial scandals in large United States and European corporations, for instance Parmalat, Enron, HealthSouth, WorldCom and Xerox, Adelphia, Tyco, AIG, and Qwest. The main cause of these scandals is earnings management (EM) and the failure of corporate governance (CG) systems (Alareeni 2017). EM is one of the most critical challenges facing CG mechanisms. In turn, the mechanisms aim to mitigate EM and enhance the quality of financial reports (Jaggi and Tsui 2007).

The effectiveness of CG mechanisms in a firm can mitigate the opportunistic behaviors of managers to manipulate the reported earnings. On the other hand, weak CG mechanisms may lead to financial corruption (Alareeni 2017). As a result, CG quality is of significant import, especially after weak CG systems permitted global financial

scandals involving several large companies in the U.S., Canada, and Europe (Bremer and Elias 2007; Makhlouf et al. 2018; Aljadba et al. 2019; Aljadba et al. 2021).

The stock markets in developing countries still lack transparency and good governance. These markets face several difficulties in attracting more foreign and local investors (Bremer and Elias 2007). Therefore, the purpose of this study is to conceptualize the association between BOD characteristics and EM practices, as well as the moderation of political instability between the two variables.

2 Literature Review

Agency theory states that the separation of a company's stockholders and management creates the principal-agent relationship. In this case, the management is the agent in charge of fulfilling the interests of the stockholders (i.e., principals) (Jensen and Meckling 1976). The BOD is at the top level of the management pyramid. Its responsibilities include organizing and overseeing senior management, ensuring the quality of financial reports, and preventing the manipulation of accounting information (Boivie et al. 2016; Brandes et al. 2016; Koufopoulos 2018). The board fundamentally exists for the purposes of monitoring, appointing, terminating, and compensating management, as well as voting on strategic and important decisions to increase the stockholder's wealth (Baldenius et al. 2014).

The literature suggests that earnings are the most critical element for users of financial reports to make decisions about a corporation. Thus, executive management may have some incentive to practice EM (Pappas 2015). The terms earnings manipulation, modification, adjustment, and smoothing are some terminologies used in the literature to refer to EM. EM is the manipulation of financial statements by the executive managers. Wu (2014) explains that EM is the manipulation of financial reports, such as the statement of financial position and income statement. These alterations can mislead users of financial statements and other stakeholders.

Watts and Zimmerman (1978) suggest that managers who face adverse political and regulatory events are more likely to manipulate reported earnings. Previous studies have reported that firms are likely to report abnormal income and practice EM during periods of severe political crisis (Byard et al. 2007; Han and Wang 1998; Monem 2003). Palestine has continuously suffered from political and economic crises. Since 2000, the Palestinian economy has experienced a downwards trend. Additionally, its features are different from other developing and emerging economies (Hassan and Hijazi 2015; Hassan et al. 2016; Hassan 2016). There have been several legislative and economic reforms in Palestine in the past two decades, in particular the introduction of the Palestinian Code of Corporate Governance (PCCG) in 2009 (PCMA 2009). This code harmonizes between CG principles and CG-related legislations in Palestine (Talahmeh 2012). These unique institutional features justify the examination of the association between BOD characteristics and EM.

Palestine has seen its own financial scandals and crises that have affected the public and private sectors and investment climate. MAS (2016) documents that the devastating conflicts in the Gaza Strip in 2012 and 2014 resulted in the destruction of infrastructure, factories, and the productivity of the Palestinian economy, as well as increased political

risk in investment decisions. The World Bank (2010) reports that political instability is the most significant factor affecting the investment climate and doing business in West Bank and the Gaza Strip. Several studies have examined financial crisis and political issues and their effects on EM and firm performance (Attia et al. 2016; Harymawan and Nowland 2016; Hsiao et al. 2016; Mangena et al. 2012; Obaidat 2017), but this study is among the few to investigate political instability as a moderator between BOD characteristics and EM. This paper is divided into four sections: introduction, literature review, conceptual framework, and conclusion and expected findings.

3 Conceptual Framework

We develop the conceptual framework of this paper based on prior studies and the agency theory. Figure 1 illustrates the association between BOD characteristics and EM. This study employs EM as the dependent variable, while the independent variables are BOD characteristics (size, independence, frequency of meetings, financial expertise, and presence of the remuneration and governance committee (RGC)). Firm size, leverage, growth, industry, and external audit quality are employed as control variables.
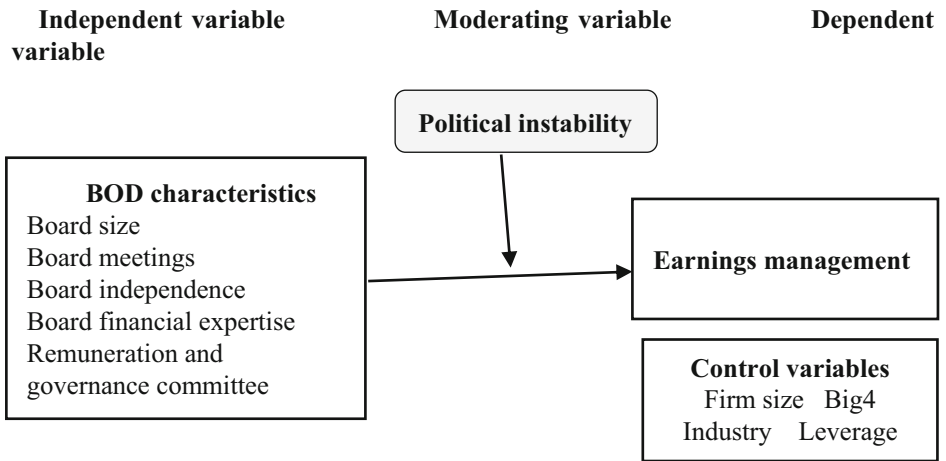
Fig. 1. Conceptual framework of the paper

3.1 BOD Size and EM

According to the agency theory, the difficulty and complexity to coordinate and make decisions in large BODs weaken their effectiveness, and in turn firm performance. (Fama and Jensen 1983). Masud et al. (2017) argue that BOD size reduces agency problems. Smaller boards may perform monitor management better, while larger boards may create more agency problems as they lose control over the firm's management. BOD size has been exmined by most CG literature (González and García-Meca 2014). Several studies

have found that larger BODs are associated with lower EM levels (Alves 2011; Bala 2015; Ebrahim 2007; Ghosh et al. 2010). In contrast, Waweru (2018) finds that BOD size is positively related to EM practices. Therefore, smaller boards are more effective compared to larger boards.

3.2 Frequency of Board Meetings and EM

The agency theory suggests that board directors have the chief role of monitoring management's actions and mitigate agency problems. These can be accomplished through regular meetings where the directors can discuss (Fama and Jensen 1983). Asmar et al. (2018) find that frequent meetings increase the board's effectiveness in carrying out its monitoring function, thereby upholding the stockholders' interests. Prior studies have found mixed results on the relationship between the meeting frequency of the board and EM practices, but most of them suggest that the relationship is negative. Therefore, more frequent meetings can mitigate EM (Almasarwah 2015; Anglin et al. 2013; Xie et al. 2003). On the other hand, Siam (2015) and Abbadi et al. (2016) have found a positive relationship between board meeting frequency and EM. However, Ngamchom (2015) find no significant relationship between the two variables in Thailand.

3.3 BOD Independence and EM

Several studies have found that outsider-dominated boards are more likely to provide better oversight over the firms' activities and mitigate EM (Cornett et al. 2008). According to the agency theory, a more independent board has more BOD ability to monitor the management effectively (Davidson et al. 2005). Accordingly, Fama (1980) states that firm performance weakens as insider directors increase. Some studies find a negative relationship between EM practices and the number of independent directors (Klein 2002; Peasnell et al. 2005; Xie et al. 2003). In addition, Idris et al. (2018) and Habbash and Alghamdi (2017) have found a negative relationship between board independence and EM.

3.4 BOD Financial Expertise and EM

BOD knowledge and experience are among the main determinants of BOD effectiveness. Fama and Jensen (1983) argue that board members should be knowledgeable so that they can carry out their duties perfectly. Board members particularly must have financial or accounting knowledge and experience. When directors are well-qualified in financial issues, they can understand financial matters easily, in particular those related to the financial reports. Xie et al. (2003) have found that firms whose board directors come from a financial and accounting background are less likely to engage in EM practice. Several studies have investigated the relationship between board financial expertise and EM (AbuSiam et al. 2014; Lin and Hwang 2010; Park and Shin 2004; Xie et al. 2003). Park and Shin (2004) suggest that a board with directors from a financial background can reduce abnormal accruals and EM. Additionally, a meta-analysis by Lin and Hwang (2010) shows that directors with financial or accounting expertise are negatively related to EM practices. Thus, consistent with the agency theory and arguments above, the study argues that board financial expertise can lower EM.

3.5 Remuneration and Governance Committee and EM

To date, only a few studies have examined the role of the remuneration committee in mitigating EM. Jiamsagul (2007) finds a positive association between the presence of remuneration and nomination committees and firm performance. The committee may also reduce agency problems and increase transparency. Laing and Weir (1999) reveal that firms with audit, remuneration, and nomination committees perform better than those without any. Hoitash et al. (2009) argue that board committees can enhance board effectiveness. Prior literature has offered evidence to support the positive effect of the remuneration committee on the effectiveness of the BOD. Meanwhile, in Jordan, Siam (2015) finds a negative association between the remuneration committee and EM. In Saudi Arabia, Habbash (2011) finds an insignificant association between remuneration committees and EM practices. Similarly, Alghamdi (2012) also finds an insignificant association between remuneration and nomination committees and discretionary accruals.

3.6 BOD Effectiveness and EM

Several studies have argued that the effectiveness of BOD increases the credibility of financial statements. Following this argument, an effective BOD is expected to minimize EM practices (Klein 2002; Anderson et al. 2004; AbuSiam et al. 2015). It is expected that these elements, when present at once, enhance the monitoring role of the board, thus minimizing the possibility of the manipulation of accounting values. Chobpichien et al. (2008), Ward et al. (2009) and AlQadasi and Abidin (2018) emphasize that to uphold the interests of stakeholders, CG mechanisms must be implemented as a group, as they complement each other. Amrah et al. (2015) capture board effectiveness comprehensively using a composite measure of board characteristics. Based on these arguments, it is expected that a high-quality board can mitigate EM practices by minimizing agency problems, providing better oversight of managerial actions, and publishing more credible financial reports.

3.7 Moderation of Political Instability Between BOD Effectiveness and EM

Several studies have examined financial crisis and political issues and their effects on EM (Attia et al. 2016; Harymawan and Nowland 2016; Hsiao et al. 2016; Obaidat 2017). Indeed, the performance of Palestinian firms listed on the PEX has been affected by political instability (PEX 2018). The Arab Spring in 2011 has also affected the economies of MENA countries. Jamia (2013) explains that foreign investments have fled from the countries affected by the Arab Spring, such as Egypt, Tunisia, and Libya, due to political unrests and the uncertain economic environment. He also finds the declining volume of Palestinian exports during the Arab Spring. Finally, he recommends updating the regulations, laws, and codes of CG to provide more protection to foreign investors and attract additional investments into the Palestinian economy. Obaidat (2017) reports that Jordanian non-financial listed firms are more likely to engage in income smoothing during periods of political crises. Mangena et al. (2012) examine the association between BOD, ownership structure, and firm performance during severe political and economic

crisis. They found that during periods of severe political instability, BOD size, executive directors' ownership, and ownership concentration increase, while the proportion of non-executive directors decrease. Firm performance is positively related to BOD size and ownership concentration in times of severe political instability. Finally, they recommend investigating the relationship between BOD, disclosure, and EM amidst an unstable political environment.

4 Conclusion and Expected Findings

This study extends the CG and EM scholarship with several contributions. Firstly, there is a lack of studies addressing the relationship between CG and EM in Palestine. To the authors' best knowledge, this study is the first to address this relationship. Secondly, this study builds on prior studies by examining a new variable, i.e., BOD effectiveness, that has not been tested before. Past studies have empirically linked EM with the individual characteristics of the BOD. Thirdly, previous studies suggest that the effectiveness of CG mechanisms are affected by political instability (Mangena et al. 2012). Therefore, we suggest further research on the relationship between CG mechanisms and EM during political instability. Furthermore, future research should include other CG characteristics, such as audit committee attributes, ownership structure, and internal and external audit characteristics. To sum up, this paper will extend the existing literature on EM by employing political instability as a moderator between BOD characteristics and EM.

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An Instructional Project: Compliance with IASB Conceptual Framework by the Listed Companies

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Abstract. Accounting students are usually taught in a traditional manner that lacks the integration of experimental learning components. Among other skills, financial reporting and professional communications skills are negatively affected by the lack of pedagogies that simulate real work situations. In the accounting field, disclosing financial information in a standardized way is deemed part of the effective communication process. Consequently, this teaching note deliberates on an instructional project aimed at enhancing students' understanding and abilities on why, who, and what to disclose in the financial statements according to the applicable International Accounting Standard Board (IASB)'s conceptual framework. This teaching note informs educators, standards setters, and students on a possible effective pedagogy. The feedback from students on the instructional was very positive. Moreover, the instructional project was tailored in a manner that makes it adaptable in different contexts. In addition, the students took the instructional project during the online learning period due to the COVID-19 pandemic. Thus, it is applicable in online learning, face-to-face learning, and hybrid learning environments.

Keywords: IASB conceptual framework · Compliance · Professional communication skills · Instructional project

1 Introduction

The International Accounting Standard Board (IASB) has gained vast progress in spreading the adoption of its international financial reporting standards [1, 2]. This is because of the foundations that the conceptual framework provides. The conceptual framework is important to the accounting profession for many reasons. First, it builds on an organized body of concepts and aims. Second, it presents an effective framework for solving new

accounting-related practical problems. Third, it increases users' understanding of financial statements, thus, enhancing the users' confidence in the financial reporting process. Four, it improves comparability between firms' financial statements [3]. Therefore, it is crucial for students to be exposed and adequately trained on the IASB conceptual framework application on accounting-related matters.

Enhancing the students' understanding and abilities on why, who, and what to disclose in the financial statements according to the applicable International Accounting Standard Board (IASB)'s conceptual framework is very important for their career success for the following reasons. First, it will positively reflect on their understanding of professional communication skills. Professional communication in accounting work refers to the process of disclosing accounting and financial information to the user of the information by the mean of accounting reports, which are usually financial statements [4]. Second, compliance with the enforceable accounting standards is a must in today's regulated accounting environments. Thus, it is vital for students to be updated with the recent regulations in their field. Third, accounting standards enhance the global accounting convergence efforts. Thus, this will enhance students' marketability and mobility to work in international markets [5].

We got motivated to uses this instructional project as a result of many reasons. First, the need to correspondingly expose the students to real-world situations. Thus, student enhances their understanding of the theoretical knowledge of the IASB conceptual framework and how it could be used in their future work. Second, to make the accounting learning process more valuable and enjoyable to the students. Third, many accounting educationists and accounting education researchers recently called for more experiential and constructive learning that focus on (1) link the learning objective of a course with assessment tools, (2) link the knowledge content of the course with real work situations [6–10]. Finally, the IASB conceptual framework is a theoretical content knowledge that needs to be taught to the students in a non-traditional way to ensure that a student gained its essence. The IASB conceptual framework is considered the first fundamental accounting student would underpin in the accounting-learning journey. Moreover, this instructional project aimed at enhancing the student's professional skills and abilities such as communications skills, professional judgments, critical thinking, and qualitative analysis.

2   Overview of the Course (Intermediate Accounting 1) and Its Materials

This instructional project was delivered to 57 students who enrolled in the intermediate accounting 1 course during the summer semester[1] of the 2019–2020 academic year. A total The teaching process was conducted in that semester using an online platform (MS Teams) due to the COVID-19 pandemic outbreak and the social distancing requirements. The instructor met the students virtually four lectures every week, and each lecture lasted for 1 h and 15 min. The used textbook is Kieso, D. E., Weygandt, J. J., Warfield, T. D., Wiecek, I. M., & McConomy, B. J. (2019). Intermediate Accounting: John Wiley & Sons. Mainly, four chapters were delivered to the students as follows.

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[1] The summer semester starts on 1st of July and ends o 31st of August.

- Chapter 2: Conceptual Framework for Financial Reporting
- Chapter 4: Income Statement and Related Information
- Chapter 5: Balance Sheet and Statement of Cash Flows
- Chapter 23: Statement of Cash Flows

All the selected chapters aimed at informing the students on the process of financial statement preparation and presentation and the issues surrounding the financial reporting process.

3   Project Requirements

The project asks the students to qualitatively and deductively analyze one annual report of a listed company in the Amman stock exchange (ASE). The required qualitative analysis encompasses using content analysis to the financial and accounting information contained in the annual report. The analysis should be deductively guided based on the IASB conceptual framework. In detail, the IASB conceptual framework includes three main levels (the first level is basic objective; the second level is qualitative characteristics and elements of financial statements; the third level is recognition, measurement, and disclosure concepts).

As planned, students were asked to judge whether a company of the student's choice is complied with the IASB conceptual framework requirement by answering the following questions. Students were also required to support their answer by providing an example from the chosen company's annual report.

1. Does the firm meet the objective of financial reporting?
2. Does the firm fulfill the qualitative characteristics of accounting information and the basic elements of financial statements?
3. Does the firm comply with the basic assumptions and principles of accounting as given by the IASB conceptual framework?

The students were asked to qualitatively analyze one annual report of one listed company on the Amman Stock Exchange (ASE). The students are required to examine whether the company has complied with the IASB Conceptual Framework. The students should provide a report within a timeframe of two weeks after the instructor has delivered the chapter of the "Conceptual Framework for Financial Reporting." The students' reports were assessed based on two criteria. First, the content criterion, where the report should contain appropriate items and information (information is appropriate to the assigned topic). Second, the analysis criterion, where the report should be clean, neat, and creative and the information is well organized, interesting, accurate, and reflects an understanding of the topic.

4   Project Learning Objectives and Implementation Guidance

Students usually study accounting content within the traditional accounting curricula through examples that show the precise nature of the topics and the associated accounting

problems. The accounting educators are used to deliver the content knowledge of the IASB conceptual framework through traditional pedagogies, which mainly focus on student's ability to memorize the content [11, 12]. Although this is a crucial step in the accounting knowledge acquisition, there is a need for new practitioners who can recognize and properly identify accounting problems inherent in financial reporting and accounting conceptual framework. This instructional project aims to develop the students' ability and make them more capable of understanding the content knowledge of the IASB conceptual framework and linking its application to real firms' financial reporting context.

This instructional project is aligned with the learning objectives of the adopted textbook. Kieso, Weygandt [3] claim that after studying the chapter of "Conceptual Framework for Financial Reporting," students should be able to perform the following learning objectives.

1. Describe the usefulness of a conceptual framework and the objective of financial reporting.
2. Identify the qualitative characteristics of accounting information and the basic elements of financial statements.
3. Review the basic assumptions of accounting.
4. Explain the application of the basic principles of accounting.

As such, it is important for accounting students to be introduced to situations, which simulate financial reporting to experientially learn how to address the above-mentioned learning objectives. This instructional project answers the calls by introducing an experiential pedagogy that involves the learning objective of the IASB conceptual framework.

5 Project Adaptability and Classroom Implementation

The project is adaptable in undergraduate-level intermediate courses regardless of the context, as it deals with the IASB conceptual framework and the firms' annual report. Consequently, accounting educators in any country that comply with the IASB requirements could request their students to conduct this project. Prior to completing the instructional project, students must understand the accounting principles under the guidance of IFRS. For those students who have no sufficient experience in accounting principles, instructors may need to provide them with a short tutorial. Furthermore, the instructional project was tailored in a manner that makes it adaptable in a different context. Besides, the students took the instructional project during the online learning period due to the COVID-19 pandemic. Thus, it is applicable in online learning, face-to-face learning, and hybrid learning environments.

6 Evidence of Efficacy

6.1 Normality Test

According to Aryani [13], normality criteria reflect the distribution of a sample that matches a normal distribution. Statistical tests that are carried out on non-normal data

may be invalid and questionable [14]. Two dimensions to evaluate the degree of non-normality are 1) the shape of the offending distribution and 2) the sample size [15]. It is believed that a small sample size will result in greater non-normality on the distribution and vice versa. The test is useful in identifying whether a data set is well-modeled. It can also calculate the likelihood of an underlying random variable being normally distributed [16]. Gravetter & Wallnau [17] state that normal distribution is characterized by a symmetrical, bell-shaped curve with the greatest frequency of scores in the center and smaller frequencies tapering off towards the two ends of the curve. In this research, the normality of data in this study was assessed by examining Skewness and Kurtosis values. Hair et al. (2006) advocate the use of Skewness and Kurtosis values as they provide more accurate measurement of normality. In this section normality test applied and result as tabulated in Table 1:

Table 1. Normality test

Item	Skewness		Kurtosis	
	Statistic	Std. error	Statistic	Std. error
By doing the project, I increased my understanding of the purpose of the financial reporting process	-.805-	.316	1.011	.623
Through my undertaking of the project, my understanding of the qualitative characteristics of accounting information increased	-1.589-	.316	5.467	.623
As I undertook the project, I increased my understanding of the elements of the financial statements	-.846-	.316	.999	.623
Through my project, my understanding of accounting assumptions increased	-.697-	.316	1.136	.623
Through my project, my understanding of accounting assumptions increased	-.358-	.316	-.919-	.623
As I did the project, I increased my understanding of the expense recognition guidelines	-.360-	.316	-.740-	.623
Through my project, I increased my understanding of the historical cost concept	-.985-	.316	.963	.623
Through my project, I increased my understanding of the fair value concept	-.739-	.316	1.172	.623
Through my project, my understanding of the concept of full disclosure has increased	-.945-	.316	.834	.623
Through my project, my understanding of the determinants of financial reporting has increased	-1.609-	.316	6.722	.623
Through my undertaking of the project, my ability to make investment decisions increased through the use of financial statements of companies	-1.282-	.316	1.306	.623

(*continued*)

Table 1. (*continued*)

Item	Skewness		Kurtosis	
	Statistic	Std. error	Statistic	Std. error
The project helped develop the use of critical thinking skills in accounting tasks	-.665-	.316	2.171	.623
The case study helped develop my ability to identify the accounting issues inherent in the issues of the financial reporting process	-.616-	.316	.123	.623

The result of normality data as stated in Table 1 proved that normality distribution for items is acceptable. According to George and Mallery [18], the arithmetic mean is a good descriptor if the Skewness value obtained is within ±2.0 cut-off point. Also, Byrne [19] suggested the cut-off point for Kurtosis, which is less than 7 to be acceptable. The result revealed that the Skewness for these items is below ±2. For Kurtosis, the result revealed that the Skewness for these items is below ±7. Therefore, the data declare as normally distributed.

6.2 Descriptive Analysis and Qualitative Responses

The mean scores for each item were summarized in Table 2. There are 12 items and all of them were at a high level of score. Most of the respondents agreed that by doing the project, they can increase their understanding of the purpose of the financial reporting process (Mean Score = 4.30, Standard Deviation = 0.680). The lowest items among these 12 items are; (Through my project, I increased my understanding of the fair value concept) (Mean Score = 4.09, Standard Deviation = 0.714), through my project, my understanding of the concept of full disclosure has increased (Mean Score = 4.09, Standard Deviation = 0.830), as well as the case study helped develop my ability to identify the accounting issues inherent in the issues of the financial reporting process) (Mean Score = 4.09, Standard Deviation = 0.786).

At the end of the distributed questionnaire, the students were given the space to reflect their perceptions on the efficacy of the used pedagogical tool. An open-ended question was given to the students asking them to add anything else they want to the overall responses. The majority of the students show that they have been able to enhance ad develop their abilities in understanding the subject matter (see: Table 3). Specifically, they emphasize the benefits of the used pedagogical tool in developing financial reporting-related skills and knowledge. Students show that they enjoy doing the project, some of them asked for more projects similar to it.

Table 2. Mean score for items

Item	Min	Max	Mean	SD
	Statistic	Statistic	Statistic	Statistic
By doing the project, I increased my understanding of the purpose of the financial reporting process	2	5	4.30	.680
By doing the project, I increased my understanding of the qualitative characteristics of accounting information	1	5	4.14	.743
By doing the project, I increased my understanding of the elements of the financial statements	2	5	4.32	.686
By doing the project, I increased my understanding of accounting assumptions	2	5	4.25	.662
By doing the project, I increased my understanding of the expense recognition guidelines	3	5	4.26	.669
By doing the project, I increased my understanding of the historical cost concept	2	5	4.26	.768
By doing the project, I increased my understanding of the fair value concept	2	5	4.09	.714
By doing the project, I increased my understanding of the concept of full disclosure	2	5	4.09	.830
By doing the project, I increased my understanding of financial reporting constraints	1	5	4.21	.700
By doing the project, I increased my ability to make investment decisions through the use of financial statements of companies	2	5	4.28	.861
The project helped develop critical thinking skills in accounting tasks	2	5	4.25	.606
The case study helped develop my ability to identify the accounting issues inherent in the issues of the financial reporting process	2	5	4.09	.786

Table 3. Students' responses

Nice, this project gave us an idea about how to make financial statements. Thank you!

The report increased my understanding of the purpose of the financial reporting process.

As an accounting student, the project developed and increased my ability to understand the major and subject matter

The project was important and helped me to understand the material.

The project helped me analyze any listed company and compare it with other companies and through previous years. Thank you.

I liked the idea of the project, and it helped me to understand the material deeply.

The project helped me understand many important things that will help me as an accountant. I am happy to be introduced to the Amman Stock Exchange.

You should have explained more about the project because this is the first time we have done it. Thank you

The project added space for enjoyment in the course and enhanced the ease of understanding.

7 Concluding Comments

As the IASB conceptual framework and financial reporting seem to be the core knowledge of the intermediate accounting (1) course, it is vital to develop students' capabilities and understanding of these intertwined concepts. As demonstrated in this teaching note, accounting students benefit more through using untraditional and experiential learning approaches. Thus, incoming practitioners must soundly comprehend both IASB conceptual framework and financial reporting and other accounting-related knowledge through the application of suitable pedagogies.

Declaration of Interest.   The authors have no competing interests to declare.

Appendix 1: Project for Intermediate Accounting 1 – Compliance with IASB Conceptual Framework by the Listed Companies

Required Tasks

You are required to qualitatively analyze one annual report of a listed company on the Amman Stock Exchange (ASE). The aim of your report should be to examine whether the company has complied with the IASB Conceptual Framework. The following are the major requirement for this project.

A. You have to comment on whether the company that you chose has complied with the following aspects of the IASB Conceptual Framework or not.

   1. The basic objective of financial reporting
   2. The qualitative characteristics and elements of financial statements
   3. The recognition, measurement, and disclosure concepts

B. You have to give accurate examples from the annual report of the company that you chose.

Instructions to Download Annual Reports

To download annual reports, please follow the following steps:

1. Go to https://www.ase.com.jo/en.
2. Scroll down and choose the "LISTED SHARES" button.
3. From the listed company, choose one company.
4. After choosing the company, please choose the "Disclosures" tab.
5. Click on the file described as an "Annual Financial Report" under the category tab.

   Name_____ Score_____/10.
   Comments

Table 4. IASB conceptual framework project grading rubric

	5	4	3	2	1–0
Content The report contains appropriate items and information (information is appropriate to the assigned topic)	Content is accurate, and all required information is presented in a logical order	Content is accurate, but some required information is missing and/or not presented logically but is still generally easy to follow	Content is accurate, but some required information is missing and/or not presented logically, making it difficult to follow	Content is either questionable or incomplete. Information is not presented in a logical order, making it difficult to follow	The content is inaccurate. Information is incomplete, inaccurate, or not presented logically, making it difficult to follow
Analysis The report is clean, neat, and creative. The information is well organized, interesting, accurate, and reflects an understanding of the topic	The analysis is correct, clean, well-organized, and presented creatively Information is interesting and accurate	The analysis is mostly correct and organized. Information is organized logically and shows some degree of creativity. The overall analysis is interesting	The analysis flows well. Some tools are used to show acceptable understanding Information is represented and identified with their name	The analysis is unorganized. Tools are not used in a relevant manner. Lacking some of the information/ and or information is not identified	Analysis has no flow. Insufficient information and lacking some of the member's information

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The Moderating Role of Supreme Audit Institutions on the Relationships Between the Municipal Audit Quality and the Audit Quality Attributes: Palestine Case

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Abstract. The purpose of this study is to investigate the impact of the Supreme Audit Institutions (SAIs) on the relationships between external audit quality and audit quality attributes: the auditors' characteristics, audit firms' attributes, and the effectiveness of municipal internal control. Data for the study was collected from secondary and primary sources. The secondary data were collected from the Palestinian SAIs' annual and the interim specialized reports from year 2011 to 2020. Moreover, the study employed the questionnaire survey to know the perception of the CPAs who licensed and in the public practice of the audit profession in Palestine on the role of the SAIs on the audit quality in the municipalities, in order to support the result of the analysis of the SAIs audit reports. The study uses SPSS Software 20 in order to analyze the collected data by the questionnaire. The study finds that the SAIs have a medium impact on the relationship between the audit quality and the effective internal control components, as well as the auditors' characteristics, but SAIs have weakness impact on the audit firm's attributes. The findings of the study may help the policymakers in the municipalities, SAIs, profession regulators, and the audit firms to consider the impact of auditing of SAIs on external audit quality in the municipalities when they decide on the audit engagement's agreement and audit process. Moreover, the study opens the doors to the academic researchers to examine effect of SAIs on the relationship between the audit quality and other audit quality attributes and use other research methods.

Keywords: Audit quality · Auditors characteristics · Internal control · Audit firms attributes · Supreme audit institutions

1 Introduction

From the beginning of the 21st century, awareness of the importance of the SAIs auditing is growing, because this type of audit is examining government spending accordance of the related laws, regulations, applicable accounting framework and the approved budget, moreover it contains evaluation of the effective and the efficiency of the public sector programs [1, 2] And the World Bank in 2001 reported that most countries around the

world established national audit agencies as Supreme Audit Institutions in order to be responsible for auditing government financial statements [3] and performance audit [2]. In general, SAIs normally provide all types of auditing either financial, performance and compliance audit [4]. Besides of the audit of the SAIs, some of PSOs are opened to the external auditing in some countries [4]. For example, the municipalities in Palestine which are opened to the external auditing voluntary along besides the internal auditing and the auditing of the SAIs as mentioned in the Policy Paper for Developing Mechanisms for Directing and Monitoring the Work of Local Authorities in July 2011, in this paper the Palestinian Ministry of Local Government (MOLG) revealed that the external audit in the municipalities was voluntary depending on their requirements, but now it becomes recommended by the MOLG [5]. The external audit focuses on the financial statements audit which is provided by the CPA auditor who issues his opinion about the fairness of these financial statements [6] in standardized written audit report, which used in all audit engagement in either public sector or in private sector [4]. The importance of this type of audit increases in the PSOs including NGOs, because these organizations play a vital role in providing the basic services such as infrastructure (roads, bridges, public building, and parking), electricity, water and waste water, health, education, and others [7, 8]. The significant of these services made the stakeholders of the PSOs interested in the credibility and the transparently of information reports, particularly the financial statements [9]. For example, the management, as the most important part of the stakeholders of the PSOs, has an interest in a good public perception about financial statements credibility, therefore the management always needs a credible independent auditor who provides high level of audit quality [6]. Also, the citizens as taxpayers in any state or city are interested in this type of audit and they perceive the importance of it, because they want to know where the money spend, and whether these money spend in an economical, efficient and effective way [1].

Most audit firms, in providing the audit service, make sure to provide a high quality of audit which reflects positively on the financial decisions, and this enable these firms to keep their current clients and to attract new clients [10], and the outcome of the audit quality will lead to more assurance that the audited financial reports are more reliable and credible with high level of the audit quality [11], and this is still an essential requirement for all stakeholders of the audit profession in the present and in the future. But till now no agreement among the practitioners, regulators, and researchers on one definition and valid measurements for the audit quality, therefore it is defined and measured in various ways [12–15]. This returns to that the actual audit quality is unobservable before and when an audit is performed [16], also, the auditors' efforts in audit engagement also is unobservable [17].

Auditing of SAIs is provided by independent governmental agency for all PSOs [4], but this type of audit concentrates on the compliance audit, performance audit, and the follow up of the complaints in the PSOs. While, the audit of the financial statements in Palestinian LGUs is provided by the external audit firms (CPAs firms), but the FACB as SAI in Palestine required from these firms to fulfill all professional conducts and ethics which applicable to the auditing of governmental entities, and required from who is performing the governmental audit to submit to it any breach is founded in any entity under the audit. This means that there is a relationship between the SAIs and the

external audit quality, but the prior studies did not examine sufficiently the effect of SAIs as moderator variable on the relationship between the external audit quality attributes and external audit quality.

The study seeks to address a gap in the literature of the audit quality in the municipalities according the perception of the CPAs in Palestine as developing country, because the most audit quality literature focuses on the external audit of private sector organizations particularly the public corporations in developed countries, but there is a lack of studies related to the audit quality in the PSOs [3, 18, 19]. In addition, the study tries to show the effect of the SAIs on the relationships among the audit quality and their factors (the auditor's characteristics, firms audit attributes and the effectiveness of the municipal internal controls).

In general, this study tries to answer this question: Do the SAIs moderate the relationship between the audit quality and the chosen audit quality factors: the auditor characteristics, the audit firm attributes, and the effectiveness of the municipal internal control? To answer this question, the study reviewed the audit quality literature in order to determine the nature of the relationship between the audit quality and the chosen audit quality factors and their dimensions, and to explore the effect of the SAIs on this relationship. Moreover, the study made reviewing the documents of the SAIs, reviewing the approved governmental audit standards, analyzing the annual and interim SAIs audit reports, and seeking of the auditors' perspective of the role of SAIs on the external audit quality in Palestinian municipalities. In addition to the enhancement of the audit quality literature in the developing countries, the result of the study may be useful for the municipalities management in hiring the suitable external auditors, the profession regulators in setting the audit standards, the audit firm management in planning of the audit engagement particularly in the assessment of the audit risk, and the SAIs management in evaluating of the new experiment of external audit in the municipalities, and in determining of the degree of reliance on the external audit reports.

2 Literature Review

There are inconsistent results in the empirical literature about the factors that affect audit quality. In this section, the audit quality attributes that affect the audit quality are reviewed with a focus on the auditors' characteristics, audit firm's attributes, and effectiveness of internal controls in the municipalities as PSOs.

2.1 PSOs Characteristics

Entities of the public sector provide general purpose financial statements to demonstrate accountability to their stakeholders particularly the superior government or the public to show how the funds used in providing service to the public beneficiaries [20]. The financial reporting system in public sector entities does not focus on the amount of profit but on the effectiveness of providing services to the public [21]. For these reasons the financial reporting system in public sector entities uses specific applicable framework for accounting specialized in the public sector accounting standards [22], these standards may differ in each country, because each country has specific conditions and distinct

financial reports purposes. This study takes into account the unique environment of the public sector characteristics with expectation that the unique environment may has an effect on the audit quality and it is sharing in the determinants of the audit quality such as the structure of the governance body and how to appoint its members, laws and regulations, operation plan and related financial budget, supreme auditing institution, political pressure, hiring external auditors and determining their fees, source of revenues and governmental grants, and the superior government strategy.

2.2 Audit Quality

The main purpose of the audit process to report whether the contents of the financial statements represent fairly the financial position and the result of the operations of the firm during specific period [23]. The independent audit reports are valuable for financial statements users including the municipal stakeholders such as investors [24]. The value of audit increases if the audit process performed effectively and with high quality, but the quality of audit concept remains unclear despite the plentiful of research on it. The researchers do not reach to a uniform understanding for the audit quality, therefore they need more examinations for the variables of the audit quality which has a multidimensional concept, and depends on the view of the different stakeholders parties as the financial statements users, auditors, profession regulators, and the society (Robert Knechel et al. 2013; Masood and Lodhi 2015). Knechel and others (2013) summarized the view of each type of the stakeholders as follows: The users of the financial statements may think that the free of the financial statements from the material errors and fraud leads to high audit quality, but the high audit quality achieved according the auditor's view when he convinced himself that all professional requirements are met, and all audit tasks are completed as the audit firm's approach, in contrast the audit firm believes that a high audit quality is occurred when it has an ability to demonstrate any claims or challenges in front of the court of law, also, a high audit quality may means the compliance with professional standards as audit profession regulators view, and it means avoidance of economic problems which threat the existence of the entity or its market according the society view.

The auditor provides assurance about the audited financial statement, but the amount and level of this assurance is unobservable, therefore the measuring of the audit quality is not clear and problematic issue [16, 25, 27]. Alareeni (2019) mentioned that previous research has addressed in different ways many attributes and characteristics of the audit firm that affect the audit quality, so that some studies examine the effect of one attribute, whereas other studies examine the effect of several attributes on the audit quality.

Audit quality has two important attributes: competence (expertise) and independence (objectivity) [28]. Kusumawati and Syamsuddin (2018), and Watson (2019) determined that responsibility of the audit quality relied on the auditors, therefore the auditor quality is very important for achieving the audit quality, and the auditor quality is measured by auditor's independence, commitment, ethics, competence, conscientiousness, moral courage and reputation and experience, all these attributes are required by the profession and audit standards [29, 30].

2.3 Auditors Characteristics

There is a consensus that auditor characteristics play significant role in determining the audit quality, and they are considered the most important determinants of audit quality [31]. Watson (2019) derived five auditor attributes which they contribute to the audit quality from DeAngelo's (1981) definition of audit quality: competence, conscientiousness, independence, moral courage and reputation. Also, Kusumawati and Syamsuddin (2018) classified the measurement of the auditor attributes five attributes: ethics, commitment, independent, competence and experience, and they mentioned many personal qualities must be met by the auditors as: honesty, tactful (diplomatic), ability to work hard, impartial, cautious and vigilant, methodical, aptitude to track down data and figures, and an insatiable curiosity, courage, ability to maintain secrets, ability to communicate, and common sense [29]. But the competency and independency (include the ethics) of auditors are considered as inputs to the auditing process and are probable indicators of the auditor's ability to carry out a high-quality audit [27].

This paper choses auditors' ethics, independency, and competency as dimensions of auditor's characteristics. These characteristics are considered by many researchers, practitioners, and regulators as a focal point for the audit quality, and they form as basis for other attributes and factors of the audit quality.

2.4 Audit Firms Attributes

Audit firms attributes are considered as inputs of audit process, such as audit fees and audit firm size which they indicate to the audit quality [32] and they are considered the most important attributes of the audit firm, because they reflect the effect of other audit firm attributes, for example, the amount of audit fees is determined and related with the level of industry specialization, the auditor tenure, providing non-audit services, reputation, and independency. DeAngelo (1981) demonstrates that there is a positive relationship between the audit quality includes auditor opinions and the audit firm size because the large audit firm has more reputation and clients to lose by failing to report material errors or fraud which they detected in a client's records.

2.5 The Internal Control

Internal control is generally characterized as management's method of providing reasonable assurance about the achievement of productive and successful operations, accurate financial reporting, and compliance with laws and regulations (Petrovits et al. 2011; Lansiluoto, Jokipii, and Eklund 2016; Younas and Kassim. 2019). Committee of Sponsoring Organizations of Treadway Commission (COSO) established and issued Internal Control-Integrated Framework in 1992, this framework includes five components, namely, control environment, control activities, risk assessment, information and communication and monitoring, the existence of these components produces an effective internal control, in addition, COSO framework states three objectives for internal control as: the effectiveness & efficiency of business, the reliability of financial report, and the compliance with applicable laws (Lansiluoto, Jokipii, and Eklund 2016; Marshall B. Romney 2018; Younas and Kassim. 2019). It is clear that the audit quality is affected

by the strength degree of internal control, because the achieving of the internal control objectives supports the objective of the external audit which leads to improve the audit quality. The study examines these dimensions of the effectiveness of the internal control: internal auditing, basis of accounting, and the compliance of the applicable laws and regulations.

External auditor always relies on the work of internal audit either in private sector or in the public sector, particularly, internal auditors always conduct further audits in operating areas including fiscal receipts and expenses. (Aikins 2011).

But the accrual accounting basis has many benefits for different users which summarized by the researchers as follows: accrual accounting basis facilitates and provides more useful (relevant and reliable) information for decision makers, helps in achieving more effective and efficient public administration, provides transparency by issuing balance sheet based on the accruals, provides multiple reporting framework, enables the taxpayers and voters to access to the same information, and provides modern financial reporting and suitable for international comparison (Dewi et al. 2019; Eulner and Waldbauer 2018; IFAC, 2012; ERIN, Olayinka 2019). In addition to the above benefits, adoption of the accrual accounting basis or IPSAS reduces the corruption in PSOs and increases the financial reporting quality (Cuadrado-Ballesteros, Cito, and Bisogno 2019; ERIN, Olayinka 2019). Alareeni (2019) found evidence confirmed that the legal environment has vital impact on the audit quality in addition to the strength of auditing and accounting standards and procedures and the laws and regulations are considered as part of the internal controls of the client's operations, and they have an effect on the audit quality (Alareeni 2019). Yebba and Elder (2019) in their study found that there is an enhancement of audit quality with GAAP regulated state (Michigan), because the environment of reporting becomes stronger with these regulations, and requires specialist auditors who have practical experience in the applicable regulations. Laws and regulations which applicable to the clients do as guidance for them in how to operate their works, including hiring the external auditors and the conditions of the audit agreements and the scope of the audit process and its outcomes.

Based on the preceding discussion, it's clear that there are significant positive relationships between the chosen audit quality attributes; auditors' characteristics, audit firm's attributes and the effectiveness internal control, and the audit quality as the Fig. 1 shows.
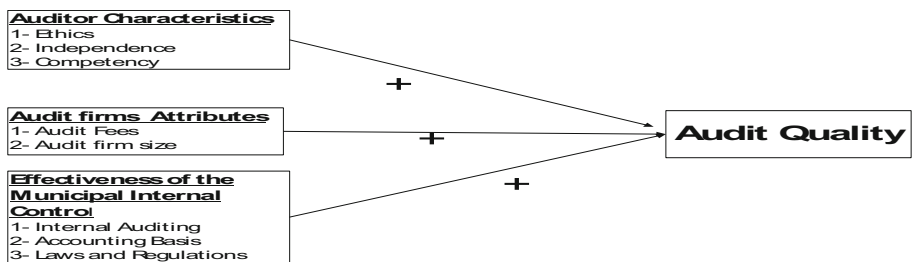

Fig. 1. The relationships between the audit quality attributes and audit quality

2.6   The Supreme Audit Institutions

Supreme Audit Institutions (SAIs) are national agencies in charge of auditing government revenue and spending, whether by performance, compliance, or financial statement audits, as well as their legal mandates, reporting relationships, and the effectiveness of various governance methods, government procedures, and policies. However, the primary goal of SAIs is to oversee the management of public funds and the quality and integrity of government procedures and policies [6]. SAIs audit is examining the government spending according to related laws, regulations, applicable accounting framework and the approved budget, also it contains evaluation of the effective and the efficiency of the public sector programs [1, 2]. The auditing of SAIs is performed by independent governmental agency for all PSOs [4] which include the central government (ministries), state governments, counties, municipalities, governmental corporations, any organization owned or under supervision of the government such as hospitals, universities, and anyone uses public funds [4, 44, 45]. All public funds and their users are subject to audits in accordance with the regulations governing the budget system, financial statements, financial transactions, analyses, and other audit records and data [1]. Normally, the SAIs have unlimited authority to perform their duties efficiently, for example, the Jordanian laws offer Accounting Bureau the authority to conduct auditing without any restriction, and it submits an annual report to the legislature's authority, detailing the observations and notes made during the auditing of public-sector organizations [46].

Although SAIs are subject to parliaments, they are not part of the executive, legislative, or judicial branches of the government, but they are part of the judiciary in Greece and Portugal, while SAIs in other countries (e.g., France, Italy, and Spain) perform judicial functions but they are not considered part of the judiciary [45]. SAIs audit and evaluate public policies and programs for the benefit of their respective parliaments, therefore, they do only as subordinators for their Parliaments, however, SAIs do not question the political goals themselves, but rather evaluate how they are being implemented by public organizations [45, 47].

The SAIs' main function is to provide independent reporting on the programs, services, and activities of users of public funds, as well as to give trustworthy assurance and assessment of the public sector's functioning in order to exercise responsible authority [1]. Therefore, the SAI's effectiveness depends on the information function which means that the SAIs conduct audits of their own activities and formulate audit conclusions and recommendations, which are not required legally to be followed. [45]. Other functions for SAIs are derived from main function and from SAIs' law and regulations: control, preventive, training and education, investigation, standardization and regulatory, Political, and advisory [6, 45, 47, 48].

In the audit reports available to users, the Supreme Audit Institutions (SAIs) attempts to give accurate, independent, and objective information, views or opinions, and conclusions based on sufficient and relevant audit evidence, also, the SAI is in charge of encouraging change, extending knowledge, and providing suggestions to improve the PSOs performance, and as a result of the audit evidence, SAIs attempt to establish facts, determine the causes and effects of irregularities, and make recommendations to auditees on how to eliminate irregularities and improve their activities [1, 47]. The tasks of the SAI can be summarized as follows: (1) The operations of the federal government,

regional governments and the provinces undergo to an audit, a review of legality, and a check on the proper use of public funds, the audit process includes the audit of both the expenditures and the revenues, (2) The results of the audits are reported to the concerned parliaments and county councils, (3) It examines the accounts of the public administration and those financially responsible for the state (Acker and Bouckaert 2018; Desmedt, E., Morin, D., Pattyn, V., & Brans 2017). The effective of these tasks depending on the quality of the SAIs' auditors, therefore, Octavia, E., & Widodo (2015) found that the quality of financial statements in the PSOs has a positive significant relation with competence of the government auditors (SAI), therefore the external audit quality could be improved by having a competent auditor in SAI, because the external auditor may depend on high level quality of financial reporting, and this leads to high audit quality [50].

The Supreme Audit Institutions in Palestine. The audit of SAIs in Palestine is executed by two bodies in the municipalities: Financial & Administrative Control Bureau (FACB) and the General Department of Control and Guidance in the Ministry of Local government (MOLG). These bodies provide compliance and performance audit services to the local government units in addition to fellow up the complaints.

Financial and Administrative Control Bureau (FACB). Following the establishment of the NPA in Palestine in 1993 and the establishment of many PSOs, audits of PSOs began in Palestine under presidential decree 22/1994, which was later amended by decree law 17/1995, both of which were related to the establishment of the General Audit Institution (GAI), which was later replaced by the Financial Audit and Administrative Bureau (FACB) law 15/2004. FACB is considered the supreme audit institution of Palestine, and became a constitutional organization which activities are regulated by its own law, has a budget within the general budget of Palestine and has independent legal personality and full legal capacity to assume tasks and powers prescribed in FACB law and related laws and regulations. The main purpose of FACB is the guarantee soundness and sustainability of financial and administrative activities of Palestine's three authorities (Executive, Judiciary, Legislative), disclose all forms of financial and administrative fraud or material errors, including misuse of public job, and ensure that public performance in Palestine is in compliance with effective laws' provisions, regulations, bylaws, instructions, standards, procedures and that is undertaken in reasonable, effective and efficient manner [51]. FACB accepts INTOSAI standards and international audit standards, and it committed to improving its conduct in order to comply with all INTOSAI standards [52].

In addition to individual reports on audited entities, FACB publishes quarter and annual reports containing total activities undertaken according the pre-established plan or the emergency issues. These reports are delivered to the President of Palestine, the parliament (legislative council) and council of ministers as law provisions. FACB has a statutory mandate permitting control procedures in all PSOs under audit, where financial and compliance audits are performed, but FACB has recently started conducting performance audit through a development program [51].

Act of Financial & Administrative Control Bureau NO. 15 for 2004 mentioned in article no. 3 the main objectives of the FACB as follows:

1. Ensuring the soundness of financial activity, and good use for the public money, in the assigned purposes to it.
2. The administrative inspection, to guarantee the performance efficiency, good application for the authority, and the deviation disclosure, where found.
3. The extent of harmony and correspondence in the financial and administrative activity with the prevalent laws, the regulations, the rules, and the resolutions.
4. Ensuring the transparency, the impartiality, and the obviousness of the public performance, and to reinforce the credibility and the reliability of the economic, financial, and administrative policies of the NPA.

On October 2010 FACB issued an Ordinance no. 1 for year 2010 for the adoption of Palestinian Governmental Audit Standards (PGAS) which stated in the Articles no. (4) that "the Palestinian licensed auditors by the virtue of law of practice of auditing profession must follow those standards when auditing any of entities subject to the Bureau's mandate, and they shall disclose their compliance in the auditor's report". And articles no. (5) revealed that "the auditor must comply with the code of ethics adopted in the Standards when auditing entities subject to the Bureau's mandate and their procedures". Also, the article no. (14) mentioned that "the auditor, upon discovery of financial and regulatory violations at entities subject to the Bureau's mandate, must notify the Bureau of these violations immediately and within a period not exceeding two weeks from the date of the discovery of the violations". The rest articles of the Ordinance no. 1/2010 related with organizing the relationship between the external auditors and FACB and the clients [52].

General Department of Control and Guidance (GDCG). Ministry of Local Government (MOLG) established a department for the control and guidance. This department investigates and evaluates the efficiency and effectiveness of the municipalities operations and examine the extent of compliance with the general laws, regulations, policies, budgetary announcement, instructions and procedures which issued by the MOLG related with the financial and operational activities in the municipalities. In addition to that, GDCG follows up the complaints which are posed by the citizens or any interested parties. GDCG works to increase the trust and reputation in financial and administrative policies by ensuring accountability, fairness, and clarity in public results [5].

Normally the auditors of GDCG visit each LGU twice a year and issue a primary audit report to the LGU council after each visit [53]. This report focuses on the compliance audit and significant changes that occurred between two visits; in certain cases, the department goes ahead of citizen complaints, and it follows audit reports released by the FACB and external auditors [5]. This department also participates in the evaluation of procurement bids, such as the offer for appointing of external auditors and ensuring conformity with the terms of reference for external auditing [53].

From this discussion, the study explains the importance of SAI auditing in municipalities, whether done by FACB or GDCG, and how this type of audit can affect the quality of the external audit, as well as reflect the government's interference in the direction of municipalities based on the public interest theory. The public interest theory can explain most variables behavior and the relationship among the variables of the study. Because the intervention of the government aims to achieve the general benefits for all

parties including the citizens through imposing many laws and regulations to enable the local governments units to achieve their goals in providing services to the community in an efficient and an effective way without corruption, and to enable the management to demonstrate the transparency and the accountability by issuing reliable and credible information to all stakeholders.

3   Developing the Hypotheses of the Study

As mentioned in earlier sections, there are positive correlations between audit quality and the characteristics of the auditor, the audit firm's attributes, and the effectiveness of municipal internal control. But the question of this study is there a moderating role of the SAIs on these relations? In order to answer this question, the study develops the study hypotheses through the examining of the effect of the SAIs in Palestine (FACB) on the relationship between the external audit quality and the chosen audit quality attributes in the municipalities. In addition to FACB's law no 17 for year 1995, since October 2010, FACB issued and adopted the Palestinian Government Auditing Standards (PGAS) which based on the INTOSAI and the code of ethics as amended by International Standards on Auditing (ISA) [52]. PGAS focused on the auditors' ethics and the importance of existence of an effective internal controls over the financial reporting system in the PSOs including the internal auditing, operating suitable accounting information system, and compliance with the applicable laws and the regulations. Also, MOLG approved and issued in year 2017, the Terms of Reference (ToR) for acquiring the audit services for the Palestinian municipalities. These terms stated some characteristics of auditors and audit firms, such as the auditor's ethics, independence, competency, the size of audit team and how to select the best price of audit services. In addition, MOLG issued many regulations in order to activate the internal control over the operations of the municipalities, particularly the financial reporting system. These regulations are mentored by GDCG as another SAI for the municipalities.

PGAS and ToR – MOLG required from the auditors who perform the auditing of the municipalities to compliance with Code of Ethics, and must consider these ethics: Trust, Confidence and Credibility, Integrity, Independence, Objectivity and Impartiality, Professional Secrecy, Competence, Professional Development, Political Neutrality, Conflict of interest, and Professional Skepticism [52]. Accordingly, the study manipulates the following hypothesis:

Hypothesis 1: SAIs moderate the relationship between the auditor's characteristics and the audit quality.

ToR–MOLG stated some audit firm's attributes which indicate to the size and the audit fees. ToR-MOLG mentioned the number of auditors in the engagement audit team according to the LGUs classification, moreover the ToR mentioned the specialization and ranking of the auditors in audit team for each engagement. MOLG required from the municipalities to fellow the General Purchase Law in acquiring and hiring the audit firm, which focus on the less amount of audit fees. Accordingly, the study develops the following hypothesis.

Hypothesis 2: SAIs moderate the relationship between the audit firm's attributes and the audit quality.

PGAS required from the auditors to study and evaluate the reliability of the client internal control, and mentioned in the section no. 3.4 that internal control should be studied and evaluated in accordance with the type of audit being conducted. For example, the internal control evaluations may aid in the preservation of assets and resources, as well as ensuring the correctness and completeness of accounting records. Moreover, the auditor must examine the degree of the compliance with applicable laws and regulations to provide reasonable assurance of detecting errors, irregularities, and illegal acts that could have a direct and significant influence on the financial statements [52]. Also, MOLG required from municipalities which classified A and B to establish internal auditing department in their organization structures in order to evaluate the efficiency and effectiveness of municipality's activities, and required from all municipalities to assign audit committee from the members of municipal council to monitor all financial activities in the municipalities. In addition, MOLG issued procedures and instructions to explain how to transfer from accounting cash basis to accrual basis, and motivated the municipalities for applying the accrual basis which leads to more reliable accounting system. Accordingly, the study develops the following hypothesis.

Hypothesis 3: SAIs moderate the relationship between effectiveness of the municipal internal control and the audit quality.

4   Conceptual Framework

This study develops its conceptual framework depending on its theoretical framework and on the audit quality attributes definitions as they discussed in the literature review in the preceding sections. The public interest theory is considered the main theory which can explain all the variables of the study. According this theory, the superior authorities imposes some regulations on the organizations in order to forbidden the unwanted result and to achieve specific goals, such as achieving and getting reliable and credible information from the municipalities.

The Fig. 2 depicts the effect of the SAIs on the relationship between the audit quality as dependent variable and the three main audit quality attributes as independent variables according the public interest theory.

5   Data Collection and Sample Selection

Data for the study was collected using secondary and primary sources. The secondary data was hand collected from the FACB's annual reports which issued regularly in the period from 2011 to 2020 except annual report of year 2013, and the interim and the specialized reports which were issued sometimes in this period, these reports are available at FACB's (old name SAACB) web site https://www.saacb.ps/BruRptsTestS AACB/IndexRPTArabic). Also, the study examines some reports which issued by the MOLG through the GDCG auditors, but these reports are still confidential and are not
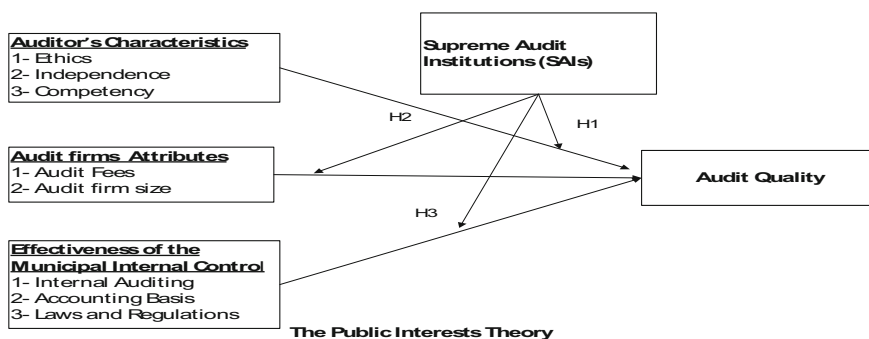
Fig. 2. The study conceptual framework

available for the public regularly, but the researcher got some of them for the study purpose through personal communication with some municipalities. The primary data was collected using questionnaires, which were sent to auditors who are registered in the Palestinian Association of Certified Public Accountants (PACPA) for year 2021 in the West Bank of Palestine. The total number of external auditor is 238 as the registration list of auditors in PACPA which was updated in 13/09/2021 including 23 auditors from Gaza Strip (GS) of Palestine, therefore, the population of the study includes 215 individual professional auditors.

5.1 Reports of SAIs

The effectiveness and strength of SAIs are influenced by the reports they issue, the impact they have on society, and their ability to combat corruption, preserve public finances, and reduce misuse of public office. The effectiveness of SAIs is determined by how quickly recommendations in these reports are implemented. It is also judged by the Legislature's ability to follow up on reports and execute the suggestions and comments contained within them. Apart from freedom and democracy, the media has an advantage when it comes to following up on these reports and bringing them to the attention of the public, which aids SAIs in achieving their objectives which helps SAIs achieve their goals: reinforcement and support to values and principles of transparency, integrity, accountability and corruption fight in their respective countries [54].

The FACB seeks a well-established professional future that will serve as the foundation for improving public performance in collaboration with all partners, in order to combat all forms of financial/administrative corruption and increase honest, transparent, and accountable management of public funds, which will support public and stakeholder confidence in the Executive's performance [55].

The FACB's audit aims to ensure that actions and procedures comply with laws, regulations, and codes, and that recommendations/suggestions are made to address existing problems in order to prevent recurrence, so that objectives are met and performance is improved without the need to look for errors. The Bureau produces reports in accordance with best international practices, particularly standards established by the International

Organization of Supreme Audit Institutions (INTOSAI), ensuring that the reports produced are objective, constructive, and contribute to the stability and development of state institutions. Moreover, data and information mentioned in the reports were reached from working at the audited bodies, where professional opinion was expressed according to Palestinian government audit standards, INTOSAI standards and ARABOSAI standards, taking into account comments made as a result of audited bodies responses to FACB reports [54].

The FACB's goal is to make audit findings available to stakeholders and decision-makers, since this will increase the number of recommendations followed up on and foster audit culture at audited institutions. This is will aid in the implementation of preventative actions [55].

The Annual Reports of the FACB. The annual report of the **FACB** is published in accordance with a legislative necessity that this report be released on an annual basis, as stated in article 8 of the SAACB (FACB) Act 15/2004, which amended by decree law 18/2017 article 5 "President of the Bureau shall present reports that contain actions and observations on annual basis, or upon request, to Mr. President of State, the legislative council and council of ministers" [56]. Since the publication of reports began, and since the enactment of Law 15/2004, the FACB has released its fifteenth report online as proof of conformity with the law's terms [57]. In order to promote transparent, honest, and clear public performance, as well as increase credibility and trust in the state's financial, managerial, and economic policies, the FACB conducted general assessments of reporting impact at short-term or long-term. In this regard, the most essential recommendations were made, which identified the impact of audit reports based on the scope of each audit department in FACB which has eight departments; Economy, Social and cultural services, Infrastructure, NGOs, Security and governance, Local government, Performance audit, and Information technology [57]. But the local government department has special importance among other departments of FACB, because the average percentage of audit reports are related with the local government units reach more than 42% of total FACB reports, sometimes reach more than 50% as year 2017 where was reached 57%. Also, the percentage of the complaints received about the local government sector reached more than 29% in average.

By reviewing the FACB annual reports which are issued from year 2011 to year 2020, the Table 1 summarizes information about the total number of annual audit reports for all sectors and departments, the number of reports are related for local government audit departments and their percentage, the total number of complaints are reached to FACB from all sectors, the number of received complaints are related with local government units and their percentage, the number of local government under the jurisdiction of the FACB, the number of the municipalities which were audited through the study period, and the percentage of respondents for the FACB notes and recommendations which are reported in the audit reports:

The most of the FACB's reports are related with compliance audit which occupied more than 68%, 63%, and 82% in year 2018, 2019 and 2020 respectively, while the financial and performance audit occupied the rest. This is confirmed that compliance of the applicable laws and the regulations is very important in the public organizations

Table 1. Summary of FACB audit reports

The years/Items	2011	2012	2014	2015	2016	2017	2018	2019	2020	Average
Number of report	156	123	104	118	119	123	139	125	115	125
Audit report for LGUs	55	50	25	37	43	70	71	63	60	53
LGUs reports %	35%	41%	24%	31%	36%	57%	51%	50%	52%	42%
The responds rate	70%	66%	72%	71%	79%	63%	79%	81%	72%	73%
Total LGUs in palestine	435	435	435	435	441	441	441	571	571	464
Municipality audited	7	35	12	16	17	20	25	21	17	19
Percentage of municipalities to audit reports for LGU	13%	70%	48%	43%	40%	29%	35%	33%	28%	38%
Complaints received	306	267	352	360	485	412	360	319	174	337
Complaints of LGUs	*	28	64	111	106	143	152	95	76	97
Percentage of complaints of LGUs	*	10%	18%	31%	22%	35%	42%	30%	44%	29%
Complaints of municipalities	*	*	*	*	51	20	19	16	16	24
Percentage of municipalities to LGUs complaints	*	*	*	*	48%	14%	13%	17%	21%	22%
Orders of ACC	*	*	*	*	120	65	125	52	36	80
Processed orders	*	*	*	*	112	53	74	38	31	62
Cases are transferred to ACC	33	29	37	27	24	*	*	*	*	30
LGU cases transferred to ACC	13	17	*	11	14	23	11		26	19
Financial impact LGU in USD	12,378,789	3,921,820	689,138	895,409	*	*	19432978	*	*	7463627
Total financial impact in USD	22,624,116	7,828,990	4,441,470	20,316304	*	*	*	*	*	13802720

<div align="right">(continued)</div>

Table 1. (*continued*)

The years/Items	2011	2012	2014	2015	2016	2017	2018	2019	2020	Average
Attendance tenders	414	550	676	*	368	*	*	*	*	402

*Missed data in the origin source

sector and enhancing the strength of the internal control in all aspects including the financial and reporting system. Moreover, the cooperation between the FSCB and Anti-Corruption Commission (ACC) increases the efficiency and effectiveness of the notes and the recommendations of FACB, particularly when the FACB transfers the fraud cases to ACC and to corruption courts, and when the FACB investigates the fraud cases according to orders of ACC and the orders of the state president and the corruption court. Table 1 shows that the average fraud cases which were transferred annually by the FACB to ACC around 30 including 16 cases related to the LGUs. And the average orders of ACC which are provided to FACB for investigation and auditing reach more than 80 orders per year, and 62 orders of them are processed and transferred to ACC again. This is leading to make all entities to be awareness for any violation of the applicable laws and regulations and do all best efforts in compliance of these laws and regulations, which they require from the management of PSOs to maintain strong internal control, implement a proper accounting system, and follow the applicable accounting principles. As resulted by audit tasks, and due to failure to fully commit with laws, regulations and instructions at some local government bodies, their duties have not been undertaken effectively, efficiently and reasonably, which made revenues of local government bodies and PNA drop at 22624116, 7828990, 4441470, and 20316304 USD for the years of 2011, 2012, 2014, and 2015 respectively, but the revenues of local government units only dropped by 19432978 USD in year 2018. And the average annual financial impact of the FACB audit report was 13802720 USD including 7463627 USD in the LGUs which represents more than 54%, which means the importance of the local government units, and the degree of interests of the FACB audit in the local government sector.

The Table 1 shows a high level of responds rate for FACB audit reports, this rate reached around 73% in average, which interprets the usefulness of the FACB audit reports recommendations in improving the efficiency and the effectiveness of the operations of the entity including the operations of the financial reporting system. Almost the responds on the FACB audit reports confirmed that the entities will fellow and apply the FACB recommendations which relates with the compliance of applicable laws and regulations which they rule the operating activities of the public entities.

The most sensitive activities of the PSOs which relating are with the process of bidding, therefore, some employees of FACB attend the bidding meetings for opening and evaluating the tenders as controller member in the tender's committee, in order to monitor the purchase procedures which must be compliance with the Palestinian Public Purchase Law and regulation. The Table 1 shows that FACB employees attended 414,

550, 676, and 338 bidding meetings in the years of 2011, 2012, 2014 and 2016 respectively. FACB always issues many notes and recommendations are relating to violation of the policies and the procedures of the tendering process. For examples:

- There have been instances where the offer price and the expected cost of public works tenders have been significantly different.
- There have been reports provided to technical committees that did not meet formal and objective procurement technical criteria.

The notes and the recommendations of the FACB auditing department of the local government cover all the aspects of the financial and internal control systems including the internal auditing function. Each year, FACB issues annual reports which interested with the result of the annual auditing activities. These reports include yearly many hundreds of notes and recommendations are related with the auditing of local government units, and most of these notes and recommendations are relating with compliance of the public entities with the applicable laws and the regulations. And some of these notes and the recommendations were relating with the accounting system and the internal control system, the Table 2 summarizes the most important notes and the recommendations which they are mentioned in most FACB annual audit reports directly and indirectly and the related audit quality attributes which may affect by these notes and recommendations.

Most above notes and recommendations focus on the internal control system and their dimensions; internal auditing accounting system (accounting basis) and the compliance of the applicable laws and regulations. FACB reveals in its annual audit for year 2018 that the majority of local entities have weak financial and accounting systems, and the application of accounting standards – on which financial reports with action findings are produced – is generally poor. And accounting software employed by some local bodies has several flaws and difficulties, making it vulnerable to change, deletion, or loss [56].

The annual audit reports of FACB include many specific notes and recommendations for specific municipalities are dealing with some audit quality attributes, for examples, the following audit notes criticize the applying of accrual accounting basis and cash basis in specific municipality in report of year 2018 as follows:

- In violation of international accounting rules, the municipality did not disclose the accounting policies used to record the grant in the financial statements, and it also did not describe the nature of the grant.
- Despite the accounting accrual concept, waste charges from past years were recognized in their (current) books in 2016.
- In the accounting system, the municipality did not record the expenses and allowance for doubtful debts for the year 2016, as accrual accounting basis requirements.
- In the balance sheet of 2016, the municipality did not make any changes to the provision for doubtful debts.
- There are some errors in recording financial transactions as some expenditures were reported on items that were not assigned to them in the budget, and no transfers between items were done.

Table 2. General notes and recommendations of FACB reports and the audit quality attributes

#	The notes and the recommendations	The audit quality attribute
1	Employees at certain local governments abused their power and misused funds	Weakness of internal auditing
2	Spending can occasionally be done without all of the necessary documentations	Weakness of internal auditing
3	Violation of the provisions of building and organization code for local authorities of 1996 in terms of taking into account licensing fees, fees of violations and granting discounts	Failure to comply with the laws and regulations
4	Some local governments failed to implement the code of conduct for local government employees	Failure to comply with the laws and regulations
5	Some municipal governments do not always follow academic concepts and legal procedures when hiring new employees	Failure to comply with the laws and regulations
6	Violation of provisions of code for supplies and implementation of projects at local authorities regarding supplying, executing or servicing	Failure to comply with the laws and regulations
7	Lack of internal control at some local government entities and lack of robust internal control system that safeguards assets	Weakness of internal control
8	Violation of laws, regulations and ordinances that regulate budget and revenues/expenses measurement	Failure to comply with the laws and regulations
9	Some of municipalities have no external auditors	Quality of financial statement
10	Accounts of local government entities are unreliable and raise doubts about accuracy, authenticity and occurrence because of lack of corroborating documents and regulating documentation cycle	Accounting Basis
11	Some local government entities failed to collect fees set in applicable laws and regulations, especially fees of billboards, crafts and industries	Failure to comply with the laws and regulations

Table 2. (*continued*)

#	The notes and the recommendations	The audit quality attribute
12	Accounting software may not satisfy Some local government needs since it does not incorporate actions or assign user authorities, leaving financial statements vulnerable to loss, damage, and deletion, as well as raising doubts about their legitimacy and fairness	Weakness in accounting Information System and Accounting basis
13	The Municipality did not follow laws and decisions regarding its participation in licensed electricity distribution companies	Failure to comply with the laws and regulations
14	The Municipality failed to comply with the electricity tariff set by the Council of Ministers in 2017	Failure to comply with the laws and regulation
15	Weakness in the internal supervision and audit system	Audit quality
16	A disorder in the application of the financial system	Accounting basis
17	The financial system's insufficient promises to local governments in terms of spending, budget planning, and document reinforcement	Weakness in Internal Auditing
18	The failure to prepare the financial position in accordance with regulations and legislation	Accounting Basis and violation of laws and regulations
19	Weakness in audit regulations that govern spending, which resulted in weakness in availability of tight internal control system	Internal control and internal auditing
20	Some local government units may not do proper bank reconciliations to keep track of their bank accounts	Weakness in Internal Auditing
21	Many local governments fail to manage public finances, owing to a lack of control systems and division of powers, which has resulted in cases of misappropriation, credit misuse, and public funds theft	Weakness in the internal control system

- In other LGU, the checks and bank transfers are not dealt with on a cash basis since they are recorded in the journal on the cash receipts side but not on the bank receipts side, making it difficult to handle problems when they occur.

These notes and recommendations do as warning of all local governments units' managements to avoid them and to improve their internal controls and accounting information systems. This is leading to make enhancement of external audit quality through producing high quality financial statements which they considered as input for the external auditing process. But the other inputs of the auditing process such as the audit characteristics (auditors' ethics, competency, and independency) and the audit firm attributes (audit fees and audit firm size) are not mentioned directly and clearly in the FACB audit reports notes and recommendations, but when the FACB auditors are performing the audit process, they may consider the auditor characteristics and audit firm attributes as the provisions of the TOR of hiring of the auditor and the Palestinian governmental auditing standards which they stated these characteristics and attributes.

FACB interested more in the internal control system in the municipalities and other LGUs, because it impacts on all operations in the entity including the quality of the financial reports and the auditing process, therefore the FACB conducted special evaluation for the internal control system in all entities under its jurisdiction including the local government units in years 2007 and 2014. The evaluation of internal control aims to discover the weaknesses points in internal control of the PSOs in order to inform the management to do improvements in the internal control and the accounting systems which they are under management responsibility. The two evaluations nearly use the same components of internal controls particularly, the accounting system and the effectiveness of the internal auditing and control unit, but, they use different measurements as the following tables show, Tables of 3, 4, and 5.

Table 3. Evaluation the internal control and internal auditing and control units

The Degree/Year 2007	Excellent	Good	Medium	Weak	Not Exist	Total LGUs
Internal control system	0	2	6	14	0	22
Auditing and control units	1	0	0	3	18	22

The source of data: [58]

The sample of LGUs in the second evaluation in year 2014 includes 21 municipalities and local villages councils, while the sample of the first valuation in year 2007 include 22 different municipalities. The following Table 5 shows the result of the second evaluation on 2014.

The comparison between the result of the two evaluations reveals that effectiveness of the elements of the internal control is increased in year 2014 particularly the using of integral accounting systems and the computerized systems, but the performance of internal auditing and control units is still low despite the number of these units is increased to 11 units while it was 4 units in year 2007.

MOLG General Department for Controlling and Guiding Reports. MOLG issued and approved the Manual of Procedures for Monitoring the Work of Local Authorities

Table 4. Evaluation of the internal control elements in the LGU in year 2007

#	Element of internal control	General Reliability Rate
1	Organizational structure	40%
2	Job description	41%
3	Integral accounting system	67%
4	Computerized system	0
5	Development HR	41%
6	Performance evaluation	30%
7	Separation of duties	60%
8	Effective control unit	9%
9	Internal control system	40%

The source of data: [58]

Table 5. Evaluation of the internal control elements in the LGU in 2014

Element of internal control	High level 80% to 100%	Medium level 60% to 79%	Low level less 60%	General level
Number of LGUs	0	9	12	Low
Administrative structure	7	10	4	Medium
Integral accounting system	10	9	2	Medium
Computerized system	6	8	7	Medium
Building abilities	0	3	18	Low
Planning for performance	4	9	8	Medium
Internal control	5	8	8	Medium
Effective control unit	0	1	20	Low

The source of data: [59]

which stated the audit scope for the GDCG in auditing of the affairs of the administrative, financial, engineering, technical, and projects, and audit team visits the local entity twice in year and using semi-structure form which includes many questions which they are relating to audit scope particularly, the financial aspects as the cash balances, accounting records of revenues and expenses, compliance with the budget, debts, inventories, checks, and the internal controls in the accounting system. Also, the report of the audit team must

contain the question about the external audit either the audit of independent auditors or the FACB audit and the GDCG auditor asks the municipality to give him the last audited financial statements. The notes and recommendations of GDCG are more specific comprehensive, and detailed than the FACB notes and recommendations. The audit reports of GDCG are not available for the public, but the researcher collected a few reports from some municipalities, the reviewing of them reveals that most notes relate with violation of the applicable laws, regulations, policies and MOLG instructions, therefore this audit focuses on the compliance and operational audit including internal control system. Moreover, some notes are relating with the problems in application of the accounting system and the violation of the accounting principles which they ruled the recording and communicating the financial process (Table 6).

5.2 The Questionnaire

The study developed a questionnaire survey according to the audit quality literature to measure the effect of SAIs on each dimension of the audit quality attributes. The questionnaire is examined by three experience academic in audit quality who gave their suggestions and recommendations which added value to the questionnaire. The questionnaire contains two sections: the first section of the survey gathered demographic information from respondents, but the second section of the questionnaire included a series of closed-ended questions about the impact of SAIs as a moderator variable on the link between audit quality and its factors such as auditor characteristics, audit firm attributes, and effective internal control in Palestinian municipalities by using five-points Likert type scale. Also the questionnaire aims to examine the effect of the SAIs on the total audit quality in the municipalities according to the external auditors' perception by using five-points Likert type scale. The questionnaire contains 11 questions: 4 questions related with the dimensions of the auditors' characteristics of ethics, independence, and competence, 2 questions related with the dimensions of the audit firms' attributes of audit fees and the audit firm size, 3 questions related with the dimensions of the effective of the internal control, and 2 questions related with the effect of the SAIs on the total audit quality.

The professional organization (PACPA) informed its members, who totaled 215 auditors in the West Bank and were registered as CPAs in public practice records, about the study via a cover letter prepared by the authors explaining the study's purpose as well as a link through which the auditors could access the questionnaire. The information was gathered using online survey software. A total of 78 valid surveys were returned by respondents, resulting in a 36% effective response rate.

6   Demographic Characteristics

Demographic details of the 78 respondents are shown in Table 7. The majority of auditors who responded were over the age of 50, accounting for 59% of all responses. The most of the auditors that participated in this study were men (95%). The majority of the participants in the survey (69.2%) were ranking partners, which meant they had an

Table 6. The notes and the recommendations of MOLG GDCG

#	The notes and the recommendations	The audit quality attribute
1	Payment vouchers can be given without all of the required documentation, approvals from appropriate authorities, beneficiary signatures, dates, and some data	Weakness of internal auditing
2	Budget and revenue/expenses measurement laws, regulations, and ordinances are being breached	Failure to comply with the laws and regulations
3	Some of municipalities have no suitable software for accounting, and using excel of paper records without fellow the proper internal control	Internal control over accounting system
4	Accounts of local government entities are untrustworthy and raise concerns about accuracy, authenticity, and occurrence due to a lack of supporting documentation and a governing documentation cycle	Accounting basis
5	Violation for some procedures of store keeping, particularly the complete records, physical counting and evaluation and organization of the items	Failure to comply with the laws and regulations. And weakness of internal auditing
6	Accounting software that does not incorporate actions or assign user authorities may not satisfy the needs of some local governments, leaving financial statements subject to loss, destruction, and deletion, raising doubts about their authenticity and fairness	Weakness in accounting Information System and Accounting basis
7	Spending cash more the limit for 50 JOD without using the current checks, and may use postpone check, this is violation for the financial regulation	Failure to comply with the laws and regulations. And weakness of internal auditing
8	Violation of income tax for the employees' salaries and the wages of the council members'	Weakness in internal auditing
9	Failure to create the financial statement in line with applicable requirements and laws	Accounting basis and violation of laws and regulations
10	There is no cash insurance coverage, and no real cash counting is done on a regular basis. Some municipal governments may not perform proper bank reconciliations in order to keep track of their bank accounts	Weakness in internal auditing

average of over 15 years of auditing experience which represent (73.1%). The increased proportion of men in the sample can be attributed to the participants' long average experience and high rank of job position, particularly in Palestine, so the women's participation in the public jobs is still weak and in the beginnings. Moreover, the level of education in accounting for the participants is very high: 6 have PhD degree, 30 have master, and 39 have bachelor's degree in accounting all of them are representing more than 96% of the participants, and more than 69% of the participants have experience in the auditing of the municipalities and they are familiar in the role of the SAIs in these municipalities. This means that the result of this survey may reliable and useful in exploring the effect of the SAIs in the relationship of the audit quality and the audit quality attribute which they are chosen by this study.

Table 7. Demographic characteristics

The characteristics	Frequency	Percent
The Age		
Less than 30 years old	3	3.8
30-40 years old	14	17.9
41-50 years old	15	19.2
More than 50 years old	46	59.0
Total	**78**	**100.0**
The Job Position		
CPA Partner	54	69.2
CPA Employee	16	20.5
Audit Manager	3	3.8
Senior Auditor	5	6.4
Total	**78**	**100.0**
Practical Experience		
Less than 5years	3	3.8
6-10 years	4	5.1
11-15 years	14	17.9
More than 15 years	57	73.1
Total	**78**	**100.0**

The characteristics	Frequency	Percent
The Gender		
Male	74	94.9
Female	4	5.1
Total	**78**	**100.0**
The education		
Less than Bachelor Degree	2	2.6
Bachelor's Degree in Accounting	39	50.0
Master Degree	30	38.5
PhD Degree	6	7.7
Non-accounting degree	1	1.3
Less than Bachelor Degree	2	2.6
Total	**78**	**100.0**
Industry Experience		
Yes	54	69.2
No	24	30.8
Total	**78**	**100.0**

The respondents answered self-constructed questionnaires, which had an internal consistency of 0.777 based on the Cronbach Alpha, and it will be 0.67, 0.706, 0.73, and 0.77 based on the Cronbach Alpha if the following variables are deleted: auditor's characteristics, audit firms' attributes, effectiveness of internal control, and audit quality, respectively as the Table 8 shows.

Also, the reliability and consistency of all questions in the survey was 0.884 based on the Cronbach Alpha, and it will not be less than 0.856 based on the Cronbach Alpha if any question is deleted as the Table 9. This mean that the result of the study may dependable to explore the if there is a relationship for the SAIs on the relationship between the audit quality and its attributes: auditors' characteristics, audit firm attributes, and the effective internal control in the municipalities.

7   The Result

The audit of SAIs is moderating the links between the audit quality and the audit quality attributes of auditors' characteristics, audit firm's attributes, and effective internal control in the municipalities, because it has an effect on the audit quality as dependent variable

Table 8. The reliability of respondents and the descriptive statistics of mean and std. deviation of the study variables

The variables of the study	N	Mean	Std. deviation	Cronbach's Alpha if item deleted
The Effect of SAIs on Auditors Characteristics	78	3.8013	.91998	.670
The Effect of SAIs on Audit Firms Attributes	78	3.2564	.87810	.706
The Effect of SAIs on Effectiveness of Internal Control	78	3.9060	.56573	.730
The Effect of SAIs on Audit Quality	78	3.7885	.72756	.770

and has an effect on the audit quality attributes as independent variables as the descriptive analysis shows in Tables 8 and 9. And this effect was on the different levels depending on the nature of the independent variable, as example, the respondents perceived that the effect of SAIs on the relationship between the audit quality and the effective internal control is a medium level of significant, because the mean of the respondents on the five-points Likert scale was 3.9, but the SAIs have not effect on the relationship between the audit quality and the audit firms' attributes, therefore, the mean of the respondents on the five-points Likert scale was 3.2. Whereas this effect is a little above average between the audit quality and the auditors' characteristics because the mean of the respondents on the five-points Likert scale was 3.8. Table 9 shows that the SAIs have weakness effect on size of the audit firm, and have slightly significant effect on the compliance of laws and regulations, whereas the rest audit quality attributes' constructs are locating in the average mean of the related audit quality mean. Moreover, the SAIs have medium effect on the total audit quality as the mean of respondents which was 4.06 on the five Likert scale, whereas the using of the reports of SAIs by the external auditor was weakness as perceived by the respondents, so the mean of the respondents was 3.5 on the five Likert scale.

The result of the questionnaire supports the result of the analysis of annual SAIs' reports for the period which started year 2011 to year 2020, which they revealed that ASIs have significant effect on the effective internal control and its dimensions through issuing many notes and recommendations about the violation of the laws and regulations, the using ineffective accounting procedures and the lake of the documentation of the financial transactions. Moreover, the SAIs mentioned many notes on weakness of the auditing and controlling department, but there is a little notes treats the external auditor characteristics and the audit firm's attributes except those regulations and instructions which they rule the audit process.

Table 9. The reliability of respondents and the descriptive statistics of mean and std. deviation of the study variables dimensions

The study variables dimensions	N	Mean	Std. deviation	Cronbach's Alpha if item deleted
The Effect of SAIs on Auditor Ethics	78	3.85	1.106	.856
The Effect of SAIs on Auditor Independency	78	3.85	.941	.863
The Effect of SAIs on Auditor Competency	78	3.82	1.029	.862
The Effect of SAIs on Audit Fees	78	3.50	1.016	.866
The Effect of SAIs on Audit Firm Size	78	3.01	1.000	.883
The Effect of SAIs on Internal Auditing	78	3.78	.767	.875
The Effect of SAIs on Accounting Basis	78	3.78	.847	.884
The Effect of SAIs on Compliance of Laws and Regulations	78	4.15	.704	.884
The Effect of SAIs on Audit Firm to assign Competent Auditors	78	3.69	.984	.865
The External Auditor Uses the SAIs Reports	78	3.51	.936	.886
The Effect of SAIs on the Total Audit Quality	78	4.06	.762	.880

8   Conclusion and the Study Implementations

The outcome of this study offers an important insight into the moderation role of the SAIs in the relationship between the external audit quality and the audit quality attributes in the municipalities of Palestine as a developing country which has a new experiment of opening the municipalities to external auditing besides of the auditing of SAIs which may play a moderation role on the relationship between the audit quality and the attributes of audit quality as the result of this study confirmations, but the level of this role depends on the nature of audit quality attributes. Therefore, this role influences on the effective internal control more than the auditors' characteristics, but its influence on the audit firm's attributes is very weakness. A major contribution of this study is the helping of policymakers in the municipalities and the audit firms to consider the impact of auditing of SAIs on external audit quality in the municipalities when they decide on

the audit engagement's agreement. As a result, the external auditor may use the audit reports of the SAIs as audit evidence and helping him in evaluating the audit risk and the effectiveness of the internal control in the municipalities. This is leading to make the cost of auditing more reasonable and at minimum level. Also, the SAIs auditor may benefitted the external audit team through the field works and the interaction between them to exchange the experiences in the audit engagements. Moreover, the SAIs may support the external auditors in the evaluating internal control in the municipalities and motivate them to detect the violations of the applicable laws and regulations which have direct effect on the fairness of the financial statements. This study chosen only three audit quality attributes, therefore more researches are needed to examine the role of the SAIs on other audit quality attributes in the municipalities, such as the audit professional regulators, and future researchers may examine the same variables in long period by using different research methodologies such examine all audit reports of FACB either annual or specialized reports with perception of the accountants, audit committee members, and internal auditor.

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Governance, Technology and Optimal use of Resources

Regression Models of Agricultural Production: Evaluation of Data on Russian Regions

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Abstract. The study was based on the development of regression models that characterize the activities of agricultural enterprises in the regions of Russia. Official statistical information on 65 regions of Russia for 2017 and 2018 was used. The conducted research made it possible to identify factors (fixed assets, wages of employees, ratio volume of crop production to livestock production, arable land area) that affect the volume of production in the agricultural sector in the regions of Russia and suggest using four-factor regression models of high quality to describe this influence. The developed regression models are effective management tools that allow assessing the level of use of financial and labor resources. The acquired new knowledge and tools for assessing the activities of agriculture in the Russian regions are of academic and utilitarian value. Results of this study can be used in measuring of the agricultural sector of the economy, monitoring of production volumes, in determining the needs for resources necessary for the development of agriculture, substantiating plans and programs for its development.

Keywords: Agriculture production · Regression model · Volume of production · Regions of Russia

1 Introduction

To date, agriculture in Russia has received significant development. Currently, it is among the top four countries that have the largest areas of arable land. According to some estimates, about 9% of the world's farmland is located in Russia [17]. The solution of managerial tasks in the Russian economy requires an understanding of the factors that affect the volume of agricultural production. In Russia, there is currently an urgent need for accelerated development of agriculture. The efficiency of agricultural production, as one of the directions of increasing the productivity and competitiveness of this branch of the economy, is directly related to the use of resources, with the degree of their involvement in the production process. To a large extent, efficiency depends on the quantitative and qualitative ratio of resources among themselves, on their balance. Determining the cost structure that ensures an increase in output per unit of resource becomes an urgent

task of the management system. The justification of the resources mandatory for the successful operating of agriculture can be relying on regression models.

Scientific publications conducted in the twenty-first century have demonstrated the possibility of economic analysis of the activities of farmers who specialize in crop production and animal husbandry using regression models. These mathematical models describe the dependence of agricultural output volumes on factors describing capital and labor costs [4, 15, 16]. Most scientific publications considered data for a number of years (the so-called time series). For example, in the article [8], according to the agricultural sector of India, the efficiency of farms was evaluated using the Cobb-Douglas production function. Evaluation of agricultural production in China was described in the article [1]. While data were analyzed in 12 prefectures during the period from 2009 to 2019. In contrast to the above articles, the study [10] developed models using spatial data for 25 provinces of Cambodia. Four models were built corresponding to the information for each of the four years from 2012 to 2015. Capital and labor costs were used as factors influencing agricultural production volumes in most previously performed scientific studies [3, 14, 19, 20].

The purpose of our research was to develop economic and mathematical models to assess the impact of indicators characterizing the use of resources on agricultural production in the regions of Russia. Our study responds to the calls for taking into account the regional characteristics of agricultural production, formulated in publications [12, 23].

Our article makes a certain contribution to the knowledge about the regional peculiarities of the development of agriculture in Russia. The theoretical contribution is related to the methodology proposed by the authors, which makes it possible to assess the dependence of agricultural production volumes on factors such as fixed assets, wages of employees, ratio volume of crop production to livestock production, arable land area discussed on the development of economic and mathematical models representing regression models. Based on empirical data in the course of the study, new knowledge was obtained about the impact of each factor on the volume of agriculture production. In addition, regions were identified in which high and low values of resource efficiency were noted.

The structure of this article is given below. The following section provides an overview of scientific publications characterizing the production volumes of the agricultural sector in Russia and its regions. The third section presents the methodology and design of the study. The results of empirical data modeling are given in section four. The fifth section is devoted to the discussion of the developed regression models. The sixth section contains conclusions, followed by bibliographic references.

2   Literature Review

Regression models describing the activities of enterprises, organizations and farmers in the agricultural sector of Russia and its regions aroused some interest among researchers. The most interesting of such studies carried out in recent years are presented in Table 1.

Table 1. Characteristics of Russian studies.

Authors	Factor of capital	Factor of labor	Research object
1	2	3	4
Shestakov and Yakovlev, 2020 [21]	Capital expenditures	Labor costs	Agricultural production volumes for 2005–2018 in Russia as a whole
Tolmachev, 2011 [22]	Indices of the physical volume of fixed assets	index of total working time expenditures	Indices of the physical volume of agricultural products in Russia for 1996–2008
Potapov, 2020 [18]	Costs of mechanical engineering products, fuel and energy resources, chemical products	–	Gross agricultural output in Russia in 2011–2015
Naumov, 2017 [13]	Fixed capital	Number of employees	Production volumes in agriculture in the Chelyabinsk region for 2005–2015
Kutenkov, 2020 [11]	Cost of fixed assets	Number of people employed in agriculture per 100 hectares of acreage	three groups of regions of Russia, data for 2017
Zyukin and Zhilin, 2014 [25]	Production funds	Value of labor costs	Volume of production of the agricultural complement of the Kursk region for 2000–2011
Zhilyaskova, 2008 [24]	Fixed assets	Number of employees	Agricultural production volumes in the Rostov region for the period 2004–2006
Germanova and Rudaya, 2017 [7]	Fixed assets	Number of employed workers	Production volumes in agriculture of the Krasnodar territory for 2000–2014

Source: Compiled by the authors.

The data in Table 1 show that in most cases the objects of research are agricultural sectors in specific regions (five cases). The other three publications discuss production functions for Russia as a whole. The initial data in seven studies were time series, only one publication used spatial data for one year. In most studies (seven cases), the number of employees was used as labor costs. In two publications, the values of working time costs were considered. Data on fixed assets of agricultural enterprises were used as capital factors in six publications. In two cases, the costs of production assets were considered, and in one case, the costs of purchasing products from the machine-tool, fuel and chemical sectors. In addition, in one of the articles [24], the area of arable land was used as a factor of the production function. Thus, previous Russian scientific publications did not pay sufficient attention to the comprehensive assessment of regional characteristics of agricultural production in Russia.

3   Methodology and Design

The objects of our research were agricultural complexes and individual farmers who were engaged in crop production and animal husbandry, as well as related activities in each region of Russia. The development of regression models using time series (data for fifteen years or more) does not seem appropriate, since there is a large inflation in Russia. Taking this into account, a methodological approach was used based on the study of data on a large number of regions in one year. Since agriculture in Russia has been widely developed in sixty-five regions, the amount of empirical data was significant and met the requirements for the development of high-quality regression models. It should be noted that the advantage of using spatial data in evaluating such models compared to data for a number of years was demonstrated in the article [2].

As the factors that have the greatest impact on the total output of agricultural products, the following were considered in our study: the total cost of all capital assets in the agricultural sector of each region (factor 1), the total labor costs of agricultural workers in each of the regions (factor 2), the ratio volume of crop production to livestock production in each of the regions (factor 3), arable land area in each of the regions (factor 4). This conclusion followed from the correlation analysis of the influence of these factors on the resulting indicator, that is, the output of agricultural products. At the same time, there was no collinearity between the factors and the resulting indicator. It is essential that the use of these factors and the resulting indicator, as shown in the article [6], provides a good approximation of the initial data, since they all have the same dimension. The empirical data in our study were official statistical data for sixty-five regions of Russia for 2017 and 2018 [5]. In our study, three hypotheses were tested:

- the first hypothesis is that regression models can be used to model the production volumes of the agricultural sector in the regions.
- the second hypothesis is that regression models demonstrate the presence of stable dependence of agricultural production volumes on factors such as fixed assets, wages, ratio volume of crop production to livestock production, arable land area.
- the third hypothesis is that the factors of the total value of fixed assets of agricultural enterprises, as well as the volume of arable land available to them in both regression models affect turnover to a greater extent than the other two factors.

In the course of the study, two regression models were developed, reflecting the dependence of agricultural production volumes on the total cost of all capital assets in the agricultural sector and the total labor costs of agricultural workers in each of the regions, ratio volume of crop production to livestock production, arable land area.

4   Results

Below are the first and second regression models designed on the base of data for 2017 and 2018:

$$y_1(x_1, x_2, x_3, x_4) = 2.056 \times x_1^{0.286} \times x_2^{0.150} \times x_3^{0.035} \times x_4^{0.324} \tag{1}$$

$$y_2(x_5, x_6, x_7, x_8) = 2.238 \times x_5^{0.303} \times x_6^{0.173} \times x_7^{0.023} \times x_8^{0.292} \tag{2}$$

where y_1, y_2 - total output of agricultural products in each of the regions, billion rubles;

x_1, x_5 - total cost of all capital assets in the agricultural sector in each of the regions, billion rubles;

x_2, x_6 - total labor costs of agricultural workers in each of the regions, billion rubles;

x_3, x_7 - ratio volume of crop production to livestock production in each of the regions;

x_4, x_8 - arable land area in each of the regions, thousand hectares.

Table 2 shows the analysis of the model's quality. It presents the calculated values of the correlation and determination coefficients, Fisher-Snedecor and Student's tests (column 2), as well as the significance of the Fisher-Snedecor test and p-values for Student's test (column 3).

The correlation coefficients more 0.9 and close to 1 in both regression models. Regression models are known to be of high quality when determination indexes are more than 0.8. The difference between 1 and this coefficient demonstrates the effect of variables not included in the regressions under consideration is 8.3%. The calculated statistic values (166 and 165) are higher than the table value of the Fisher-Snedecor test, which is 3.98 at a significance level of 0.05. For both regression models, all calculated Student test values for the coefficient and the exponents are in the range from 2.67 to 6.75; in absolute value they exceed the table amount, which is 1.99 at a significance level of 0.05. Results presented in Table 2 allow us to conclude that there is a high quality correlation between the resulting values and the four factors of the regression models (1) and (2). All levels of significance given in column 3 of Table 2 have values less than 0.01. Therefore, the coefficients of the developed regression models and the degree values in these regression models are statistically significant with the precision of 99%.

The data obtained allow us to make a general conclusion that the developed regression models (1) and (2) fully meet the econometric requirements and, therefore, can be used to describe the dependencies of agricultural production volumes in the regions from discussing factors. Consequently, the first hypothesis was confirmed.

Table 2. Values of calculated statistics.

Characteristics	Model (1)	Model (2)	Significance level
Determination coefficient	0.917	0.917	–
Correlation coefficient	0.958	0.957	–
Standard error	0.257	0.258	–
Calculated value of the Fisher-Snedecor test	166.260	164.905	Less than 0.01
Calculated value of the Student's test for y-intersection	2.675	3.041	Less than 0.01
Calculated value of the Student's test for x_1 and x_5	5.088	5.906	Less than 0.01
Calculated value of the Student's test for x_2 and x_6	3.457	2.882	Less than 0.01
Calculated value of the Student's test for x_3 and x_7	5.544	3.638	Less than 0.01
Calculated value of the Student's test for x_4 and x_8	6.748	5.999	Less than 0.01

Source: Calculated by authors.

5 Discussion

The developed regression models (1)–(2) prove the influence of fixed assets, wages, the ratio of the volume of crop production to the production of livestock products, the area of arable land on the volume of production of enterprises and entrepreneurs belonging to the rural sector. The developed regression models show the presence of established stable dependencies of agricultural production volumes in the regions on the factors under consideration for the period from 2017 to 2018. Thus, the second hypothesis was confirmed.

The degree values for the four factors in the developed models are greater than zero. Consequently, an increase in the values of each of the four factors can be used to increase the total volume of agricultural production. In the entire range of changes in the values of factors, the resulting indicators do not reach the maximum values. This indicates the possibility of increasing agricultural production in each of the regions of Russia under consideration. In all regions there are significant reserves for the further development of enterprises in this sector of the economy, including on the basis of the following measures:

- increasing the number of enterprises and the number of employees employed in them;
- increasing the volume of fixed assets;
- increasing the ratio between crop production and animal husbandry;
- expansion of the area of arable land or yield.

Factors of the total value of fixed assets of agricultural enterprises, as well as the volume of arable land available to them in both regression models affect turnover to a greater extent compared to the other two factors. This follows from the comparison of the values of the degrees in the first and second regression models. Thus, the third hypothesis was confirmed. Comparison of total output of agricultural products according to data for 2017 and 2018 shows that the values of this resulting indicator (equal to the sum of the values of degrees in regression models) are almost the same and amount to 0.795 (regression model 1) and 0.790 (regression model 2). This suggests that with the simultaneous increase of four factors, the growth of agricultural production over the years under review was almost the same. The return on scale in agriculture over the years under review was less than 1. This situation is due to the fact that most farmers have a small number of workers. Therefore, the possibilities of specialization of employees are limited, and they are forced to perform a variety of functions. As shown in [9], this leads to a relatively low level of personnel training, a decrease in labor productivity and, as a consequence, low resource efficiency at such enterprises.

To increase agricultural production in the Russian regions, it is advisable to ensure the simultaneous growth of all four factors.

A comparative analysis of the actual values of production volumes and the data predicted on the basis of the regression model (1) showed a high level of resource efficiency in 2017 in the following regions: Krasnodar territory (10.3%), Samara region (12.2%), Orenburg region (12.6%), Rostov region (12.6%), republic of Tatarstan (13.6%), Altai republic (13.8%), Saratov region (13.9%), Volgograd region (14.1%), Trans - Baikal territory (17.5%), Kurgan region (22.0%), republic of Kalmykia (23.7%), republic of Tyva (28.5%). The deviations of the actual values from the predicted values are indicated in parentheses. The low level of use of the considered factors of production was in such regions as Khabarovsk territory (−19.3%), Vologda region (−16.6), Tver region (−12.3%), Kirov region (−12.3%), Primorsky territory (−11.9%), Kostroma region (−11.8%), Vladimir region (−11.5%), Kaluga region (−11.5%), Yaroslavl region (−11.1%).

A comparative analysis of the actual values of production volumes and the data predicted on the basis of the regression model (2) showed a high level of resource efficiency in 2018 in the following regions: Krasnodar territory (10.1%), Orenburg region (10.8%), Rostov region (10.9%), Saratov region (11.1%), Volgograd region (11.7%), republic of Tatarstan (11.8%), Samara region (12.3%), Altai republic (13.2%), republic of Sakha (14.2%), Kurgan region (19.9%), republic of Kalmykia (21.6%), republic of Tyva (32.2%). The low level of use of the considered factors of production was in such regions as Vologda region (−15.8%), Khabarovsk territory (−15.8%), Primorsky territory (−13.9%), Kostroma region (−12.4%), Kirov region (−12.4%), Kaluga region (−11.2%), Yaroslavl region (−10.9%), Vladimir region (−10.7%), Tver region (−10.5%), Smolensk region (−10.1%). The above lists showed that most of the regions in 2018 retained their characteristics shown in 2017.

6 Conclusion

The conducted research has a certain scientific and practical significance. The scientific significance of the study is as follows:

- methodology for the development of regression models demonstrating the dependence of the total volume of agricultural production on four factors - the total cost of all fixed assets in the agricultural sector, the total labor costs of agricultural workers in each of the regions, the ratio of crop production to livestock production, the area of arable land in the agricultural sector. The methodology provided for the use of spatial data by region, characterizing the values of the four factors under consideration according to the results for one year. In our study, these were 2017 and 2018.
- two four-factor regression models were developed during the study. These regression models describe the dependence of production volumes in the agricultural sectors of each region on the factors under consideration.
- an increase in production in the agricultural sector improves the possibility of replacing each of the four factors with another.
- in our study, a ranking was conducted and regions were identified that are characterized by maximum and minimum use of resources.

The proposed regression models allow us to estimate the use of labor costs of agricultural workers, the cost of all fixed assets, the ratio of crop production to livestock production, the area of arable land in the agricultural sector. Therefore, it is advisable to use them when justifying programs and plans for the strategic development of regions. That is, to assess how effectively resources are being used. In addition, regression models allow us to identify an imbalance in the values of factors for each of the regions. Regression models can be used to justify programs to increase each of the four indicators, to form plans and programs for further development of agriculture.

There were limitations in the research process, since 65 regions of Russia were considered in which agricultural production has received significant development. At the same time, data on 17 regions of Russia in which the agricultural sector has not received significant development were not taken into account when constructing production functions. Further research may be related to the development of similar functions in the years following the publication of the relevant official statistics.

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A Mediation Model of Safety Performance in Small and Medium Enterprises: A Structural Equation Modelling

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Abstract. Changing work trends in the globalized environment have not only affected small and medium enterprises' growth but also its turn into enormous challenges for small and medium enterprises. Small and medium enterprises have been categorized as one of the highest risks industry due to their unique nature, weakness, and capabilities. This paper aims to examine the influence of management commitment, safety motivation on safety performance in the small and medium manufacturing enterprises. Data were collected using stratified random sampling from 300 managerial and non-managerial employees in the Small and Medium Manufacturing Enterprise sector. The data analysis process utilized completed and useable questionnaires with an overall response rate of 57%. The four hypotheses were tested using structural equation modelling (SEM) in IBM-SPSS-AMOS. The results revealed that management commitment and safety motivation have positive and significantly influence safety performance. Furthermore, safety motivation is the strongest predictor of safety performance, while management commitment, directly and indirectly, influence safety performance. Safety motivation partially mediated the relationship between management commitment and safety performance. The model accounted for 43% of the variance in safety performance explain by management commitment and safety motivation. The study added to the existing safety performance literature. This study provides valuable guidance for practitioners in determining the proactive mechanisms that can be used to improve safety performance as well as increase workplace safety.

Keywords: Management commitment · Safety compliance · Safety participation · Safety motivation · Safety performance

1 Introduction

Small and medium enterprises (SMEs) have been identified as vital to Malaysia's economic development [1]. In Malaysia's transformation plan, SMEs complement other

economic activities, and have experienced tremendous development and wealth [2]. SMEs have demonstrated a medium for a dynamic and adaptable tool in economic growth [2] and job creation [1, 3]. Despite the consistent reports on SMEs performance in economics, statistic reports on SMEs' industrial accidents is scarce. SMEs contributed eight times more fatal accident [4], more than 50% non-fatal injuries [5] and contributed a higher number of occupational-related accidents [6]. Besides that, several researchers indicated that SMEs paid less attention to implementing health and safety [7]. Given the significance of safety performance in safety management practice at the organization, policymakers, researchers and practitioners have devoted necessary resources to emphasize the factors that increase the effectiveness of safety management at workplace. In the light of the above considerations, this study focuses to examine the influence of management commitment, safety motivation on safety performance in the Malaysia's small and medium manufacturing enterprises.

The structure of this article is as follows:

1. Introduction
2. Literature Review

    2.1 Safety Performance
    2.2 Relationship Between Management Commitment and Safety Performance
    2.3 Relationship between Management Commitment and Safety Performance
    2.4 Relationship Between Safety Motivation and Safety Performance

3. Methodology
4. Result and Discussion
5. Implication of the Study
6. Conclusion
7. Reference.

2 Literature Review

2.1 Safety Performance

Safety performance, as described by prominent behavioural safety researchers, is a behaviour-based approach to quantifying workplace safety [8]. Behavioural science, which includes behavioural psychology, applied behavioural analysis, and behaviour modification, is also where the concept of behaviour-based safety [9]. The comprehensive application of psychology science to human behaviour focuses on the credentials and modification of necessary safety behaviour, such as management commitment (Safety Climate) as a catalyst for subsequent refinements of the safety problem [5].

Many researchers claimed that assessing safety performance on an individual basis yielded more exact results [5, 10]. They frequently have a low base rate and disperse data into a narrow, and skewed distribution [11]. Furthermore, some writers suggested that individual Safety Performance measures are simple to collect or access and provide valuable results [12] because individual safety outcomes are determined mainly by the individual [13].

2.2   Relationship Between Management Commitment and Safety Performance

Management commitment appears to be a consistent underlying theme in previous studies, and it appears to be a significant aspect of safety climate measurement [14]. Furthermore, a meta-analysis study found that the underlying management commitment aspect in the safety climate was a key predictor of safety performance [15]. According to [16], the safety climate is a critical determinant of Safety Performance. Aside from that, the successful intervention management commitment drive in improving employee safety performance is noteworthy [17]. Many researchers pointed that, management commitment as a most crucial factors in safety [18]. Despite the vital role of management commitment dimension in safety climate and it also has a consequence on safety behaviour [18]. Large-scale research has been performed to evaluate safety management in SMEs [19]. Therefore, we hypothesize the following:

Hypothesis 1: Management commitment is positively influence safety performance.

2.3   Relationship Between Management Commitment and Safety Motivation

The role of management commitment in predicting safety motivation has never been misrepresented empirically. An early study demonstrated that antecedent factors at the individual level such as management commitment and employee involvement has a direct effect on safety motivation, which in turn influences safety performance [8]. A meta-analytic path model shows that safety motivation was correlated with management commitment and group safety climate and strongly connected to safety performance [20]. A comparison study by [5] on safety performance in New Zealand found that the management commitment is most prominent factor to safety performance and it has a significant relationship with safety motivation. Researchers have revealed that large companies' employees have higher motivation compared to small companies [5]. From the over, we postulate that:

Hypothesis 2: Management commitment is positively influence safety motivation.

2.4   Relationship Between Safety Motivation and Safety Performance

To develop a mediation model of safety performance, which is influence by management commitment and safety motivation, this study has considered a previous model by [8] and [21]. These models recommend individual variables and management commitment as distal antecedents of safety performance. Furthermore, an work proved that antecedent at individual directly affects safety motivation, influencing safety performance [8]. Safety motivation is a key indicator of safety performance, it has a favourable impact on safety performance [21]. Safety motivation has been identified as an important factor in predicting risky behaviour in construction projects [22]. The next, hypotheses of this study are as follows:

Hypothesis 3: Management commitment is positively influence safety performance.
Hypothesis 4: Management commitment indirectly influence safety performance through safety motivation.

3   Methodology

3.1   Population and Sampling

A total of 300 employees from selected small and medium manufacturing enterprise were contacted. Selection was restricted to registered company in the Federation Malaysia Manufacturer under the three following criteria: (1) Number of employees not exceed 75 employees; (2) Location – located in the east of the country; (3) Industry – manufacturing.

3.2   Instrument and Questionnaires

The questionnaire was divided into three sections. The first section of the questionnaires contains information about the respondent's demographic characteristics. The second section addressed management commitment and safety motivation. The third section covered safety performance.

The data from the 27 items of questionnaires was collected through responses on ten-point Interval scales from 1 (strongly disagree) to 10 (strongly agree). *Management commitment items* adapted from those developed by [21] and [23] to measure employees' perceptions of management commitment on seven items. Safety Motivation Scale was adapted from [23] and it consisted of four questions. A short scale of safety performance measurement from [23] was adapted to measure safety performance in this present study. It contains three items assessing safety compliance at the workplace and three items assessing safety participation.

3.3   Data Analysis

Exploratory factor analysis (EFA) procedures were used in conjunction with IBM-SPSS 25.0 for the pilot study data. No item was removed based on the EFA results due to its high factor loading, and all retained items were rearranged for the field study questionnaire. IBM SPSS AMOS 24.0 was used to conduct the Confirmatory Factor Analysis (CFA) and SEM on fieldwork data. Following that, data analysis is used to continue developing the structural model by performing SEM procedures to estimate the relationships between the Model's constructs.

4   Result and Discussion

4.1   Descriptive Statistics of Respondents

This study presents the results of completed and useable self-administrated question-naires of 170 respondents and the information about respondents' demographics present. Based on results, many respondents were female which is 110 respondents compared to male which is 60 respondents. The majority of the respondents were in the range of 24–28 years old, followed by 19–23 years old. Besides, the highest number of respon-dents are Degree's holders which is 97 respondents represent 57% of the sample size. Lastly, the majority of the respondents are having less than 1 year of works' experience which indicate 38% of the sample size. While the minority of the respondents are having 5 years of works' experience which denote 5% of the sample size.

The value of skewness and kurtosis were measured for the purpose of normality analysis. The value of skewness and kurtosis for each construct are in the suggested range. Therefore, it can be summarized that the data in this study is normally distributed which is fulfil of the robustness of CFA to departures from normality. According to the pooled-CFA result in Fig. 1, the study showed a relatively good fit to the data, p-value = 0.00, RMSEA = 0.059, CFI = 0.951, TLI = 0.943 and ChiSq/df = 2.24. In addition, the correlations three study constructs were similar but not identical, suggesting differential relationships between constructs. These results revealed no evidence of multicollinearity since, no correlation coefficient above than 0.90.
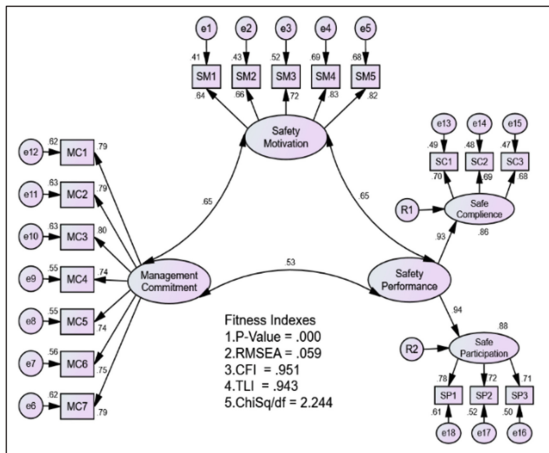
Fig. 1. The pooled confirmatory factor analysis (CFA)

Table 1 shows the result of AVE and CR for the pooled-CFA of this study. The value of composite reliability for all the latent constructs are exceeding the recommended value of 0.6. In addition, all the latent constructs have higher value of AVE which is exceeding the recommended value of 0.5. Thus, the result proved that the convergent validity and CR for the measurement model has been accomplished [24]. Next, the discriminant validity tested to ensure all the constructs in the model are not redundant to each other.

Table 1. The Average Variance Extracted (AVE) and Composite Reliability (CR)

Construct	Item	Factor loading	CR (minimum 0.6)	AVE (minimum 0.5)
Management commitment	MC1	0.79	0.912	0.596
	MC2	0.79		
	MC3	0.8		
	MC4	0.74		
	MC5	0.74		
	MC6	0.75		
	MC7	0.79		
Safety motivation	SM1	0.64	0.855	0.545
	SM2	0.66		
	SM3	0.72		
	SM4	0.83		
	SM5	0.82		
Safety performance	SC1	0.7	0.862	0.51
	SC2	0.69		
	SC3	0.68		
	SP1	0.78		
	SP2	0.72		
	SP3	0.71		

Table 2 demonstrated that the discriminant validity index for all constructs. The values presented in rows and columns are represent the correlation between the respective constructs. Therefore, the study concluded that the discriminant validity for all the constructs is attained as it was suggested by [24].

Table 2. The descriptive statistics of constructs and discriminant validity index summary for all constructs

Construct	Mean (standard deviation)	MC	SM	SP
MC	8.50 (0.21)	**0.772**		
SM	7.70 (0.55)	0.484	**0.738**	
SP	8.63 (0.24)	0.128	0.531	**0.714**

CFA analysis results shows that model achieved the condition of thresholds for validity and reliability, all the constructs are gathered into structural model.

4.2 Model Testing

Figure 2 discovered the value of the determination coefficient (R2) for safety performance is 0.44, which means that 44% of the variance in safety performance clarified by management commitment and safety motivation. The value of R2 for safety motivation is 0.43.
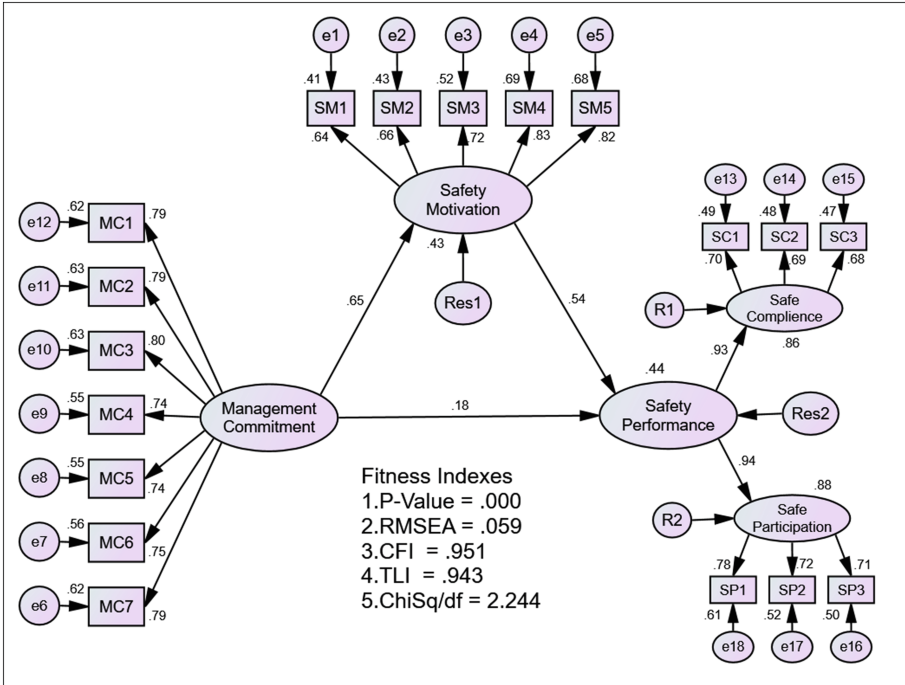
Fig. 2. The standardized regression path coefficient

Table 3. The regression coefficient and its significance

			Estimate	S.E.	C.R.	P	Result
Management commitment	➜	Safety motivation	.484	.051	9.446	.001	Significant
Safety motivation	➜	Safety performance	.531	.089	5.963	.001	Significant
Management commitment	➜	Safety performance	.128	.054	2.362	.018	Significant

The results for regression coefficient and its significance is shown in Table 3. It is shows that management commitment has a significant direct effect on safety motivation ($\beta = 0.484$, $p = 0.001$), safety motivation has a significant direct effect on safety

performance ($\beta = 0.531$, $p = 0.001$) and management commitment has a significant directly influence safety performance ($\beta = 0.128$, $p = 0.018$). Thus, it can be concluded that all the constructs in structural model were significant and provide support for the hypotheses testing.

Based on the results, the study revealed that management commitment helps in improving the safety motivation among employees in SME manufacturing. This result is in line with research finding done by [25]. It is found that the management commitment had a positive relationship with safety motivation. The researcher suggested that managers should take into responsibility and put an effort to encourage a safe workplace, so that employees safety performance can be improved [25].

According to the findings, it is proved that the higher the safety motivation among employees in SME manufacturing can help in enhancing the safety performance. This finding of this study also supported some popular result from previous research in the relationship of safety discipline [26, 27]. According to [28] high levels of individual safety motivation has a higher impact on the levels of safety performance (safety participation and safety compliance). This demonstrates the importance of management commitment in contributing role to improved safety performance. This result supports the previous study done by several researchers who study on safety performance [21].

4.3   Mediation Model

Table 4. The bootstrapping results to confirm mediation test

	Indirect effect (a.b)	Direct (c)
Bootstrapping value	0.254	0.128
Probability value	0.002	0.018
Results on mediation	Significant	Significant
Type of mediation	Mediation exists since indirect effects is significant	
	Partial Mediation since the direct effect is also significant	

The bootstrapping procedure has been used to reconfirm the hypothesis testing in Table 3 and bootstrapping results is presented in Table 4. The study employed the Maximum Likelihood bootstrapping procedure using 1000 bootstrap samples with both percentile confidence intervals, and biased-corrected confidence intervals are set at 0.95. Bootstrapping results in Table 4 shows that management commitment has a significant indirectly influence safety performance ($\beta = 0.254$, $p = 0.002$), and management commitment has a significant directly influence safety performance with involving safety motivation as the mediator in the relationship ($\beta = .128$, $p = 0.018$). Based on Table 4, researchers conclude that bootstrapping is consistent with results in Table 3. These results supported hypothesis 4, which indicated that safety motivation partially mediated the relationship between management commitment and safety performance and H_4 was supported.

This is in line with the results in study done by [29], safety motivation act as mediator in the relationship between management commitment and both dimensions of safety performance (safety performance and safety compliance). Besides, safety motivation also acts as a mediator in the prediction of mindful safety practices in Chinese Petroleum Industry [30]. The role of safety motivation as a mediator also proven in previous study done by [31].

5   Implications of the Study

The current study has various practical implications for managers to improve employee safety performance in small and medium enterprises. Firstly, management commitment can be illustrated via managers' actions to build a work environment with high priorities on ensuring safety and inspiring employees to take discretionary initiatives to participate in safety activities actively. Management can show their commitment by organizing official and non-official meetings and having conversations about workplace safety. Next, managers in small and medium enterprises should adopt high safety motivation practices to emphasize its transcending impact on workplace safety performance. A safety motivation program designed to improve employee motivation at the workplace can increase employees' tendency to improve safety performance.

6   Conclusion

The results of this study indicate that management commitment has a significant direct effect on safety performance (safety participation and safety compliance) and safety motivation. While safety motivation has a significant direct effect on safety performance. Besides, there is also an indirect effect of management commitment on safety performance mediated by safety motivation. It is can be concluded that the effect of management commitment on safety performance was partially mediated by safety motivation. These results could be used to determine the importance of management commitment, safety motivation and to validate its connection to safety performance, thus reducing errors caused by common method variance.

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The Role of Global Reporting Initiative (GRI) for Achieving Sustainability Reporting

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Abstract. Sustainability deals with companies as a social unit that influences society and is affected by it. Therefore, this society needs to know the social, environmental and economic impacts of the activities carried out by companies and report them. The objective of this research is to define the importance of both sustainability and reporting it through the sustainability accounting system through preparing sustainability reports. This research also aims at identifying the role of GRI and ESG indicators in supporting and enhancing reporting on sustainability and the extent to which they contribute to company's sustainability. It was concluded that GRI provides objective criteria and indicators that can be adopted by companies and various sectors to achieve objective measurement and reporting the level It was found that the level of sustainability reporting conducted by the companies listed in the Iraqi market for securities is weak by 19.76% due to lack awareness of sustainability importance.

1 Introduction

Since the importance of sustainability grows and is reported, attention has been paid to it by business organizations, organizations accounting and professional associations and academics, especially after accounting collapses suffered by major international companies at the beginning of the 21st century. This leads to an increase for the demand for validation of these reports ensuring corporate transparency in their environmental, social and governance (ESG). One of the most important global sustainability reporting initiatives is the Global Reporting Initiative (GRI), a non-profit organization that promotes economic, environmental and social sustainability It provides a comprehensive report(ing and reporting) which provides a framework for all worldwide companies and institutions established under the auspices of the Global Sustainability Standards Board (GSSB) which develops and endorses standards for the implementation of a globally consistent basis, interest to inform and understand the impact of companies on the economy, environment and society increasing the quality and ensuring the transparency of information to stakeholders. Thus, it provides stakeholders with greater accountability to identify and compare the impact of different reporting companies. It identifies the theoretical issues as concrete and specific ones helping to understand and manage the

impacts of sustainability developments in the company's activities and strategy. In addition, it assess the risks and opportunities facing companies to ensure that they continue to meet the needs of the current generation without any chance of compromising the ability of future generations to achieve their needs and thus achieve a sustainable global economy.

2   Previous Research

In his research, "Accounting Response to Environmental Conservation and Support for Sustainable Development", Al-Rekaby (2014) aimed to know the response of the accounting branches to the preservation of the environment and support for sustainable development. He concluded that there was no standard for environmental accounting, which led to the availability of accounting data, in which it was possible to provide measures related to the environment. Onaizah and Ali (2011) discussed the impact of the disclosure of social responsibility in the financial statements in the decisions of the users of these lists - an operational and exploratory study aiming at shedding light on the importance of corporate social responsibility. The users of the financial statements are interested in disclosing social responsibility and this disclosure affects their decisions. Al-Armoty (2013) discussed the impact of sustainability accounting for the financial reports of the Jordanian public joint stock companies listed on Amman Stock Exchange. The aim of the study was to identify the impact of sustainability accounting for the financial reports of the Jordanian public joint stock companies listed on Amman Stock Exchange Statistical significance of the elements of sustainability accounting for environmental, social and economic elements for the financial reporting reports of the Jordanian public joint stock companies) from the point of view of financial managers, accountants, auditors and employees of Accounting Departments For accounting. In their research "The Assurance Process of GRI Sustainability Reports -Influence on Accountability and Transparency" Johannson and Lundberg (2012) introduced an analysis of the proven data for sustainability of the Swedish companies to assess how the sustainability process of "The Assurance Process of GRI Sustainability Reports -Influence on Accountability and Transparency" such companies affect transparency and accountability. They also found that the use of reporting standards and the guarantee of sustainability greatly reduce the risk of administrative capture to ensure process and thus be an open and standardized process that reviews the quality of information in sustainability reports increasing transparency and enhancing the credibility of those reports. Bidari (2016) stated his objective to highlight the relationship between factors that influence the size, age and profitability of banks (and), the structure of ownership and levels of disclosure of CSR. He concluded that all the banks in their annual reports disclose information about their social responsibility in order to obtain the community's recognition of the suitability of their social behavior; however, most of such information is descriptive and does not disclose the environmental performance.

3 Practical Framework

Examine the Level of Companies' Contribution to Sustainable Development Using the GRI and ESG Criteria:
How to calculate the reporting ratios for any ESG axis of sustainability:

Reported requirements/All requirements ∗ 100%

First: The Economic Axis

1. **Al-Mansour Company for Pharmaceutical Industries and Medical Supplies** (Table 1)**:**

Table 1. Reporting information on the economic axis 2014–2015*

The sides	2014	2015
1. Economic performance	18.518%	18.518%
2. Market presence	11.111%	11.111%
3. Indirect economic impacts	11.111%	11.111%
4. Procurement practices	3.704%	3.704%
5. Anti-corruption	0%	0%
6. Anti-competitive behavior	7.407%	7.407%
Total	**51.851%**	**51.851%**

2. **Al-Khatem Communications Company** (Table 2)**:**

Table 2. Reporting information on the economic axis

The sides	2014	2015
1. Economic performance	14.815%	14.815%
2. Market presence	3.704%	7.407%
3. Indirect economic impacts	11.111%	11.111%
4. Procurement practices	3.703%	3.704%
5. Anti-corruption	0%	0%
6. Anti-competitive behavior	0%	3.704%
Total	**33.333%**	**40.741%**

3. **The Modern Company for Animal and Agricultural Production** (Table 3).

Table 3. Reporting information on the economic axis

The sides	2014	2015
1. Economic performance	22.222%	14.815%
2. Market presence	7.407%	11.111%
3. Indirect economic impacts	7.407%	7.407%
4. Procurement practices	3.704%	0%
5. Anti-corruption	0%	0%
6. Anti-competitive behavior	3.704%	3.704%
Total	**44.444%**	**37.037%**

4. **Gulf Commercial Bank** (Table 4)**:**

Table 4. Reporting information on the economic axis

The sides	2014	2015
1. Economic performance	25.926%	25.926%
2. Market presence	7.407%	7.407%
3. Indirect economic impacts	11.111%	11.111%
4. Procurement practices	0%	0%
5. Anti-corruption	0%	0%
6. Anti-competitive behavior	3.704%	3.704%
Total	**48.148%**	**48.148%**

5. **Al Mamoura Real Estate Investment Company** (Tables 5 and 6):

Table 5. Reporting information on the economic axis

The sides	2014	2015
1. Economic performance	18.519%	18.519%
2. Market presence	7.404%	11.111%

(continued)

Table 5. (*continued*)

The sides	2014	2015
3. Indirect economic impacts	7.404%	7.404%
4. Procurement practices	0%	3.704%
5. Anti-corruption	0%	0%
6. Anti-competitive behavior	0%	0%
Total	**33.333%**	**40.741%**

Table 6. Percentage of reporting information on the economic axis of the research sample

Company	2014	2015	Medium
Al-Mansour Company for Pharmaceutical Industries and Medical Supplies	51.85%	51.85%	51.85%
Al-Khatem Communications Company	33.33%	40.74%	37.04%
The Modern Company for Animal and Agricultural Production	44.44%	37.04%	40.74%
Gulf Commercial Bank	48.15%	48.15%	48.15%
Al Mamoura Real Estate Investment Company	33.33%	40.74%	37.04%
Medium	37.407%	42.22%	43.70%

Second: The Environmental Axis

1. **Al-Mansour Company for Pharmaceutical Industries and Medical Supplies** (Table 7):

Table 7. Reporting information on the environmental axis

The Sides	2014	2015
1. Materials	1.389%	1.389%
2. Energy	4.167%	8.333%
3. Water	0%	0%
4. Biodiversity	0%	0%
5. Emission	0%	0%
6. Effluents & Waste	4.166%	4.166%
7. Environmental Compliance	0%	1.389%

(*continued*)

Table 7. (*continued*)

The Sides	2014	2015
8. Supplier Environmental Assessment	0%	0%
Total	**9.722%**	**15.277%**

2. **Al-Khatem Communications Company** (Table 8)**:**

Table 8. Reporting information on the environmental axis

The sides	2014	2015
1. Materials	1.389%	1.389%
2. Energy	6.944%	6.944%
3. Water	0%	0%
4. Biodiversity	0%	0%
5. Emission	0%	0%
6. Effluents & Waste	0%	0%
7. Environmental Compliance	0%	1.389%
8. Supplier Environmental Assessment	0%	0%
Total	**8.333%**	**9.722%**

3. **The Modern Company for Animal and Agricultural Production** (Table 9)**:**

Table 9. Reporting information on the environmental axis

The sides	2014	2015
1. Materials	1.389%	1.389%
2. Energy	4.166%	6.944%
3. Water	0%	0%
4. Biodiversity	0%	0%
5. Emission	0%	0%
6. Effluents & waste	4.167%	4.166%
7. Environmental compliance	1.389%	1.389%
8. Supplier environmental assessment	0%	0%
Total	**11.111%**	**13.888%**

4. **Gulf Commercial Bank** (Table 10)**:**

Table 10. Reporting information on the environmental axis

The sides	2014	2015
1. Materials	0%	0%
2. Energy	6.944%	6.944%
3. Water	0%	0%
4. Biodiversity	0%	0%
5. Emission	0%	0%
6. Effluents & waste	0%	0%
7. Environmental Compliance	1.389%	1.389%
8. Supplier environmental assessment	0%	0%
Total	**8.333%**	**8.333%**

5. **Al Mamoura Real Estate Investment Company** (Table 11 and 12)**:**

Table 11. Reporting information on the environmental axis

The sides	2014	2015
1. Materials	0%	0%
2. Energy	0%	0%
3. Water	0%	0%
4. Biodiversity	0%	0%
5. Emission	0%	0%
6. Effluents & Waste	0%	0%
7. Environmental Compliance	0%	0%
8. Supplier Environmental Assessment	0%	0%
Total	**0%**	**0%**

Third: Social Focus:

1. **Al-Mansour Company for Pharmaceutical Industries and Medical Supplies** (Table 13)**:**

Table 12. Reporting information on the environmental axis of the research sample

Company	2014	2015	Medium
Al-Mansour Company for Pharmaceutical Industries and Medical Supplies	9.72%	15.28%	12.50%
Al-Khatem Communications Company	8.33%	9.72%	9.03%
The Modern Company for Animal and Agricultural Production	11.11%	13.89%	12.50%
Gulf Commercial Bank	8.33%	8.33%	8.33%
Al Mamoura Real Estate Investment Company	0.00%	0.00%	0.00%
medium	7.638%	7.50%	9.44%

Table 13. Reporting information on the social axis

The sides	2014	2015
1. Employment	4.348%	4.348%
2. Labor/Management relations	0%	0%
3. Occupational health & safety	0%	0%
4. Training & education	4.348%	4.348%
5. Diversity & equal opportunity	2.898%	2.898%
6. Non-discrimination	0%	0%
7. Freedom of association & collective bargaining	0%	0%
8. Child labor	0%	0%
9. Forced or compulsory	0%	0%
10. Security practices	0%	0%
11. Rights of indigenous peoples	0%	0%
12. Human rights assessment	0%	0%
13. Local communities	0%	0%
14. Supplier social assessment	0%	0%
15. Public policy	1.449%	1.449%
16. Customer health safety	0%	0%
17. Marketing & labeling	2.898%	2.898%
18. Customer health safety	0%	0%
19. Socioeconomic compliance	0%	1.449%
Total	**15.941%**	**17.390%**

2. **Al-Khatem Communications Company** (Table 14):

Table 14. Reporting information on the social axis

The sides	2014	2015
1. Employment	4.34%	2.89%
2. Labor/Management relations	0%	0%
3. Occupational health & safety	0%	0%
4. Training & education	0%	2.89%
5. Diversity & equal opportunity	2.89%	2.89%
6. Non-discrimination	0%	0%
7. Freedom of association & collective bargaining	0%	0%
8. Child labor	0%	0%
9. Forced or compulsory	0%	0%
10. Security practices	0%	0%
11. Rights of indigenous peoples	0%	0%
12. Human rights assessment	0%	0%
13. Local communities	0%	0%
14. Supplier social assessment	0%	0%
15. Public policy	0%	0%
16. Customer health safety	0%	0%
17. Marketing & labeling	1.44	1.44%
18. Customer health safety	0%	0
19. Socioeconomic compliance	0%	1.44
Total	**8.69**%	**11.59**%

3. **The Modern Company for Animal and Agricultural Production** (Table 15):

Table 15. Reporting information on the social axis

The Sides	2014	2015
1. Employment	2.89%	2.89%
2. Labor/Management relations	0%	0%
3. Occupational health & safety	0%	0%
4. Training & education	0%	0%

Table 15. (*continued*)

The Sides	2014	2015
5. Diversity & equal opportunity	0%	0%
6. Non-discrimination	0%	0%
7. Freedom of association & collective Bargaining	0%	0%
8. Child labor	0%	0%
9. Forced or compulsory	0%	0%
10. Security practices	0%	0%
11. Rights of indigenous peoples	0%	0%
12. Human rights assessment	0%	0%
13. Local communities	0%	0%
14. Supplier social assessment	0%	0%
15. Public policy	0%	0%
16. Customer health safety	0%	0%
17. Marketing & labeling	1.44%	1.44%
18. Customer health safety	0%	0%
19. Socioeconomic compliance	1.44%	1.44%
Total	**5.79%**	**5.79%**

Table 16. Reporting information on the social axis

The sides	2014	2015
1. Employment	4.348%	4.348%
2. Labor/Management relations	0%	0%
3. Occupational health & safety	0%	0%
4. Training & education	2.899%	2.899%
5. Diversity & equal opportunity	1.449%	1.449%
6. Non-discrimination	0%	0%
7. Freedom of association & collective Bargaining	0%	0%
8. Child labor	0%	0%
9. Forced or compulsory	0%	0%
10. Security practices	0%	0%
11. Rights of indigenous peoples	0%	0%
12. Human rights assessment	0%	0%
13. Local communities	0%	0%

Table 16. (*continued*)

The sides	2014	2015
14. Supplier social assessment	0%	0%
15. Public policy	1.449%	1.449%
16. Customer health safety	0%	0%
17. Marketing & labeling	1.449%	1.449%
18. Customer health safety	0%	0%
19. Socioeconomic compliance	1.449%	0%
Total of Percentage	**13.043%**	**11.594%**

4. **Gulf Commercial Bank** (Table 16):

Al Mamoura Real Estate Investment Company (Tables 17 and 18):

Table 17. Reporting information on the social axis

The sides	2014	2015
1. Employment	4.348%	4.348%
2. Labor/Management relations	0%	0%
3. Occupational health & safety	0%	0%
4. Training & education	0%	0%
5. Diversity & equal opportunity	1.449%	1.4049%
6. Non-discrimination	0%	0%
7. Freedom of association & collective Bargaining	0%	0%
8. Child labor	0%	0%
9. Forced or compulsory	0%	0%
10. Security practices	0%	0%
11. Rights of indigenous peoples	0%	0%
12. Human rights assessment	0%	0%
13. Local communities	0%	0%
14. Supplier social assessment	0%	0%
15. Public policy	0%	0%
16. Customer health safety	0%	0%
17. Marketing & labeling	0%	0%
18. Customer health safety	0%	0%
19. Socioeconomic compliance	1.449%	1.449%

Table 17. (*continued*)

The sides	2014	2015
Total	**7.246%**	**7.246%**

Table 18. Reporting information on the social axis

Company	2014	2015	Medium
Al-Mansour Company for Pharmaceutical Industries and Medical Supplies	15.94%	17.39%	16.67%
Al-Khatem Communications Company	8.70%	11.59%	10.14%
The Modern Company for Animal and Agricultural Production	5.80%	5.80%	5.80%
Gulf Commercial Bank	13.04%	11.59%	12.32%
Al Mamoura Real Estate Investment Company	7.25%	7.25%	7.25%
Medium	10.14%	10.72%	10.43%

Fourth: General Disclosures
1-Governance (Table 19)**:**

Table 19. Average reporting information on corporate governance performance

Company	2014	2015	Medium
Al-Mansour Company for Pharmaceutical Industries and Medical Supplies	0%	0%	0%
Al-Khatem Communications Company	0%	0%	0%
The Modern Company for Animal and Agricultural Production	0%	0%	0%
Gulf Commercial Bank	0%	0%	0%
Al Mamoura Real Estate Investment Company	0%	0%	0%
Medium	0%	0%	0%

6. Other General Disclosures:
1-2: Al-Mansour Company for Pharmaceutical Industries and Medical Supplies (Table 20)**:**

Table 20. For reporting on private information the other general disclosures

Data	2014	2015
1. Organization profile	37.209%	37.209%
2. Strategy	0%	0%
3. Ethics & integrity	2.325%	2.325%
4. Stakeholder engagement	0%	0%
5. Reporting practice	0%	0%
Total	**39.534%**	**39.534%**

2.2 Al-Khatem Telecom Company (Table 21):

Table 21. Reporting on private information and other general disclosures

Data	2014	2015
1. Organization profile	37.209%	37.209%
2. Strategy	0%	0%
3. Ethics & integrity	2.325%	2.325%
4. Stakeholder engagement	0%	0%
5. Reporting practice	0%	0%
Total	**39.534%**	**39.534%**

3.2: The Modern Company for Animal and Agricultural Production (Table 22):

Table 22. Reporting on private information and other general disclosures

Data	2014	2015
1. Organization profile	30.233%	30.233%
2. Strategy	0%	0%
3. Ethics & integrity	2.325%	2.325%
4. Stakeholder engagement	0%	0%
5. Reporting practice	0%	0%
Total	**32.558%**	**32.558%**

4.2: Commercial Bank of Qatar (Table 23):

Table 23. Private information reporting rates the other general disclosures

Data	2014	2015
1. Organization profile	37.209%	37.209%
2. Strategy	0%	0%
3. Ethics & integrity	2.325%	2.325%
4. Stakeholder engagement	0%	0%
5. Reporting practice	0%	0%
Total	**39.534%**	**39.534%**

5-2 Al Mamoura Real Estate Investment Company (Table 24):

Table 24. Private information reporting rates the other general disclosures

Data	2014	2015
1. Organization profile	30.233%	30.233%
2. Strategy	0%	0%
3. Ethics & integrity	2.325%	2.325%
4. Stakeholder engagement	0%	0%
5. Reporting practice	0%	0%
Total	32.558%	32.558%

From the above able, it is possible to extract the medium to the degree of reporting information on other public disclosures of the companies in the research sample according to schedule Table 25.

Table 25. Reporting of information on other public disclosures

Company	2014	2015	Medium
Al-Mansour Company for Pharmaceutical Industries and Medical Supplies	39.53%	39.53%	39.53%
Al-Khatem Communications Company	39.53%	39.53%	39.53%
The Modern Company for Animal and Agricultural Production	32.56%	32.56%	32.56%
Gulf Commercial Bank	39.53%	39.53%	39.53%
Al Mamoura Real Estate Investment Company	32.56%	32.56%	32.56%
Medium	36.74%	36.74%	36.74%

The following tables summarize the level of reporting of ESG indicators for each of the research sample companies according to GRI standards (Table 26):

Table 26. Sustainability reporting level (ESG indicators) for each of the companies

Company	Economic axis	Environmental axis	Social axis	Corporate governance performance	Other general disclosures	Sustainability reporting level (ESG indicators)
Al-Mansour Company for Pharmaceutical Industries and Medical Supplies	51.85%	12.50%	16.67%	0%	39.53%	24.11%
Al-Khatem Communications Company	37.04%	9.03%	10.14%	0%	39.53%	19.15%
The Modern Company for Animal and Agricultural Production	40.74%	12.50%	5.80%	0%	32.56%	18.32%
Gulf Commercial Bank	48.15%	8.33%	13.32%	0%	39.53%	21.87%
Al Mamoura Real Estate Investment Company	37.04%	0.00%	7.25%	0%	32.56%	15.37%
Medium	42.96%	8.47%	10.63%	0%	36.74%	19.76%

4 Conclusions

1. The level of sustainability reporting for the listed Iraqi companies was 19.76%. Although Al-Mansour Pharmaceutical Industries recorded the highest percentage of sustainability reporting at 24.11, it is still weak. This is a sign of poor reporting of sustainability by Iraqi companies listed on the Iraq Stock Exchange.
2. Sustainable development requires companies to adopt the concept of social and environmental performance as well as financial performance for the social and environmental efficiency of the company. These companies need to carefully carry out social and environmental activities and the efficient assessment of compliance. Based on this, the company's progress towards sustainability can be determined.
3. The issue of sustainability accounting and reporting in developing countries, including Iraq is still in its early stages, thus, it needs further research.
4. Sustainability reporting is one of the most important stages of accounting development due to an increase in size and capacity of companies in different sectors.

5. The possibility of adopting GRI standards by companies listed in the Iraq Stock Exchange as objective indicators of sustainability reporting.

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Influence of the Digitalization on Human Development in the Process of Constructing a Welfare Economy

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Abstract. The article substantiates the influence of digitalization on human development in the process of constructing a welfare economy. The task of constructing a welfare economy cannot be fulfilled without providing human development. Simultaneously digitalization pushed by the spread of the pandemic of corona virus became the worldwide trend and changed the essence of production relations. Because of the fact that development of human capital is always connected to the development of production relations it is relevant in current conditions to look for the connection between human development and the process of digitalization. It should be admitted that human capital continuously obtains new digital skills and because of the fact that these skills cannot be separated from the persons-carriers the diffusion of innovations is fulfilled in the economy with the movement of the qualified work resources from one place of occupation to another. The more knowledge and digital aimed the human resources are the better the chances to construct a welfare economy in some country become. In this connection the dynamics of the indices indicating the innovations and the human development are important to measure welfare.

Keywords: Digitalization · Human capital · Human development · Innovations · Welfare economy

1 Introduction

1.1 The Relevance of the Research

In current conditions it has become relevant to look for the ways of constructing welfare economies in different countries of the world. This process requires efforts in human

development that in current conditions is affected by overall spread of digitalization in all spheres and branches of economy. The digitalization process has been recently pushed by the pandemic of corona virus which stated the challenges of fast emerging and using the distant (digital) forms of activities. The countries able to implement digitalization constantly show improvement of welfare and leave all other countries behind. Such revolutionary changes in technological development influenced the working relations and simultaneously influenced the human capital development having become crucial for the overall welfare of nations. It is necessary to admit the two-way mutual influence: on the one hand digitalization affects development of human capital, on the other hand human capital develops influenced by the newly formed working relations in terms of digitalization and the digital skills become crucial. Therefore, the welfare of people in modern conditions depends on the ability to provide digitalization and to provide human development influenced by this process.

1.2 Methodology

To fulfill the stated goals of the current research such scientific methods have been used as the *method of induction and deduction* to give the definition of the terms "human capital", "human development", to search for the essence of welfare and digitalization. The *historical method* has been used to show some relevant to the topic information on development of human capital in past. The *method of analysis and synthesis* let to carry out analysis of the perspectives of the change of the welfare depending on the innovative activities of the countries of the world. The *method of constructing schemes* has made it possible to present scheme of peculiarities of human capital. This has given the opportunity to use *the method of comparison* in order to compare some important features of the human capital development in previous historical period and now in conditions of digitalization. The method of diagram constructing was used to present data on the dynamics of innovative and human development of the countries of the world, in particular of the European countries. The *method of logical conclusions* has been used in order to work out some possible scenarios of the future development of world economy, i.e. changes in organization of work and business in the new condition, rising of the distant forms of work and restructuring of the existing ones. In the article there is a scheme of crucial role of human capital development for constructing a welfare economy influenced by the digitalization worked out in order to show the importance of human development and influence of different factors.

1.3 Literature Review and the Purpose Statement

The problems of constructing a welfare economy have been discussed in works of the world scientists since the middle of the nineteenth century. The perception of the essence of welfare changed as well as economic conditions but aim to reach it remained. The subjective approach to assessing the extent to which the growing needs of people in general have been met has determined the very formula for social welfare. In the nineteenth century D. Bentham in his work "Deontology, or the science of morality" showed his vision of measuring social welfare, which depends on the usefulness of a set of benefits for a particular person [5]. The theory of indifference curves developed by P. Samuelson

is well-known among economists. According to P. Samuelson, if the individual remains on the same curve of indifference, the function of social welfare remains unchanged both in the case of increasing and decreasing individual utility, i.e. social welfare increases if the individual moves from lower curve of indifference to the higher one curve, and decreases with the transition to the lower one [13]. In general, conceptually, the formation of the theory of welfare economics was influenced by two main areas of economic research of social welfare, i.e. the Austrian school of marginalism and the school of classical political economy. While the Austrian representatives developed the concept of rational economic behavior aimed at modeling markets and competition, the role of entrepreneurs and motivation, the classics worked on the issue of reproduction and social aspects of well-being. When the previous century started the concept of noosphere was presented by Vernadsky, V. [17]. It provided a general perception of the anticipated in future model of economy. Schumpeter, J. [9] presented to the scientists his understanding of the distinction between economic growth and economic development. He argued that economic growth is the increase in production and consumption of some products and services whereas economic development is the appearance of a new thing that was unknown before. In other words, the term "innovation" was determined. The scientists of the twentieth century tried to analyze fast changes in the development of economy and to well-ground the reasons for increasing gap in among different countries of the world. Solow, R. studied economic growth in relations to such factors as labor, capital and technologies [14].

Soon it became understandable that there are some contradictions in development of productive forces in conditions of forming of new economy. These issues were studied by Block, F., Hirschhorn, L. (1979) [5]. In current conditions the welfare of people depends much on the ability to provide human development in terms of the overall digitalization. The digitalization issues have been recently discussed by the scientists of the world. The word "digitalization" was firstly used by N. Negroponte in year 1995, who was the first to determine the main features of digitalization [11]. Within the last several years the digitalization process has become the world trend and the word has been used in different spheres of life of people [12]. Araújo Ana Carina and Aurora A.C. (2013) state that constructing of a knowledge-based economy creates the conditions for the institutional restructuring of intellectual potential where one of the key factors to determine the effectiveness is highly professional human resources [4]. Perspectives of knowledge-based innovation are studied by Agostini, L. Caviggioli, F., Galati, F., Bigliardi, B. (2020) [1]. Substantial Ukrainian research has been determined to the process of digitalization in the domestic economy. Digitalization of working relations was studied as a factor of improving the business processes by Lazebnyk, L. [10]. Some interesting data about the influence of coronavirus on the economic crisis in the world can be found in economic and political reviews [18]. In works of Alekseieva, K. Turchyn, L., Sobko, O.,Boichyk, I. and Stakhurska S. the essence of intellectual capital is studied as well as its crucial role in economic development. In current conditions, intellectual capital can be considered as the primary resource of the economy and the basis for constructing a knowledge economy of any country [3]. Interesting approach to studying of digitalization pushed by the spread of the pandemic of coronavirus is used in the work of Alekseieva, K. and others [2].

Despite the value of the research that has been already carried out by the world scientists the influence of the digitalization on human development in the process of constructing a welfare economy has been left without the proper attention. Thus *the purpose of the current research* is to well-ground this influence.

1.4 The Paper Structure

The current paper consists of three main parts, i.e. introduction, results and conclusion. The introduction contains well grounding of the topic of the research, literature review and purpose statement, the paper structure. The results contain such subsections as "Human dimensions of the digital society", "The spread of coronavirus as a factor of activation of digitalization process" and "The basic tenets for the welfare economy constructing". In the end of the article there are references. Such paper structure promotes the creation of the conceptual vision of the digitalization influence on human development in constructing the welfare economy in current conditions.

2   Results

2.1 Human Dimensions of the Digital Society

At present, large-scale transformations have been observed in the world economic development. These transformations are characterized by the ever-increasing influence of digitalization factor on all spheres of life and on the overall welfare of people of different countries. The whole process of extended reproduction is largely determined, in fact, by the use of digital technologies. Countries that have managed to restructure their economies towards digital forms of holding activities and relied on the nation's intellectual resources have possessed the leading positions in the world, leaving everyone else far behind, with the gap in welfare between the former and the latter continuing to grow daily. In such conditions, it should be admitted that the development of human capital largely influences the digitalization of the country and as a matter of fact determines the formation of the welfare economy in the long run.

Modern society is a unity organized and structured in an extremely complicated way. There has been a sharp increase in the information needs of the individuals and society as a whole, along with traditional types of welfare continues to be increasingly important accumulation of digital welfare, which in turn stimulates the accumulation of other types of welfare and, in fact, determines social progress. Digitalization has become a fundamental general scientific basic category. Proof of this is the formation of such fundamentally new areas of scientific knowledge as the information society, information technology, information needs and resources, information services and goods, information economy. In general, the fact that information has become a key productive force of society and covers all areas and spheres of life, has allowed scientists to characterize such a society as informational.

The digital society is characterized, above all, by the human dimension of such society, as digital technologies are created and developed by people. The collective mind, which is formed on the basis of collective forms of intellectual work, is gaining more

and more importance in the studying of the surrounding world. The collective mind is not just the sum of the individual contributions of individual researchers. Accumulated knowledge is gaining synergistic power, forming the "added value" of the collective mind, which arises from the interaction of a large number of humans.

Human capital is characterized, firstly, by a set of demographic parameters such as life expectancy, general and occupational morbidity, physical and mental condition, and, secondly, by certain levels of education and culture in society, the degree of scientific knowledge and information. Human capital is one of the components of the intellectual capital which includes also intellectual property and knowledge infrastructure (see Fig. 1).

Existing objective conditions, which are characterized by the key role and place of man in the new digital society, require both individuals and their groups, new forms of thinking, behavior and cooperation. In the digital society, man is not just an "economic man" with his rational behavior, characteristic of pre-industrial and industrial societies, but a creative and multifaceted personality. In addition, an important feature of the modern average worker is the new nature of motivation to work: human activity is increasingly motivated not by external incentives to increase material well-being, but internal incentives generated by the desire for self-realization. It is the creative opportunities of people to generate new knowledge and digital technologies that become the main resource of the future.

This aspect is a factor of hidden danger, which is the likelihood of creating an unfavorable social climate and inciting social unrest in a society where there are no opportunities for creative self-realization of the human person. The fact is that due to the deformation of the social and natural worlds, people often do not find their place in them, do not find opportunities to realize their creative potential. There is a contradictory situation: on the one hand, the development of aggregate human capital is a significant factor in the very existence of the information society, on the other - the existing society often does not promote and even opposes the transformation of human potential into human intellectual capital. Further deepening of the conflict between society and man can lead to degradation of the individual, increased apathy, the establishment of harmful and dangerous stereotypes.

The effectiveness of the created system of human capital management depends on the development at the state level of a system of motivation of people not just to work, but to use a creative approach to work. The economy is created for people, but it is man, performing certain economic activities, acts as a means or instrument of the economy (factor of production), acts as a carrier of economic progress. In order to form an effective motivational mechanism for work, it is very important to consider a person not only as a factor of production, but also in terms of opportunities for development. In the conditions of the information revolution the problems of socialization of the individual, his motivation for creative activity become a priority. Man changes the external world and at the same time changes himself, acts as a means and at the same time the goal of the changes that take place.

In the early historical stages, human activities were based on biological instincts which were intensified due to the need to resist to nature. It was a laborious, instinctive activity. Gradually, people's activities became more and more conscious, a system of

consciously coordinated social efforts was formed. Man became not only natural phenomena, but started to distinguish himself from others. The main goal of human activity was the alienated material product, and labor activity itself was aimed at achieving a material result. Finally, at the highest levels of progress, a person has a desire to develop himself as a person, as a creative subject.

In the digital society, it is human labor activity, which is not motivated solely by material needs, changes the nature and mechanism of management, and accelerates the transition to the next technological system, much more than any revolutionary upheaval. This is due to the fact that in the case of sufficient opportunities for self-realization of the individual, the increase of the material product is no longer perceived by the individual as an end in itself, and its alienation as an injustice.
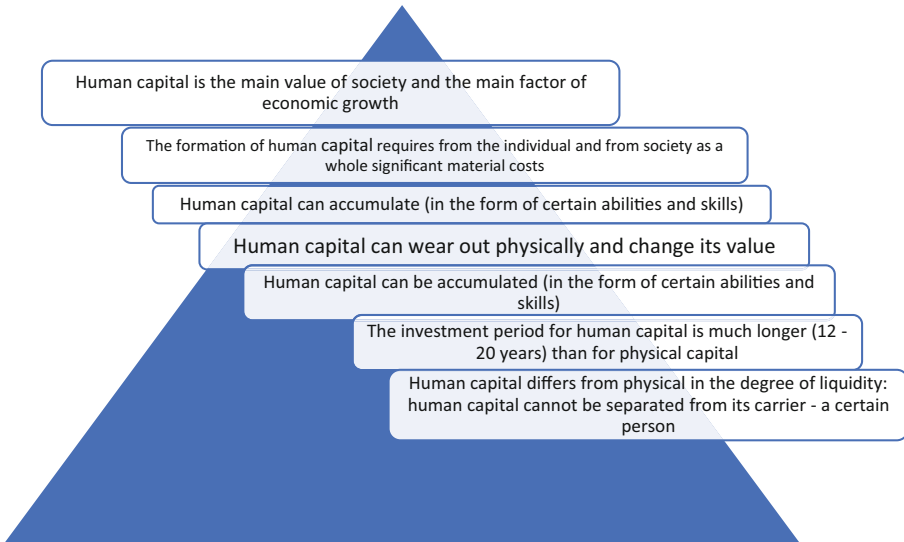

Fig. 1. Peculiarities of human capital. *Developed by authors*

It is necessary to admit that regardless of the sources of formation, which can be public, family and private, the use of human capital and direct income is always controlled by the person-carrier. The functioning of human capital, the degree of return from its use due to the free will of the subject, his individual interests, moral and material interests, responsibilities, worldview, general level of culture. That is why in case when a person leaves some place of occupation for another his (her) special skills and knowledge is moved simultaneously because of the fact that they cannot be separated from the carrier. As a matter of fact, it is one of the factor of stimulating the process of diffusion of innovations in the economy. The more qualified and skilled the work resources are the better work opportunities they tend to look for to fulfill their potential and to be better remunerated for their work. The new knowledge is spread in all spheres and branches of economy thanks to the employment of the qualified staff moving from one position to another.

2.2   The Spread of Coronavirus as a Factor of Activation of Digitalization Process

Recently the unpreceded changes have happened in a very short period of time. In particular, the process of digitalization of all spheres and branches of economy has been pushed by the fast spread of coronavirus. The scientists have even started to speak about the change of technological orders because the whole process of working relations has suffered huge changes [3].

Certainly the human capital also changes being influenced by the new way of production relations. The distant forms of business doing are actively developed because the virtual connections are available and easy to use. Instead of regular teams the virtual teams are formed. The new remote approach to business running and public affairs holding dictate the new approaches to management as a whole and management of human resources in particular. The attitude to time management changes drastically and the accent is being moved towards the control of results: the accent is not any more put on the time spent in the office (the work is remote and it becomes difficult to control), but on the results obtained in time. In general, the human capital management system is a set of strategically agreed and interconnected methods and tools of human capital management, aimed at increasing the value and effectiveness of human capital in the economy. It is always important to form a clear idea about the essence of human capital, which will create a powerful and flexible system of management as the main resource for development, to intensify the processes of obtaining, transmitting and using knowledge. In current conditions the lessons of pandemic studied by the humanity have forced people to be more and more conscious concerning their health and different environmental threats. People have become highly motivated to use the digital technologies both in casual life and at work in order to escape the future virus spread. The system of management becomes more and more digitalized in such conditions.

Such revolutionary changes reflected in the overall digitalization of all spheres and branches of economy and developing the human capital in a new way pay off dozens of times and make the economy competitive in the long run. For example, high-tech robotics can reduce labor costs in the field of production by $ 6.3 trillion (19% of global labor costs), and automation of the information and knowledge spheres can reduce labor costs by $ 9 trillion (27% of global wage costs). Digitalization is closely linked to productivity growth and is at the heart of improving living standards in the country. In the long run, the main determinant of economic growth and living standards in the country is its ability to create, adapt and use new technologies. Over the last 25 years, almost all jobs in the private sector have been created by companies under the age of 5 years.

However, the economy of Ukraine cannot be considered innovative or digitalized enough. There is still a large gap in regional development.

The value of the Global Innovation Index of Ukraine in year 2019 appeared to be almost two times below the same index of the European leaders and 20% below the average European level of it (see Fig. 2). As a matter of fact, the Global Innovation Index consists of seven components (institutions, human capital, infrastructure, market, business, knowledge and technologies, culture and creative industries), 3 of which are throwing Ukraine to the lag positions (see Fig. 2). These are institutional development (the 96th place out of 129 countries mainly due to the political uncertainty and weak legal framework regulation), infrastructure development (Ukraine ranks 97th because
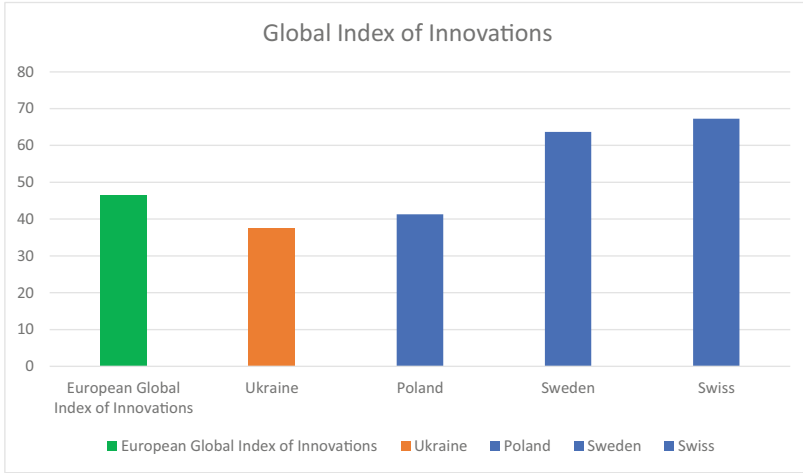
Fig. 2. Global index of innovations in year 2019. *Developed by authors on the basis of* [16]

infrastructure is considered to be underdeveloped and used inefficiently) and the 90th place Ukraine took in the ranking of the level of market development because of the difficult access to microfinance and investment.
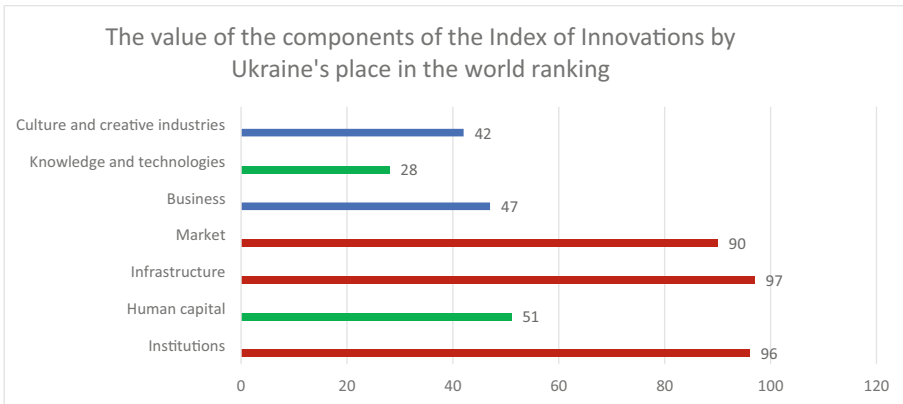

Fig. 3. The value of the components of the Global Index of Innovations by Ukraine's place in the world ranking. *Developed by authors on the basis of* [16]

At the same time, it is evident from the diagram presented above that Ukraine possesses potential in developing the human capital. It ranks the 51st in human capital in the world ranking and the position of knowledge and technologies is also high enough, i.e. the 28th position (see Fig. 3). In such conditions the accent in digital development should be done on the stimulating of the human capital development. It becomes even possible to speak about forming of the welfare economy basing on the balanced human development.

2.3   The Basic Tenets for the Welfare Economy Constructing

The welfare economy should be understood as economy standing on two basic tenets. First, the well-being of a society can be assessed by assessing the well-being of its individual members, and second, the well-being of the whole society increases if the well-being of all its members. At the same time, the level of well-being of each individual either increases or remains unchanged, but in no case should it decrease. Human development plays important role in forming of the welfare economy whereas in current conditions digitalization becomes a crucial factor of the human development itself (see Fig. 4).
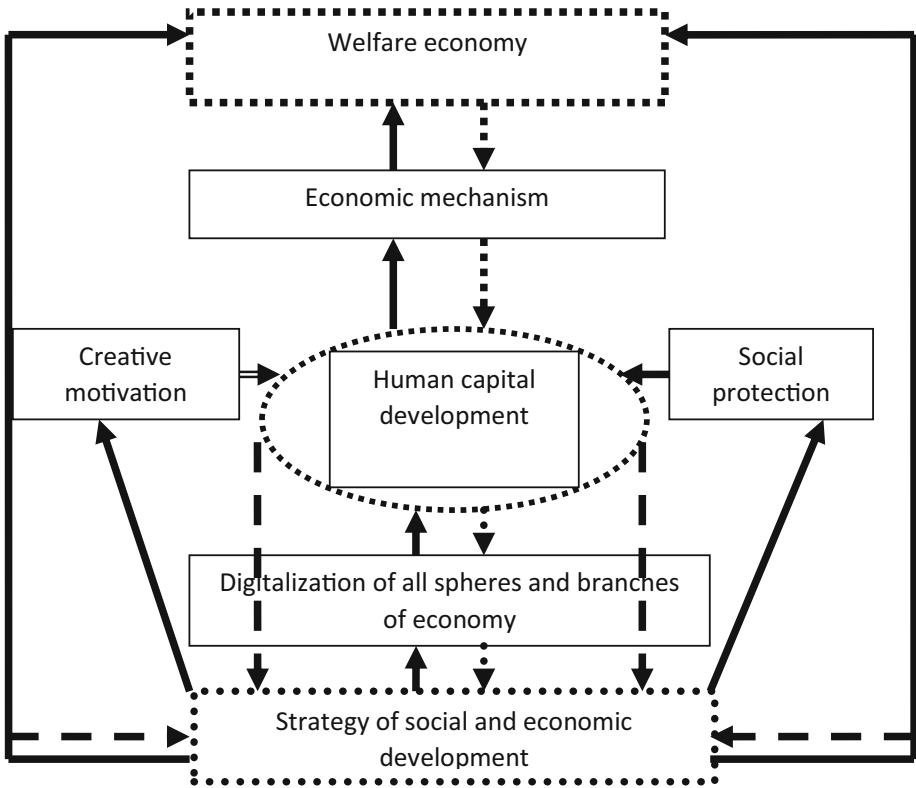
Fig. 4. Crucial role of human capital development for constructing a welfare economy. *Developed by authors*

In fact, countries differ significantly in the indicators of the human development index, and countries that have a level of this index above 0.8 are countries with substantial human development. It should be noted that the country's place in terms of human development may differ significantly from the country's place in the world in terms of GDP and GDP per capita. If the country's rating on the human development index is higher than its rating on the level of GDP per capita, then the country has implemented the principle of welfare and achieved economic welfare. If the rating of the human development index of the country is lower than the level of GDP of this country, then economic

growth in this country did not cause a corresponding increase in living standards, i.e. there is no economic development. The Human Development Index as an indicator of the well-being of a country's people has a number of advantages. In particular, it highlights basic criteria for social development, such as longevity, education and income of individuals. This allows for quantitative comparisons. Also, the assessment of the welfare of countries by level of human development has already become a common method with fairly simple calculations. The disadvantages of comparing the well-being of people in different countries using the Human Development Index are the frequent lack of necessary statistics on a country or region. Also negative is the excessive manipulation of averages, which leads to the leveling of data on the uneven provision of basic freedoms and education.

The recent crisis caused by the fast spread of the COVID-19 has influenced the human development all around the world towards its deterioration. As a matter of fact, the coronavirus has become challenging for the three components of the human development, i.e. for the health care, for education and for incomes of people. The decline in key areas of human development is felt in most countries, both rich and poor, and in every region. The figures of death from COVID-19 exceeded 300,000. The reduction in global per capita income this year is expected to be 4%. Due to the closure of schools, the current percentage of primary school children (including those who do not have access to the Internet, shows that 60% of children do not receive an education. The combined effects of these shocks have led to the largest decline in human development in history. This has not been the case in the world since the 1980s.

The decline in human development is expected to be greater in developing countries, which are less able to cope with the social and economic consequences of a pandemic than in developed countries. The factor of technological development of countries and ability to implement digitalization in all spheres of life, in particular in business, education and health care have started to determine greatly the overall human development.

As for Ukraine, the human development index has reached 0,779 in year 2020. To compare it with the worlds figures there should be specified the world average index (the average of 185 countries) that is 0,724 in 2020. [15] (see Fig. 5).

The comparison of figures of the performance of Ukraine in human development within recent years proves that performance in human development has even improved [15].

However, Ukraine is still below the majority of the European countries in human development and in particular below the average European Index of Human Development, i.e. 0,783 points. The world leaders in human development Sweden, Germany, Ireland, reach 0,945, 0,947 and 0,955 points correspondingly [15] and the lag between them and Ukraine (0,779 points) remains difficult to overcome (see Fig. 6).

Turning to the issue of constructing of the welfare economy basing on the human capital development it is necessary in current condition to provide the perception of the important role of digitalization providing in the economies of all countries, in particular, in the economy of Ukraine (see Fig. 4). The digitalization process in terms of the pandemic threat helps to improve the health care of the countries via its digitalization and innovations implementation, supports in creation of the distant forms of education and
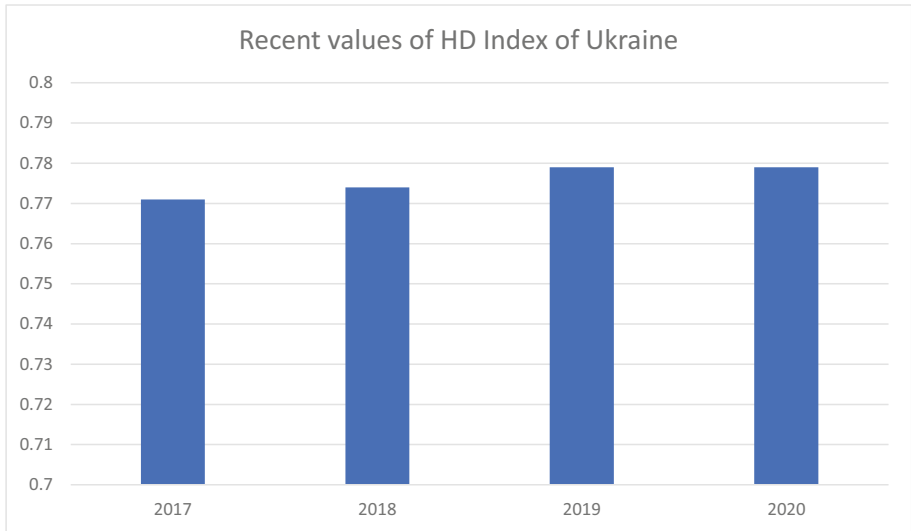
Fig. 5. The dynamics of the human development index of Ukraine. *Developed by authors on the basis of* [15]

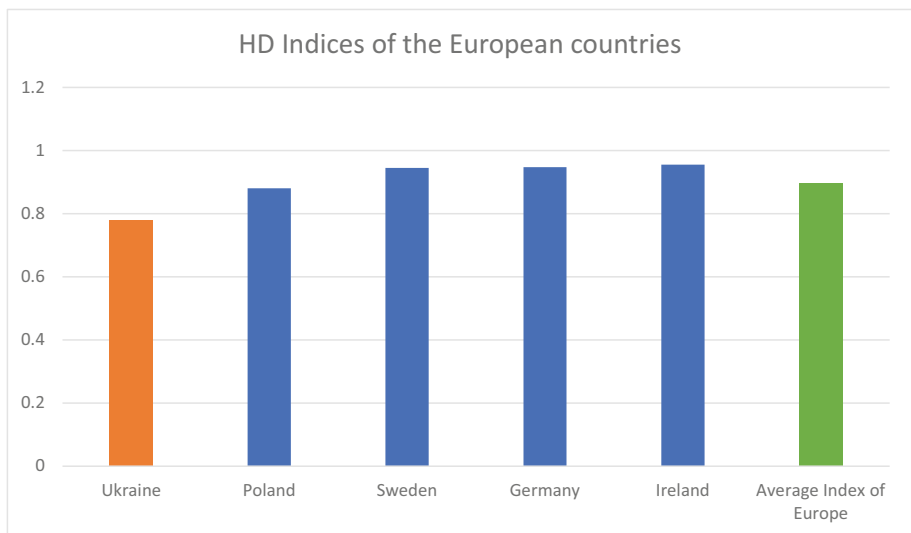**Fig. 6.** Human development indices of the European countries. *Developed by authors on the basis of* [15]

provides opportunities of the distant business running to avoid the declining of incomes got by people [8].

It should be admitted that the strategy of social and economic development aimed at digitalization of all spheres and branches of economy affects the development of

the human capital via stimulating the creative motivation of people and providing their social protection. The economic mechanism of the country obtains innovative features of development and the welfare economy can be constructed in some country.

3 Conclusion

Construction of the welfare economy in modern conditions requires development of the human capital as the main indicator and factor of this process. The importance of the human capital for the economic growth and welfare of nations in any conditions is not to discuss but in current conditions when innovations and digital technologies play crucial role in development the role of the human capital becomes more and more crucial.

The essence of the category human capital has been changing during the historical period obtaining new features although the general characteristics such as life expectancy, occupational morbidity and mentality have remained common for all periods of time as well as the level of education, culture and ability to get knowledge.

In early historical periods the biological activities of people based on the instincts determined the process of human development but gradually the activities of people became more and more conscious and the social features of the human capital development started playing an important role. In current conditions the process of forming a digital society has become a trend pushed and intensified by the spread of pandemic of coronavirus all around the world and the necessity to develop distant forms of interactions among people in casual life and in business. In such conditions the human capital has been largely affected by the newly formed working relations influenced by the digitalization.

The Global Index of Innovations and the Human Development Index are used to reflect the level of innovation and digital development of countries as well as the level of human development. It is necessary to admit that the countries which are able to provide innovations and digitalization show higher levels of human development and vice versa. Such countries are the world leaders in the welfare measures and the gap between them and the others grows.

Countries which appeared to be able to implement digital technologies and innovations have possibilities to increase the well-being of their citizens and certainly they possess the potential for constructing the welfare economies. Digitalization stimulates development of human capital towards possessing skills needed in new conditions at the same time the digitalization process is stimulated by development of human capital. The new economy that is formed can be considered a welfare economy.

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Digitalization and Success of Peruvian Micro-enterprises in the Retail 4.0 Sector

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Abstract. Changes in the retail market are urging businesses to adopt a modern manufacturing paradigm known as agile development. In a market that is extremely competitive with changing consumer demands and dramatic improvements in performance, it is seen as a good strategy. This paper focuses on modern technology and the link between two machines and contact between all supply chain elements, also known as digital production. The fourth technological revolution is this modern technology, regarded as the Internet of Things or retail 4.0. It raises multiple challenges and prospects for the industrial world. Business processes, approaches and collaboration with sellers and end consumers must be adapted. This thesis explores the requirements and the usage of technology in this transition. Furthermore, after a sample of over 550 respondents, 334 responses are obtained the inquiry would incorporate a quantitative approach. The test was evaluated using the SPSS statistical method, and regression analysis was used to verify the conclusions. The findings indicate that digitalization and the distribution chain in the retail industry have a direct connection.

Keywords: Digitalization · Transformation · Micro-enterprises · Retail 4.0

1 Introduction

The notion of digitalization has arisen over the years. Digitalization has provided the ability to change and adjust companies. Virtual industry transition is the way to concentrate on IT daily routine and promote connections through the supply chain to create incomparable organizational excellence.

Changes are pushing businesses to follow a modern development paradigm known as agile production. It is seen as the winning formula by the suppliers, who aspire to significantly boost output in an intensely challenging environment with fast-changing client demands, to become national and international leaders [1].

Research has found that product creation ventures can be more effective when focused on sophisticated consumer requirements than on emerging opportunities in technology [2]. Indeed, standardized goods and industrial manufacturing can no longer gain

a significant market share as long as systems and practices remain scalable and agile. Development industries must predict a high-precision shift in demand whilst still reacting rapidly to unforeseen additional changes. The key restrictions of a supplier are the high prospect of quality and lower cost of staying successful on the market with its consumers. Companies that cope with the technology that maintains their market position are able to provide rapid product creation and flexible output [3].

AccOn the internet, the coming industrial revolution would cause contact between people as well as cyber-physical machinery (CPS) through large networks according to experts from industry and academia [4, 5]. The networks would attach goods and computers to employees and enable remote control and enhancement of activities. The commodity details are collected in the cloud storage and software systems are the link to track all indicators in real time. Manufacturing firms would be able to fulfill their needs and please their clients by utilizing these systems more flexibly and agilely. Significant improvements in processing and the flow of the company's operations would have to be made in order to incorporate this technology [6].

Because of the COVID 19 pandemic, the retail industry has been directly impacted because all the operations needed to access the goods have to be operational, forcing all staff and managers to engage physically.

When the COVID 19 pandemic happened, the retail market was significantly impacted and several retail businesses have been lowered and threatened with bankruptcy.

Although technology innovation raises challenges, digital transformation is a way to innovate and redefine industries. Digital innovation aims to develop scalable enterprises that in coming years will be critical to organization growth in Peru.

A pandemic of COVID 19 pressuring the Government to revisit its growth models by relying more on emerging infrastructure and transformation is leading many countries worldwide to face challenging economic conditions.

Environmental, economic and technological challenges are highly aggressive for retail sectors around the globe. Retail companies in Peru must manage their supply chain agilely to overcome this and the viability of retail companies in Peru [7].

Industrial businesses have big odds, but challenges [4, 8]. The benefits of Retail 4.0 contribute to economic development of manufacturing enterprises. First, we will define a company, the fundamental characteristics and the importance of this business category's organizational and operational durability, and then discuss the key obstacle to or delay new technology adoption.

Manufacture is the selling practice of products. The products, machinery and processing are produced. The last items can be offered to the final customer or any business. The manufacturing method includes operation that renders raw materials the finished product. The definition of the object begins and is normally connected to the configuration of the elements and the materials. Production processes make these materials the final component required [9].

Various studies examine that digitization is an important factor in the success of microenterprises [5, 6], the present study wishes to demonstrate that this reality is replicated in Peruvian microenterprises in the retail 4.0 sector, which is why the objective of the present study is to identify the relationship between digitization and the success of Peruvian microenterprises in the retail 4.0 sector.

1.1 Organizational and Operational Agility

Producers need to constantly update their products and services to develop a strategic advantage in an increasingly digital environment. They must be flexible to create value and separate themselves from the rivalry in businesses and business [10].

The organization's agility depends on its members' facts, experience and inventiveness [11]. Activity, speed, mobility and skill include organic agility. In comparison, organizational resilience is continuously innovative. Fresh opportunities are generated through technical development in the retail industry, including the outsourcing of additional non-value operations utilizing equipment and agile software. This enables organizations to adapt quickly to trends and environmental changes.

Expanding the idea of organizational agility implies agility will adapt to change accomplished by unrelenting ingenuity and the use of flexible and reconfigurable technologies [12]. Quick and precise printing of judgments and the development of a valid and real-time knowledge system are also synonymous with agility. Lean production is also the first step in improving retail and external process control, both in the detection and recycling of waste sources. Lean and effective technological advancement leads to organizational efficiency and improved resource output [13].

Organizational and organizational resilience are the key principles that enable the growth of Business 4.0 businesses worldwide. It also allows decision-making easier and more effective. Operational resilience lets us quickly and easily prepare for customer demands through machines and smartphones.

1.2 Customer Experience

Consumer engagement is the attempt made to give the customer more than just a commodity, through architecture, related support, and connectivity across the whole product cycle [14]. Using technology and digital technology, new market models can be built and new consumer value can be generated. Customers' active involvement in the phase of product creation often addresses their unique requirements and needs [10]. However, in the numerous fields of customer service, this may be feasible and we will discuss some of these areas in the following section:

Customer understanding: Companies must consider their consumer desires and expectations. Others utilize social media to see what keeps their customers comfortable or sad. They use their past encounters and learnings. Companies frequently market their goods on numerous digital channels.

Topline Growth: With salespeople using them for meetings and for sales pitches, the usage of multimedia platforms is growing. Tablets and web tools in particular, enable users to connect and communicate with them. Some people use CRM to connect local references to customers. These networks provide real-time sales and discounts over Ethernet.

Customer touchpoints: Digital platforms may be utilized to enhance after-sales and customer support. They can be used for a variety of internet consulting work that can be completed that can be physically done to save the client or company. These instruments help the consumer to save time and money for the business. Many businesses already provide consumer solutions to boost consumer contact points [15]. Digitally modified

businesses: Besides the usage of modern technology technologies, businesses adjust their way of doing business to help their companies. Some use conventional goods for digital platforms.

New digital businesses: Besides the usage of digital businesses, some companies often offer new digital products to manage the product lifecycle. The retailer will keep these goods aware of its' own products. It would also support the consumer by estimating the wear period of their product to avoid loss. Digital Globalization: Convert multinationals into global corporations. These businesses benefit from multinational pooled finance, HR resources, and also key development and design skills. Services exchanged around the globe encourage productivity and reduce risk.

Leadership is a matter of digital market change. In order to accomplish digital transition and shift, good leadership is required. But it is important to develop a plan to know with which fields to start. The transition of everything cannot be done at once by a corporation. Reinventing corporate practices to optimize computer technologies and promote the collaboration of the supply chain involves analyzing any part of each work. All operations must be analyzed and re-engineered and each organization must start with a separate portion [16, 17].

Through widening the concept of organizational agility, agility takes the shape of adaptation to improvements and can be accomplished by constant creativity and the usage of scalable and reconfigurable technology. Agility is often a question of quick and successful decisions and of building up a relevant information system in real-time. Lean development also is the first phase in improving production and external management of operations and in the identification and removal of waste sources. Lean welding and effective technology use contribute to operational stability and increased resource performance. Organizational and organizational resilience is the basis for manufacturing firms to work within the Retail 4.0 climate. It also makes for easier and more effective decision-making. Operational resilience helps them to efficiently and effectively respond to the demands of the consumer by using computers and devices [18, 19].

1.3 The Potential of Retail 4.0

Retail 4.0 is a solution for the future by developments by businesses in channel coordination structures, cyber-physical automation, and robotics. Its aim is to adapt by requiring customized goods, to shifts in customer behavior. This causes the company to shift its paradigms and procedures to switch to customized mass manufacturing, often called mass personalization. Interoperability, virtualization, decentralization, real-time capacity, service orientation and modularity are main concepts for Retail 4.0. Interoperability enables a person or a computer to execute several operations. It also aims to establish a popular programming language that allows communicating between various computer systems such as computers and software simpler [2, 20].

Virtualization is characterized by means of process simulation or the process-intensive sensor devices as the capacity to generate a virtual picture of the floor and the production process. Decentralization is the decentralized policy of regulation. It is able to make decisions rapidly available for employees and machines (particularly thanks to ICT's) [21, 22].

The orientation service reflects the reorientation of its business model based on accessible evidence. It includes repenting the way to do business with the consumer by providing not just a commodity, but also a full and optimized solution via a combination of services and functionality now allowed by integrated sensors. Lastly, modularity implies that all can be separated into tiny sets. The agile development processes are a special principle. To help handle the complexities of a procedure, the product or method should. Smart and linked modern emerging technology is the gateway to a 4.0 world. Indeed, commodity insight is the capacity for data collection and review. Connectivity requires data to be moved from one item to another in order to enable data communication, decision-making, and review [8, 23].

1.4 Technologies Supporting Retail 4.0

A corporate policy must be enforced, be it human capital, finances, strategies, and content. This strategy must be applied. Resources are designated by a business that develops implements and implements policies to enhance its productivity and effectiveness as 'all properties, skills, organizational processes, qualities, intelligence, and knowledge' [24].

The ubiquity of the Internet and the exponential growth of all sorts of innovations imply that businesses will recognize and pick the ones most relevant to their truth. New technology classes relating to retail 4.0 may be illustrated in the literature review.

The final list of activated innovations has been concluded: advanced manufacturing; additive manufacturing; growing reality; simulation; cloud computing; industrial IoT; cyber protection [25, 26].

Advanced manufacturing reflects the technological improvements businesses can utilize for product and procedure creation. This involves the use of digital modeling, computer-aided design, and manufacture. Several firms provide various more or less common solutions in the form of mass customization [27, 28].

The method includes successively filing layers of material according to a blueprint designed on the device, enabling the creation of prototypes and componential pieces of special and uncommon shapes. Materials used for additive manufacturing can be metallic, ceramic, fiber or bi-fabricated. The process represents the technologies used for developing 3D structures by software.

It may also be used to put digital knowledge into existence to promote repair, assembly, control devices, product design etc. In order to imagine and communicate with phenomena, virtual reality simulates a fictional environment.

Simulation: combining the numerous IT methods and advanced systems applications to model and simulate the device performance. The simulation of configuration, performance, and functions can be designed to be accurate, thus improving the design efficiency of a product and enhancing its success rate for one-time inventions. Cloud storage: it enables connectivity between computer software and hardware over the Internet. It's characterized as storing and viewing data via the web rather than a local hard drive Cloud computing provides businesses and consumers with a high degree of scalable news, high flexibility, and high dependability [29, 30].

2   Methodology

Desk analysis has found a thorough view of the digital transformation in the manu-facturing business in the most influenced processes of the digital transformation of the processing field. In addition, a link has been formed between the numerous company abilities and the digital retail industry transition.

Nevertheless, a methodological methodology has been implemented for the gather-ing of data from several businesses operating in the manufacturing field. For different companies depending on scale, a broad spectrum of the study was intended (small, medium, and large). The number of questionnaires answered was 334. Questionnaires were distributed in Google formats and the data stored were analyzed using the SPSS predictive process. The research has randomly chosen personnel who act as mechanics, supervisors, and quality officials in order to address the survey.

In addition, the quantitative method was addressed with a survey questionnaire which was entered into Google formats. This Google form has been granted a survey of 550 participants. The questionnaires were responded to by just 334 respondents. Data are maintained for mathematical analysis and validation hypothesis when downloading and uploading the excellent file to SPSS from Google.

3   Results

3.1   Regression Analysis

Table 1. Model summary.

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.399[a]	0.159	0.149	0.08172

a. Predictors: (Constant), External Factors Average, Strategic Average, Organizational Average, Cultural Average, Managerial Average

The SPSS statistical program was used to execute the regression analysis, and the hypotheses were tested with a margin of error of 5%. The outcomes are as follows (Tables 1 and 2):

- Performance and cultural issues are intimately linked (0.005)
- Strategic factors have a significant impact on performance (0.000)
- Performance and management issues are intimately linked (0.013)
- organizational variables and performance have a significant association (0.003)
- There is a strong correlation between performance and external circumstances (0.002).

Table 2. Coefficients[a]

Model		Unstandardized coefficients		Standardized coefficients	T	Sig.
		B	Std. error	Beta		
1	(Constant)	.369	.015		24.240	.000
	Cultural average	.203	.071	.226	2.855	.005
	Strategic average	−.529	.089	−.516	−5.946	.000
	Managerial average	.218	.074	.133	2.945	.013
	Organizational average	−.235	.079	−.225	−2.975	.003
	External factors average	.166	.054	.156	3.097	.002

a. Dependent Variable: Performance

Table 3. Component matrix[a]

Component	Component	
	1	2
Cultural average	0.876	0.081
Strategic average	0.904	−0.108
Managerial average	0.895	0.011
Organizational average	0.877	0.006
External Factors average	0.571	0.525
Extraction Method: Principal Component Analysis		

a. 2 components extracted

3.2 Factor Analysis

A Cronbach Alpha indicator was used in the Factor Analysis to determine the validity or validity of the data acquired.

The validity and reliability of the analysis were examined by examining each variable separately (Table 3).

When it comes to internal and external aspects of a company, the Cronbach Alpha values for each of these components ranged from 0.877 to 1.07, with the exception of external elements, which had an alpha of 0.57.

Validity and reliability analyses were found to be acceptable in all except one variable, the "External Factors" variable (Cronbach Alpha 0.571), which is regarded as acceptable but likely to include some bias.

3.3 Interview Findings

The goal of this study is to understand digital transformation care among operating retail companies.

This report offers insights into retail businesses. In order to identify how retail businesses, manage digital manufacturing transitions, both quantitative and qualitative methodologies were applied. This study seeks to examine in detail the problem of digital transitions and the relationship of the digital process with the dynamic structure of capabilities.

Secondary data are also collected from the internet and advisory sources to further emphasize how the transition takes place, in the context of the era of new technologies, in industrial businesses. The way new digital technologies are applied is to enormous adjustments to retail firms. The design method is turned into a completely interactive one with 3D applications built on paper-based technology. In addition, automatic machines support manual labor to improve productivity and accuracy by manual processing. Lastly, during the distribution time, warehouse procedures and coordination of the entire operation were converted into an automated approach to improve process accuracy and productivity. Research indicates that supermarket businesses are still experiencing transition.

Knowledge of robotics, the internet of things, improved realism and simulation remain the key method. Exhibitions and forums are some platforms for the development of information in the topic used by respondents. Rarely do organizations have an internal R&D mechanism that allows them to consider patterns more thoroughly.

However, R&D not only lets the companies realize the trend but also allows it simpler and faster to spot market opportunities and developments. R&D serves its clients not only. The sensing goal is primarily to collaborate with external personnel and to externalize R&D programs that enable micro and small businesses to identify opportunities [25, 27]. After sensing, the necessary processes are important for an entity to use certain opportunities. Retail companies in Peru are restructuring their business model to allow emerging technologies to fulfill demand. Small firms benefit from complimentary assistance from strategic partners to identify and deter assets that may occur during this transition process. Moreover, retail businesses can not only restructure their strategies but also rationalize decision-making protocols in the digital transition phase to remove errors and partialities [10, 30].

In addition, retail businesses have succeeded in seizing the value that new innovations can achieve by inspiring and including their staff in the digital phase.

Summarizing the capability mission, the reorganization of the business paradigm and creating a disruptive workforce plan is encouraged. Successful recognition and adaptation to technological opportunities lead to retail companies' development and profitability [31]. It is important for maintaining the competitive advantage to become or reconfigure assets and structures. Both interviewees demonstrated the importance of employee interest in decision-making.

Through doing so, companies could acquire greater responsibility for strategic acts to "a more thorough and expedient recognition of opportunities and threats" Awareness of the transition capability indicated by both respondents is another significant aspect.

The enrichment and development of workers and current company information resources to extract benefits from modern technologies is of considerable importance.

In addition, incentives are designed to promote and reward transition employees. Finally, it is primarily by enhancing workers' skills for manufacturing digitalization and granting them incentives to engage in a transition that the role of retail firms is improved. Retail businesses can therefore participate in expanding their staff so that innovative technologies can be implemented. Furthermore, to overcome the problems of inadequate demand research and an easier and reliable approach for managing competition in the face of the significant difficulties in the garment industry, the finding that digital transformation is important. This report highlights the expected effect on the whole supply chain activities in the retail field of digital transformation. Digital transformation through Internet practice and artificial intelligence continues to show that digital transformation plays a significant role in the success of the supply chain.

The study also outlined the obstacles that retailers could encounter as digital transformation is being introduced in their supply chain activities. Companies must consider and join additional demand channels and more digital customers as regards the role of creative business models that add value to their product portfolio. It is also essential for supply chain management to understand how these new innovations may be utilized for their existing supply chain processes and how these technologies can be used.

4 Conclusion

The study shows that engaging in and implementing new technology would provide businesses with a permanent competitive edge by greater access to knowledge, cost savings, better quality of goods, sensitivity, and collaboration skills. Superb changes will arise in the digitalization of supply chain control. In this article, we will highlight some of the issues which underline the significance, challenges, and competitiveness of the management of the digital supply chains.

Combined digital supply chain management will greatly encourage supply chain convergence to reduce market fragmentation and have a competitive solution to digital technology. The theory of supply chain management could be significantly changed in a mid-range diffusion approach for the introduction and application of new technologies. The main limitation of the study is that since it deals with micro companies, it is necessary to extend the research in order to generalize to South American companies, as future research is proposed to expand to large companies in Latin America to verify the behavior of the variables in this group of companies.

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Improving Gen Z Contextual Work Performance Through Langford's Leadership Big 5 and Structural Empowerment

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Abstract. The purpose of this study is to investigate which type of leadership characteristics advocated in Langford's Leadership Big 5 Model can enhance Gen Z work performance. In addition, this study seeks to develop current knowledge on effective leadership characteristics to manage Generation Z. This study also endeavours to examine the mediating effect of structural empowerment in managing Generation Z and identify the appropriate leadership characteristics to enhance the contextual performance of generation Z workforce.

Keywords: Leadership characteristics · Structural empowerment · Generation Z · Contextual performance

1 Introduction

The impact of leadership in the workplace have received an increased attention in academic research recently. This is largely due to the realisation that leaders play a pivotal role in enhancing employees' work performance. Hence, understanding what type of leadership characteristics would be crucial in managing employees' work performance, and more specifically for Generation Z employees who will make a bulk of the workforce. Generation Z employees were born in and after 2000 (Jones et al. 2007) and were brought up during the digital revolution when profound changes occurred in how the world functions. They are the generation that cannot live without internet tablets, social networks, smart phones, etc. (Singh and Dangmei 2016; Sidorcuka and Chesnovicka 2017).

Given the fact that Gen Z employees are different from Generation Y (Millennials), studies have shown that, it is pertinent that organisations must find ways to capitalise through enhancing and improving Generation Zs' work performance. Nevertheless, with all positive features that Gen Z have, studies have shown that they still lack problem-solving skills and have not yet established their ability to not only look at a situation, but also to analyse it in a way that helps them reach to a decision (Gaidhani et al. 2019).

Analysing and problem-solving skills and decision-making skills are important in enhancing the work performance of Generation Z which needs to be nurtured by their

superior and leaders. Thus, the aim of this study is to examine the impact of Leadership Characteristics based on Langford Big 5 Leadership Model on Gen Z's work performance with structural empowerment as a mediator in enhancing work performance. Langford et al. (2017) suggested a new leadership model based on the Big Five model which theorised that leadership behaviours can also likely fall on the big five dimensions and that understanding personality characteristics might be related to effective leadership. Thus, they developed a leadership big five model which is a broad model of leadership combining several existing leadership models into five common characteristics (Voice, Organize, Innovate, Connect and Enjoy).

1.1 Background of the Study

There is a compelling need for a better understanding of the issues which influence generation Z work performance as they are much different than previous generations, such as the fact that they are more practical, more impatient, more agile, braver, more positive about the future and have a more realistic work expectation than Millennials (Andrea et al. 2016; Gaidhani et al. 2019). Yet, they lack problem-solving skills and have not yet formed their ability of decision-making (Gaidhani et al. 2019).

Although the Big five personality characteristics (OCEAN) model have been widely studied and used, Langford et al. (2017)'s model of Langford Big five leadership characteristics (VOICE) has only been mentioned in a few articles. None of which expanded the model to include the impact of those characteristics on employee performance, and more specifically, contextual performance (Weerasekara 2018; Miralam et al. 2020; Hernaus et al. 2021).

Another important factor that affects generation Z work performance is employee empowerment (Magano *et al.* 2020); empowered employees have a greater chance to reach higher levels of productivity since they are able to feel a sense of control over their work. Thus, employee empowerment is potentially an important variable which may offer considerable benefits including improved organizational responsiveness and greater employee satisfaction and productivity (Biron and Bamberger 2010; Kundu et al. 2018).

On the other hand, Murari and Gupta (2012) argued that various types of leadership characteristics have different impact on employees' empowerment. In addition, Asif et al. (2015) argued that if leaders created progressive relationships with their employees and obtain their confidence and foresee their requirements by making them structurally empowered, it will ultimately lead to work satisfaction. Furthermore, it has been speculated that leader's characteristics encourage employees all structural empowerment dimensions of access to opportunity, resources, information, and support by supplying employees with the power to accomplish their tasks (Udod et al. 2020). Moreover, Biron and Bamberger (2010) argue that when incorporating structural empowerment enhances the outcomes and for both the employee and the employer, and thus, enhanced task performance may be generated.

Hence, based on the background discussed above, it is pertinent to examine the issue on how to enhance the work performance of Gen Z through leadership and empowerment as Gen Z workforce constitute the bulk of the workforce in the near future.

1.2   Problem Statement

As generation Z have just started to enter the labour market, the need for a better understanding of the issues which influence their contextual work performance becomes stronger. These issues include leadership characteristics, Generation Z unique characteristics and need for structural empowerment (Al-Asfour and Lettau 2014; Kick et al. 2015).

1.3   Research Gap

This study constitutes to fill in three main gaps in research namely; theoretical gap, Structural Empowerment, and Contextual Gap.

Theoretical Gap. Research has shown that Generation Z has several unique characteristics which makes them different than previous generations. (Berkup 2014; Kick et al. 2015; Andrea 2016; Jiri 2016; Andrade 2018; Yaneva 2018; Chillakuri and Mahanandia 2018; Schroth 2019). Thus, Generation Z workforce requires an expansion on Langford's framework of leadership to identify which leadership characteristics are necessary to acquire their full potential and increase their employees' contextual work performance.

Structural Empowerment. Up until the current research, there are no published studies on the mediating effect of structural empowerment on the relationship between leadership characteristics and employee's contextual performance. Most studies have examined the relationship between leadership characteristics and psychological empowerment or empowerment in general (Dewettinck and van Ameijde 2011; Murari and Gupta 2012; Men and Stacks 2013; Asiri et al. 2016; Abuzid and Abbas 2017; Jada and Mukhopadhyay 2018; Javed et al. 2019).

Contextual Gap. Most leadership studies carried out in the middle east have been focusing on women leadership (Yaseen 2010; Yusuf 2014; Thompson 2015; Kattan 2016; Al-Ghamri 2016). Few research which have examined youth issues were focused on their education and unemployment (Al-Swailem 2013; Mohsen 2014). On the other hand, Abdulrazaq et al. (2020) argues that there are only a few recent studies in the Arabian Gulf Region that explore leadership characteristics' impact on employees. There is a lack of literature in Saudi Arabia that focuses on the effect of empowerment on different generation cohort's performance in Saudi Arabia. In particular, there are only two studies to date which explored this topic; (Lim 2013) and (Ahmed et al. 2016) where both studies focused on the effects of Generation Y motivation and empowerment on performance respectively.

Therefore, there is a need to fill the research gap by linking the appropriate leadership characteristics with generation Z workforce contextual performance. Thus, this area of research has not been explored thoroughly in the context of Saudi Arabia and this study has the potential to yield new and enlightening results and fill this contextual knowledge gap in literature.

1.4 Purpose of Research

The purpose of this study is to:

1. investigate Leadership characteristics based on Langford Big 5 Leadership Model to manage Generation Z so they can reach their fullest potential and enhance their individual work performance in Jeddah, Saudi Arabia. In this model 5 characteristics were identified are voice, organize, innovate, connect and enjoy,
2. develop current knowledge regarding leadership characteristics that is most effective for the generation Z and the mediating effect of structural empowerment, and

1.5 Significance of Study

This comprehensive review of relevant literature has the potential to make a significant contribution in four areas:

1. This study aims to contribute by extending the Langford Big 5 Leadership Model theory through empirical evidence with regard to the conceptual link between Langford Big 5 Leadership Characteristics, Structural Empowerment and Employee contextual performance.
2. Fill the gap in the literature by integrating the view of Lanford's Big 5 Leadership Model, LMX Theory and Kanter Theory. Through the framework proposed in this study enabled a clearer view how leadership characteristics and structural empowerment would influence employee performance.
3. The findings of this study will be able to expand the current existing literature on structural empowerment.

Practical Significance. From a practical perspective, findings of this study may be useful to management, policy maker and the organization as a whole by highlighting the appropriate leadership characteristics and structural empowerment needed to improve generation Z contextual work performance. In addition, the findings of this study would help organizations to carefully weigh the costs and benefits related to creating policies and help employees from all generations, including Generation Z, to reach their highest levels of capability.

1.6 Research Question

This study aims to answer the following Question. Does structural empowerment mediate the relationship between Lanford Big Five leadership characteristics (voice, opportunity, innovate, connect, engage) and generation Z employees' contextual work performance?

1.7 Research Objective

To determine whether structural empowerment mediate the relationship between leadership Langford Big Five characteristics (voice, opportunity, innovate, connect, engage) and generation Z employees' contextual work performance.

2   Theoretical Background

Many factors can affect employee's performance such as, the working environment, culture, family support, working skills, job security and leadership (Al-Ahmadi 2008). Such factors, according to research, have a direct effect on generation Z's work performance in Saudi Arabia.

2.1   Linking Underpinning Theories with the Research Framework

This study focuses on the mediating role of structural empowerment on the relationship between leadership big five characteristic and generation Z employee contextual performance. In this study leadership big five characteristic is defined as the personality traits and behaviours of leaders, which is based on Langford big five leadership model developed by Langford et al. (2017). These characteristics are; voice, organise, innovate, connect and enjoy (Langford et al. 2017). Mediating role of structural empowerment between Langford Big 5 leadership Model and contextual work performance is also a focal point of this study. Hence, the research framework of this research uses Langford Big 5 Leadership Model, LMX Theory Based and Kanter's theory, to support the link between the variables in this study.

As this study focuses on leadership and employee's performance, it deemed essential to link both concepts with appropriate theories including Leader-member-exchange (LMX) and According to Kanter's theories. In definition, LMX theory focuses on the relationship between leaders and their employees (members) and postulate that leaders effect employees through the quality of the relationship development between them (Kim et al. 2017). Consequently, offering subordinates tangible and intangible rewards improves the performance of workers (Malik et al. 2016). Therefore, LMX theory encourages empowerment since empowering the relationship between leaders and members would permit employees to perform their work more effectively (Erdogan and Bauer 2015; Kim et al. 2017).

Whereas, Kanter (1993) proposed the "theory of structural empowerment" which discusses organizational behaviour and empowerment. This theory states that a situation's characteristics can either encourage or constrain optimum work performance in spite of personal predispositions. Likewise, empowering organisations provide employees with "access to information, support, resources and opportunity" (Gilbert et al. 2010). Kanter's theory provides a framework which can predict employees' performance, job satisfaction, burnout, organizational commitment, leadership practices and more (Kanter 1993; Larkin et al. 2008; Gilbert 2010; Orgambídez-Ramos and Borrego-Alés 2014).

Access to opportunity refers to the possibility for growth and movement within the workplace along with the opportunity to enhance knowledge and skills. While access to information is having the formal and informal technical knowledge and expertise necessary to accomplish tasks effectively in the workplace as well as understanding of organizational decisions and policies and current state. Lastly, Access to support refers to receiving guidance and feedback from subordinates, peers, and superiors as well as being provided with problem solving guidance (Orgambídez-Ramos and Borrego-Alés 2014; Havaei and Dahinten 2017). In short, these theories are used to link the framework

variables of this study, including independent variables, mediator, moderator and the dependent variables.

In addition, generational theory suggests that generational cohorts share similar life experiences and social context which let them develop similar beliefs, expectations, attitudes and views regarding their lives that are different from other generational cohort. Thus, generational cohorts develop distinct characteristics from one another. Consequently, these cohorts describe not only differences in age but also differences in attitudes, beliefs and values (Lazarevic 2012).

2.2 Langford's Big 5 Leadership Characteristics

Langford et al. (2017) suggested that leadership behaviours can also fall on the big five dimensions and developed a leadership big five model which is a broad model of leadership combining several existing leadership models into five common characteristics (voice, organize, innovate, connect and enjoy). Each one of these characteristics is aligned with one of the big five characteristics; extraversion is aligned with voice, conscientiousness is aligned with organise, openness to experience is aligned with innovate, agreeableness is aligned with connect, and emotional stability is aligned with enjoy. Such alignment offered both researchers and practitioners the opportunity to understand leadership behaviour from anew broader perspective compared to previous leadership models.

2.3 Employees Contextual Job Performance

According to Eliyana et al. (2019), work performance is a work achievement by an individual from the organization and it is extremely affected by three main aspects: organizational support, management effectiveness and work performance of each individual working at that organization. Addressing employees work performance should be a top priority of every organization order for it to survive and succeed in the ever-changing business environment (Masa'deh et al. 2016).

There are two types of job performance; contextual performance, and task performance (Witt et al. 2002; Carlson et al. 2008; Abas 2016). According to Ramos-Villagrasa et al. (2019), task performance refers to the behaviours which "contribute to the production of a good or the provision of a service". It involves behaviours that differentiate one occupation from another, role-prescribed and usually included in job description (Witt et al. 2002). Therefore, it is difficult to find generic measurements for task performance, and thus, job context specific measurements are used instead (Ramos-Villagrasa et al. 2019). On the other hand, Contextual performance is defined as the behaviours which are "needed to support the social fabric of the organisation" (Witt et al. 2002). These behaviours contribute to the organizational goals by providing to its "social and psychological environment" (Ramos-Villagrasa et al. 2019). Carlson et al. (2008) argue that contextual performance involves job dedication, which refers to self-disciplined behaviours such as working hard taking initiative, and following rules, and interpersonal facilitation, which involves "interpersonally oriented behaviours that contribute to organizational goal accomplishment". These include encouraging cooperation, putting people at ease, taking initiative, proactivity, and expressing compassion and sensitivity.

Thus, contextual performance behaviours are not specific for a certain job but rather essential in all jobs. Therefore, contextual performance can be generically measured (Witt et al. 2002; Ramos-Villagrasa et al. 2019).

A lot of research has been done in the past on task performance indicators. However, some researchers (Abas 2016; Aslan and Yildirim 2017; Kim et al. 2017) argue that contextual performance is an important component that enhances organizational effectiveness irrespectively of the particular job held. This is due to the fact that employees who are engaged in contextual performance are involved with "voluntarily helping their co-workers by putting extra energy to complete a given task, putting extra time to get task done on time and so forth" (Abas 2016). Thus, such performance increase employee engagement and lead organisations to meet their goals. However, not many studies have examined the relationship between leadership characteristics and contextual performance and almost none of which studied the mediating effect of structural empowerment on contextual performance.

2.4 Employee Empowerment

Employee empowerment is a continuously interesting field of research since it supports organisations in improving work performance of workers and improves their satisfaction. It aims to create an organisation made of skilled, competent employees who can fulfil their duties professionally while offering the best knowledgeable resources related to their work performance, as required by the organisation (Roji and Jooste 2020). Employee empowerment has been defined in many different ways in literature. Murari and Gupta (2012) have defined it as "the process of making the organization responsive and flexible, providing a climate for continuous learning, developing a culture which values initiative, honesty and achievement and encouraging the employees for taking more responsibility through sharing of power and responsibility by working together". On the other hand, Kumar and Kumar (2017) defined it as giving employees autonomy and responsibility to some extent in decision making concerning their specific organizational goals.

Employee empowerment gives employees the sense of control and competence; they become self-motivated, committed and expend maximum effort in their work, and thus, yield better work performance (Idris et al. 2017; Kumar and Kumar 2017). Hence, empowerment is a powerful management tool. To achieve it, the leaders must guarantee that employees are having the right combination of knowledge, information, power and rewards to work more passionately. In addition, permitting employees to have independence and constant feedback within the organization makes the empowerment process more successful (Kumar and Kumar 2017).

There are two main types of employee empowerment that are thoroughly discussed in literature; psychological empowerment and structural empowerment. Psychological empowerment is described as "the increase in task motivation or enhancement of feelings of self-efficacy by fulfilling employee's need for selfdetermination" (Idris et al. 2017). Employees can be psychologically empowered by supporting mechanisms like motivation, self-efficacy and knowledge sharing. Moreover, it gives employees a sense of belonging that makes employees more engaged in their workplace (Idris et al. 2017; Kumar and Kumar 2017; Saleem et al. 2018).

On the other hand, structural empowerment refers to "the actions taken by the leader to delegate the decisionmaking powers to subordinate" (Kundu et al. 2018). It removes the barriers between managers and employees, which results in better communication, information-sharing and participation in the decision-making processes (Idris et al. 2017). Moreover, it focuses on structures of power sources which improve shared decision-making processes, lifelong professional development, influence of employees, and strong community partnerships. Thus, it guarantees that the organisation's mission, vision and values become a reality (Roji and Jooste 2020).

Based on the discussion above, structural empowerment seems to pose a great impact on employees' performance (Erdogan and Bauer 2015). At the same time, leadership characteristics play an important role in successfully implementing employee empowerment; some leaders tend to empower their employees more than others. Men and Stacks (2012) have studied the impact of organizational leadership style and employee empowerment on employees' perception of organizational reputation and found that "transformational leadership positively influences employees' perception of organizational reputation through empowering employees", and that Workers that feel more empowered in terms of perceived competence and decisionmaking control empowerment have a more positive evaluation of organizational reputation. On the same note, Udod et al. (2020) found that employees' perceptions and evaluations of leader behaviours, such as when they value and respect employees' opinions, personal emotions, abilities, and Character, are strongly associated to workplace empowerment. Hence, the perception of empowerment is a direct result of the support and autonomy given by the leader. One the other hand, Kumar and Kumar (2017) have found that when leaders encourage their workers to participate in meetings and take their ideas and opinion consideration, they empower them.

Structural Employee Empowerment Dimensions. Structural empowerment refers to employee's perceptions of access to information, resources, opportunities, and support (Havaei and Dahinten 2017).

Leadership should create conditions for work effectiveness by ensuring employees have "access to the information, support, and resources necessary to accomplish work and that they are provided ongoing opportunities for development" (Orgambídez-Ramos and Borrego-Alés 2014). Thus, employees who perceive their work environment provides them access to these factors are structurally empowered.

Access to Opportunity. Biron and Bamberger (2010) postulate that incorporating structural empowerment enhances the outcomes and for both the employee and the employer, and thus, enhanced contextual performance may be generated. In addition, Kim et al. (2017) also found that empowered employees most probably perform well in customer services. Since access to opportunity dimension refers to the possibility of growth and promotion as well as the increase on knowledge and skills (Orgambídez-Ramos et al. 2015), it is a significant motivator for employees to perform better. Hence, based on the literature discussed, this study has a reason to believe that access to opportunity play a role as a mediator between leader big 5 and performance.

Access to Support. According to Orgambídez-Ramos et al. (2015), access to support concerns employee's capability to response to situations, take non-ordinary and risk-taking actions without having to pass through organization's higher authorities. Leader's characteristics play an important role in encouraging employees to accomplish their tasks by applying structural empowerment second dimension of access to support (Udod et al. 2020). Accordingly, it can be logically implicated that the leadership big five characteristics effect access to support as well. Since access to support also refers to receiving feedback, emotional support, helpful advice and guidance as well as hands-on assistance in becoming structurally empowered employees (Roji and Jooste 2020), as well as generation Z employees' preference to leaders with good social skills whom give support when needed (Kingston 2014; Andrea et al. 2016; Gaidhani et al. 2019), access to support would lead to enhancing employees' contextual performance. Additionally, access to support would provide generation Z a work environment that nurture mentoring which enhance employees' professional development. Moreover, it would help them increase their lack problem-solving skills, analyse situation, and make good professional decisions. Hence, this empowerment would enhance generation Z contextual work performance. Moreover, most researches were geared towards investigating empowerment in general. For instance, Saleem et al. (2018) hypothesized that "Employee empowerment has a significant impact on employee performance". Their study revealed that employee empowerment positively affects employee performance through the mediational effect of behavioural integrity.

Access to Information. In structural empowerment, leaders play a vital role in providing access to information; by sharing information, leaders are sharing power as well. Specially, any information about the organization's mission and performance are vital for empowering employees (Men and Stacks 2012). Leadership characteristics play an important role in giving subordinates access to information; some leaders prefer not to give their followers all the information needed and, subsequently, not fully empower them. Thus, this research has reason to believe that leadership big five affects access to information dimension of structural empowerment. Access to information appeals to subordinates from generation Z workforce since they prefer transparency, flexibility, face-to- face communication, to be taken seriously and to have their responses heard and acknowledged (Gaidhani et al. 2019). Thus, this study has reason to believe that access to information would increase their contextual performance. Moreover, Edgar et al. (2017) have found that the aspects of trust, which can be drown from access to information, and happiness were positively associated with contextual performance. Furthermore, most researches were geared towards investigating empowerment in general. For instance, Kim et al. (2017) hypothesised in their study that "High employee empowerment leads to high employees' service performance rated by their immediate supervisor". Their study revealed that empowered workers are more likely to perform suitably in customer services.

3 Conclusion

This study explored what structural empowerment mediating effect on the relationship between the leadership characteristics and generation Z employees' contextual work

performance by examining three of its dimensions, Opportunity, Support and information, and identify if these dimensions have a significant mediating affect. As previously mentioned, this study is built upon the LMX Theory and Kanter's theory, and how leadership behaviour can affect their subordinates; specifically, workers from generation Z. Moreover, according to the Generation theory, generational cohorts share similar life experiences and social context which let them develop similar beliefs, expectations, attitudes and views regarding their lives that are different from other generational cohort. Hence, Generation Z workforce requires a different framework of leadership that is different from the previous generations. In addition, generation Z workforce are still new to the workforce with little job experience. Thus, the appropriate leadership characteristics which increases their individual performance have not been determined yet. Leaders should acknowledge and attain certain characteristics to increase generation Z's contextual performance. Structural empowerment plays an important role in mediating this relationship. Therefore, Leaders should acknowledge the importance of applying structural empowerment in the work place.

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Analyzing Sharia Supervision Effects on the Performance of Islamic Banks: Evidence from the GCC Countries

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Abstract. Purpose – This study analyzes the effects of Sharia supervision and corporate governance variables on the performance of Islamic banks (IBs) in the Gulf Cooperation Council (GCC) countries.

Design/methodology/approach – This study uses a dynamic panel regression model to analyze persistence in bank performance and estimates the results using the generalized method of moments (GMM) estimator. A sample of 27 full-fledged Islamic banks from 2005 to 2019 in six countries from the GCC.

Findings – The results reveal that Sharia supervision-and corporate governance-related variables are more significant in determining the performance of Islamic banks. Furthermore, the results show that bank size, the capital adequacy ratio, growth, and inflation are significant and positive determinants of Islamic banks' financial performance.

Practical implications – The analysis undertaken in this study addresses the literature gaps regarding the effect of Sharia supervision on Islamic bank performance, suggesting recommendations for implementing corporate governance guidelines for Islamic banks to improve current practices.

Originality/value – Despite existing studies on the relationship between Sharia governance and performance and to the best of the author's knowledge, this study is the first attempt to investigate the impact of Sharia supervision on Islamic bank performance in the GCC. In addition, this study enriches our understanding of the fundamental role of Sharia supervision in Islamic banks.

Keywords: Sharia supervisory board · Corporate governance · Financial performance · Islamic banks · GCC

1 Introduction

The concept of corporate governance (CG) has received enormous interest from economists and international organizations over the past few decades especially after the Asian financial crisis of 1997. Whereas, the escalation of administrative corruption issues in multinational corporations, Consequently collapse them as happened in the Enron crisis In 2001, as well as the WorldCom scandal in 2002, and as was demonstrated vividly

by the 2008 global financial crisis. These scandals resulting from corporate mismanagement highlighted the importance of a governance system that embraces a high level of transparency, accountability, and oversight as enhanced measures to alleviate these problems. Several studies (Erkens et al. 2012; Sharfman 2009) conclude that poor governance, such as the inefficiency and lax of the board of directors to monitor the CEO, and the lack of integrity of executives, encourage higher risks in the financial sector.

Governance in banks is increasingly important compared to other companies because of its nature, which has a direct impact on financial markets, especially after rapid developments in global financial markets due to the globalization of financial flows, technology, and other factors that have led to higher risk volumes in the banking sector[1].

Banks are one of the most important components of the financial system and the main drivers of economic activity finance, as they raise funds from individuals and institutions with a fiscal surplus and employ them to meet the consumer and investment needs of economic units with a fiscal deficit and help drive economic growth. Given the great importance of banks and the multiplicity of stakeholders with them, the real practice of the governance system is essential to improving investor confidence in the banking system. Governance weaknesses in the banking sector can lead to a loss of market confidence in the ability of banks to manage assets and liabilities properly, including deposits, which can lead to a liquidity crisis or lead to a large number of customers of a bank withdrawing their deposits simultaneously (Banks Run). This is similar to the Bank of Credit and Commerce International (BCCI) in 1991 and the Barings Bank in 1995, which could affect the integrity of the financial system and the economy as a whole (ISRA 2014, pp. 71–177).

Islamic banks, which are the subject of this study, have witnessed rapid growth in recent decades and exponentially spread in more than 75 countries across the globe due to increased interest in Islamic finance and financial services by several international financial institutions, such as the World Bank (WB), especially after the last global financial crisis in 2008. Thus, it's seen as an alternative to conventional institutions in providing financing because of their peculiarities in the level of macroeconomic stability and financial stability (Al-Hashel 2015, pp. 2–3).

There is, however, that modern Islamic banking and finance could be traced back about 45–50 years ago. Compared to conventional banking, we find that they have achieved great success, and the demand for its services expanded rapidly in Muslim majority countries and other countries in Asia and Europe. The total assets of the Islamic finance industry reached around the world at the end of 2019 by more than USD 2.88 trillion (Thomson Reuters 2020/21, p. 61). Islamic banks in the GCC countries ranked and weighed significantly in the Islamic financial industry, particularly after acquiring approximately USD 854 billion, at 45.4% of the total assets of the Islamic banking industry around the world in 2019 (IFSB 2020, pp. 12–14). In terms of profitability

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[1] Banks differ from other joint-stock companies because the collapse of banks affects a wider circle of people and weakens the financial system, which has a negative impact on overall economy.

performance In the GCC, both the return on assets (ROA) and return on equity (ROE) of for IBs in GCC averaged at 1.48% and 11.8%, respectively, in 2019[2].

Saudi Arabia has the highest share of Islamic banking assets in the GCC. Its market share reached approximately 51.4% of the region's total banking assets (higher than 2018: 45.3%), followed by the UAE with 18% (less than 2018: 22%), Kuwait 13.1% (less than 2018: 14.2%), Qatar 12.6% (less than 2018: 14%), Bahrain 3.6% (higher than 2018: 2.8%), and the lowest share was Oman 1.4%. The market share of IBs and financial institutions in these countries accounts for at least 14% of all assets (IFSB 2020, pp. 12–17); (IFSB 2019, pp. 10–15).

Therefore, implementing governance principles for (IBs) has become more urgent in parallel with globally recognized standards. In particular, those principles seek to assure the shareholders that their equity capital will be utilized by the board of directors effective decisions to maximize the value of the corporation, and the executive directors will perform their roles in the interests of the shareholders to generate returns. Simultaneously, reassure shareholders, investment account holders, and various stakeholders that all banks activities and transactions comply with the Sharia rules through the presence of the Sharia supervision board (SSB) as an essential mechanism of internal governance (Grais and Pellegrini 2006, p. 5).

This study contributes into the Islamic finance literature by multiple ways:

- This study has combines the theoretical aspect that demonstrates the concept of governance from an Islamic perspective in IBs in an integrated manner in all its aspects and its relationship to financial performance, in terms of profitability performance and measurement methods.
- This study recognizes the factors affecting the financial performance of IBs, while previous studies have focused on one aspect and overlooked the others.
- The study differs in the empirical aspect by measuring the impact of Sharia supervision on the performance of IBs.
- This study has used a large sample of data set of 27 full-fledged IBs, all operating in the GCC countries, which is considered the most important region of the Islamic financial industry despite the literature on the topic of corporate governance in the GCC banks being less developed in comparison to literature in the world.
- The study is distinguished from previous studies in terms of time horizon, which were between 2005 and 2019; it is characterized by the modernity of the data and the number of variables used and the statistical model to ensure the stability of the results.

2 Literature Review and Formulation of Hypotheses

Islamic banks, like conventional counterparts, play the role of a financial intermediary by mobilizing financial resources from those with financial surplus and directing them to those with financial deficits with the aim of making a profit. However, the Islamic banks are supposed to follow Islamic principles such as profit and loss sharing and prohibiting riba (interest) promoting economic well-being, and achieving economic, social, and

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[2] Only the full-fledged Islamic banking data are used in the computation of both ROA and ROE (IFSB 2020, p. 57).

development justice. Many studies have dealt with variables in financial performance and profitability in IBs, but a few have been concerned with banking governance and its relationship to profitability. This study has focused on the impact of Sharia governance structure of Islamic banking on their performance.

2.1 Sharia Board Size

The Sharia Supervisory Board on Islamic banking is an integral part of the governance structure. Many authors found positive association between SBS and Islamic banks performance (Khan and Zahid 2019; Chowdhury and Shah Rasid 2016; Bourakba and Gherbi 2015; Ramiz and Mangla 2010). The common number of SSB members in IBs is between three and seven members based on IFSB Governance Standard No.1. Moreover, AAOIFI Governance Standard No. 1 recommends at least three members. The increasing number of Sharia scholars on the board who belong to different schools of fiqh likely leads to a better interpretation of the bank's products and enhances their ability to control and review all transactions to ensure their operations conformity with Islamic law.

H1. There is a positive association between large size of the Sharia board and bank performance.

2.2 Board Director Size

In the context of Islamic banking, a reasonably sized board of directors is an essential mechanism for good governance because of the complexity of business and asymmetric information, as it monitors and advises executive managers to achieve appropriate returns Andres and Vallelado (2008). However, there are contradictory findings that supports smaller size boards have improved performance (Malik and Makhdoom 2016). Furthermore, as (Herman 1981, pp. 34–35) indicate, the large size of the board of directors increases the intensity of conflict of interests, and the same applies to (Jensen 1993, p. 35), who believes that when boards go beyond seven or eight people, they are less likely to function effectively and are easier for the CEO to control.

H2. There is a negative association between the large size of the board of directors and the performance of Islamic banks.

2.3 Independent Board Director

Independent directors or non-executive members on the board are among the factors that can influence a decline in agency issues and reduce information asymmetry. Their role depends on their experience and skills to represented Shareholders on the board of directors. Moreover, their presence on the board contributes to reducing and overcoming conflicts of interest among board members to gain and strengthen stakeholders' confidence. Additionally, the code of corporate governance and other key regulators have independent directors on the board, so that the functioning of the board becomes effective. However, it is argued that non-executive directors should be able to perform their assigned tasks effectively when they are working as independent board members; otherwise, they will not be able to yield and impart unbiased decisions (Fuzi et al. 2016).

H3. There is a positive association between independent directors and bank performance. However, a negative association could also be inverse because the deficiency of non-independent members on the board of directors may lead to biased decisions regarding financing contracts to achieve high profits.

2.4 Control Determinants

To examine the relationship between profitability determinants and bank performance. (Abu Wadi 2017; Al-Hamd 2013; found that large banks may have higher profitability owing to economies of scale because large banks are capable of diversified investment risks in the long term. Moreover, it found that capital adequacy ratio, growth, and inflation, affect the profitability of Islamic banks because (the Cooke ratio) is used to measure a bank's solvency to thrust its obligations and oversee any future risks, and economic growth as a macroeconomic variable could be an exogenous factor that influences bank capital decisions.

H4. There is a positive association between capital adequacy ratio and the performance of Islamic banks.
H5. There is a positive association between investment account holders and the performance of Islamic banks.
H6. There is a positive association between growth and the performance of Islamic banks.
H7. There is a positive association between inflation and the performance of Islamic banks.

3   Overview of the Governance in the Banking Sector

3.1   The Concept of Governance

The term governance received considerable attention at the beginning of the 1990s by many economists, academics, and international organizations such as the Organization for Economic Cooperation and Development (OECD), which issued the Principles of Corporate Governance in 1999, which was adopted by the World Bank (WB) and the International Monetary Fund (IMF). In addition, the Basel Committee on Banking Supervision (BCBS) issued the basic principles of corporate governance for banks due to the business insolvencies and various CG scandals that have occurred in the recent decades.

Furthermore, with financial globalization, Sharia governance compliance in IBs has become essential because of the unique characteristics of Islamic finance. Hence, CG implementation in IBs is necessary to complement the recommendations of international standard-setting bodies. Therefore, there has been encouragement to international standard-setting bodies and institutions of regulation that support the Islamic banking industry, such as the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) and Islamic Financial Services Board (IFSB) to promulgate a parallel

set of guidelines and standards for enhancing corporate governance practices in Islamic banks[3].

3.2 Governance in the Banking Sector

Corporate governance has been translated into various terms, such as good governance and institutional governance, the definition of CG remains controversy. This diversity in the definition of CG is also associated with the attempts of organizations to define it according to their area of concern. The Organization for Economic Cooperation and Development (OECD 2004, p. 11) has defined it as: "a set of relationships between a company's management, its board, its shareholders and other stakeholders which provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined". Furthermore, (the Cadbury Committee 1992) defined governance as "the system by which companies are directed and controlled". More specifically it is the framework by which the various stakeholder interests are balanced".

Governance from a banking perspective is "The way in which a bank's business and affairs are managed by its board of directors and senior management, affecting the determination of the banks objectives, and the protection of the rights of depositors, meet shareholder obligations and assure that banks will operate safely, with integrity and in compliance with applicable laws". (BCBS 2015, p. 3) However, we defined it as "The system by which banks are directed and controlled in pursuit of their aims, and by which they relate to their sources of capital". With the increasing complexity of banking activities, monitoring management performance by regulatory and supervisory authorities has become inadequate; thus, internal monitoring by shareholders and their representatives on the board of directors has become necessary for the safety of the financial system as a whole.

3.2.1 The Importance of Governance in the Banking Sector

Effective corporate governance is critical to the proper functioning of the banking sector, where corporate governance differs from the corporate governance for banks due to the peculiarity of banking and the financing business of mobilizing funds provided by shareholders, depositors, and utilizing these resources to achieve maximum profits. In addition, it differs from the generality of companies in that their collapse affects a far wider circle of people and may undermine the financial system itself, thus affecting the entire economy and society. Moreover, practicing good governance in banks by monitoring the board of directors' decisions will lead to an increase in operational efficiency by reducing input costs and maximizing output profits, and thus maximizing the market value of banks in a manner that guarantees growth and continuity.

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[3] (AAOIFI) and (IFSB) is an Islamic international autonomous non-for-profit corporate body that prepares accounting, auditing, governance, ethics and Shari'a standards for Islamic financial institutions and the industry.

3.2.2 Corporate Governance Principles for Banks

In 1999, the Basel Committee on Banking Supervision published initial principles of corporate governance for banks as the first document to assist banking supervisors in promoting and adopting the soundness of CG practices, with the aim of improving the efforts of all countries to assess governance structures and improve the quality of oversight. These principles have been revised by the Committee's several times, most recently in July 2015, in response to significant developments in financial markets and regulatory legislation resulting from lessons learned from the global financial crisis, more specifically, the revised principles include: (BCBS 2015, pp. 7–34).

- The role of the board in setting the bank's business strategy and financial soundness.
- The qualifications and composition of the board.
- The importance of an independent risk management function, including a chief risk officer or an equivalent.
- Distribution of responsibilities and setting clear rules of accountability for all employees.
- Monitoring risks on an ongoing firm-wide and individual entity basis.
- The board's oversight of the compensation systems.
- Availability of transparency and disclosure in all activities of the banks.

3.2.3 Determinants of Implementing Corporate Governance in Banks

– Internal determinants: The laws or rules that determine how decisions are concluded, as well as the distribution of powers within the bank between the general assembly of shareholders, the board of directors, and executive management, consequently leading to the reduction of conflict between the interests of these parties.
– External determinants: Represented in the general environment for investment in any country, which includes laws regulating economic activit, such as laws (money markets and companies, regulation of competition, prevention of monopolistic practices, etc.). In addition, the efficiency of the financial sector in providing necessary funding, the presence of regulatory bodies in tightening control over banks, and other elements, including stakeholders, private companies, auditors, legal professionals, and accountants.

Regulatory authorities play an essential role in activating and solidifying CG in banks by defining the legal and regulatory environment for good corporate governance in banks where the supervisory authorities carry out supervision and follow-up procedures for the effectiveness of the CG system and verify compliance with regulations.

3.3 Sharia Governance Concept in Islamic Banks

The definition of governance in IBs is hardly different from its conventional counterpart except in the Sharia rules dimension, which characterizes IBs. Sharia governance in IBs is generally defined as "the system that provides conformity for commercial transactions in all activities of IBs" (Khan and Zahid 2019, p. 4). Hence, the author referred to it as a

system that provides good management in financial institutions through the strict application of internal control regulations and the adoption of disclosure and transparency policies to protect shareholders, depositors, and stakeholders through the Sharia board as an independent body in the institution's structure, to ensure that all transactions comply with Sharia rules.

3.3.1 Corporate Governance Framework in Islamic Banks
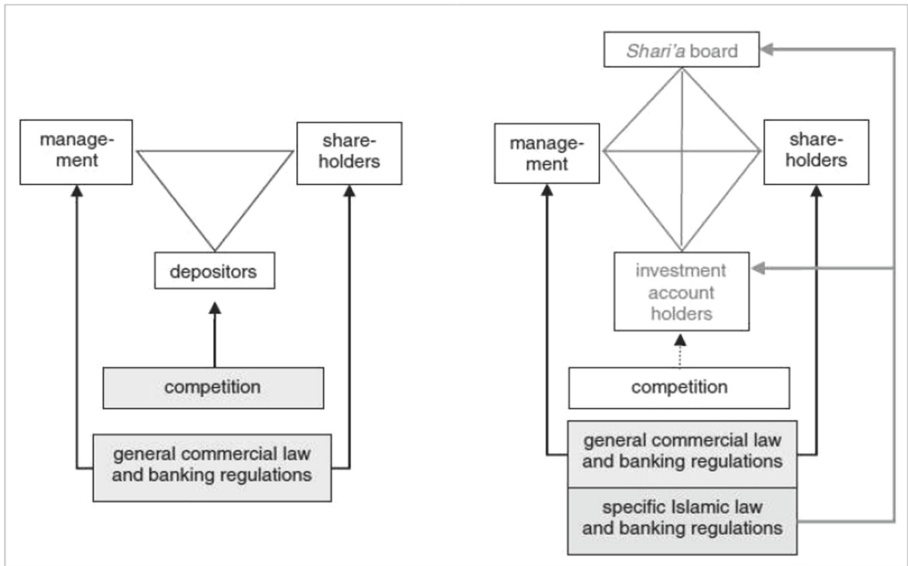
Fig. 1. The organizational structure of governance in Islamic and conventional banks. Source: (Nienhaus 2007)

Corporate governance has equally fundamental for both the conventional and Islamic financial services sectors, as Islamic banks, such as conventional banks, are joint-stock companies, and they are mandated to implement the (OECD) principles of CG, which summed in four pillars principles: "Justice, Responsibility, Accountability, and Transparency". In general, this viewpoint is compatible and similar to the Maqasid Al-Sharia brought in for the preservation of wealth. Corporate governance in Islam combines the necessity of adhering to the principles of Islamic Sharia; at the same time, it realizes the motive of profit, maximizing the wealth of shareholders, achieving stable returns for investment account holders, taking care of their interests with fairness, and protecting their rights via disclosure and transparency. (ISRA 2014, p. 763) However, IBs differs from conventional banks and goes beyond the boundaries of CG since it has religious and ethical connotations as well as cannot be waived. Otherwise, the bank loses Islamicity. Figure 1 above shows the basic components of governance in the banking sector, where conventional banks include four parties consisting of shareholders, the board of

directors, executive management, and other stakeholders. In most Islamic financial institutions, an additional body is part of the governance structure that has no counterpart in conventional banks, known as the Sharia Supervisory Board, whose mission is to ensure the extent to which the bank's business complies with Sharia rules. This includes observance of the rights of depositors, especially investment deposit holders, because investors in IBs are at higher risk than those in conventional banks beacuse their investment accounts are based on the Al Mudaraba contract[4]. This implies that the investment deposits approach in IBs is participating in the financial results of the employment of funds, be it profit or loss (Nienhaus 2007, p. 129).

3.4   The Principles of Islamic Banks

Compliance with the rules and principles of Islamic Sharia within the framework of providing financial services distinguishes IBs from conventional financial institutions; therefore, non-compliance with Sharia law by some banks will raise Sharia risk and damage its credibility to attract and retain investors. Observing the rights of investment account holders and Sharia governance is the most distinctive characteristic of Islamic banking, given its endeavor to achieve the legal integrity of the products and operations of banks, maintain their reputation and credibility, and raise the level of legal compliance (El-Hawary et al. 2004).

3.4.1   The Rights of Investment Account Holders

The relationship between conventional banks and depositors is based on the principle of fixed interest (usury). Thus, theoretically depositors in conventional banks are exposed to much lower risk because their funds are secured by the bank and do not bear the outcomes of the bank's investments as shareholders. Islamic banking is the opposite and different. Investment account holders bear risks very similar to those of shareholders, because of the contractual relationship based on the contract of Muḍarabah, the principle of profit-loss sharing (PLS). Nevertheless, they have no right to vote or monitor management decisions even though their deposits are generally far more numerous than shareholders, and shareholders have voices in the assembly meetings, and they may syndicate to using their leverage to influence the management to maintain their interests without considering the interests of investment depositors. Therefore, IBs are required to enlarge CG to include the interests of shareholders and investment account holders (ISRA 2014, p. 722).

In Islamic banks, under the principle of Muḍarabah, investment account holders know that there is no guarantee in their deposits because it conflicts with the spirit of Islamic finance. Therefore, IBs operate the funds of depositors and shareholders based on Muḍarabah or participate in various economic activities to achieve returns and distribute them fairly. However, there is a fundamental conflict of interest between Islamic depositors and shareholders in sharing a bank's profit performance because the

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[4] Islamic banks are exposed to certain risks associated with the features of legitimate contracts of Islamic financing and include: Credit risk, Equity investment risk, Market risk, Rate of return risk, Liquidity risk, Operational risk.

ratio by which the return expectant is shared numerically is not defined in Islamic deposit contracts. Hence, this is related to its performance. In the case of loss, the investment account holders loses the entire capital invested by the IBs as Muḍārib. Therefore, the majority of investment account holders seek to invest their funds in low risk investments with stable returns (following a defensive investment strategy). However, some banks may exploit the lack of information on investment account holders to invest in available liquidity at high risk because shareholders may favor a more aggressive investment strategy that offers higher returns with more risk to increase the residual income (profit share) or that the bank attempts to cover higher operating costs (IFSB-3 2006, p. 8). Such practices may lead to conflicts of interest, especially if the account holders' funds are commingled with shareholder's funds. This implies that banks will bear fiduciary duties towards shareholders without considering the rights of investment account holders. In this sense, the presence of deficiencies in the CG system will influence the confidence of the investment account holders in the banking industry, and hence will resort to withdrawing their funds.

In this framework, the IFSB issued a set of guiding principles to ensure the continued confidence of depositors in IBs, reducing conflicts of interest with various stakeholders, including the following (IFSB-3 2006, pp. 3–10):

- "Islamic banks should be able to set out the strategic roles of the Board of Directors, its committees, executive management, the Sharia Supervisory Board (SSB), the internal and external auditors, and set out the mechanisms of accountabilities of each organ of the governance".
- "Islamic banks should embrace applicable recommendations from internationally recognized corporate governance standards such as the (OECD) Principles and the (BCBS), and comply with the directives issued by supervisory authorities, as well as comply with Islamic Sharia rules".
- "Islamic banks shall provide the BOD of their financial and non-financial information in accordance with internationally recognized accounting standards, particularly those relevant to Islamic financial services".
- "The board of directors shall set up a Governance Committee, the roles, and functions of the Governance Committee shall not duplicate or overlap with the roles and functions of the Audit Committee, where could be some conflicts of interest between shareholders and investment account holders, especially where the funds are commingled, which could be difficult for the Audit Committee to deal with. Hence, the audit committee monitors primarily from the standpoint of shareholders' interests, and the Governance Committee monitors primarily from the standpoint of the investment account holders interests".
- "Islamic banks bear a fiduciary responsibility to investment account holders, no less than those of Islamic banks' shareholders. Hence, it is appropriate for Islamic banks to disclose their policies and practices with respect to the investment accounts that they offer and the right to access all relevant information concerning investment accounts".
- "Many IBs have adopted the practice of "smoothing the returns" (that is, the profit distributed) for their investment account holders and shareholders through reserves.

Therefore, the governance committee shall be mandated to monitor the profit equalization reserve (PER) and the investment risk reserve (IRR) and to make appropriate recommendations to the BOD on utilizing them".

3.4.2 Sharia Governance

A Sharia Supervisory Board (SSB) is the most important characteristic between the IBs and conventional banks due to its unique attributes that give legitimacy to all its dealings and transactions of the financial institutions to enhance their confidence. According to IFSB, a Sharia Governance has been defined as "a set of institutional and organizational arrangements through which an Islamic institutions financial services.

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The Impact of Blockchain Technology
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Abstract. Blockchain technology is claimed to lead innovations to many business paradigms by reducing fraud and providing safe transactions. This study examined whether the adoption of blockchain technology will impact their internal audit function (IAF) and the role of IAF in blockchain smart contracts in the financial sector. The study referred to the related literature review and followed the international standards for the professional practice of internal auditing (IPPF). The study found that internal audit function and relative associate with the basics of blockchain technology and reached a continuous audit model with blockchain smart contracts. Considering the significant benefits and also potential challenges of applying blockchain technology in the modern accounting system, the study filled a gap in knowledge on the impact of blockchain on internal auditing.

Keywords: Blockchain technology · Internal audit function · Blockchain smart contract · IPPF

1 Introduction

Industry 4.0 creates enormous impact and opportunity, and businesses must find a new path to innovate for competitive advantage that disrupts technology, innovations, and business modes [31]. As an integral part of daily life, these radical developments will inevitably impact the financial sector. In the meantime, globalization and technological advancements are interconnected forces that internal audit function will be a significant impact [12]. The most cutting-edge technology in finance technology is now blockchain technology [5]. It has attracted the attention of government entities, financial institutions, and investors in a number of countries. While the drawbacks of today's credit mechanism are apparent and in crisis, the blockchain-based distributed cryptographic ledger solves the credit insufficiency problem that has a tremendous impact on the current industry ecology and way of operation [25].

In a questionnaire of global banking executives conducted in May 2016, McKinsey discovered that around half of the executives thought blockchain would have a significant influence within three years, and some predict that this will happen during the next 18 months. Another survey of 200 worldwide banks indicated that 15% would be using blockchain technology substantially by the following year. According to IBM, 66 percent of banks will have commercial blockchain at scale in four years [16]. In 2016,

blockchain representatives from the Big Four accounting firms gathered at the American Accounting Association to explore the creation of a distributed ledger alliance. The Australian Securities Exchange has revealed its desire to use blockchain technology to rebuild its clearing and settlement systems [4]. As the incomplete statistics, according to the website of HACKERNOON, by 2020, approximately 400 banks and financial institutions will have used or will be utilizing blockchain technology [3].

As highly innovative business technology, blockchain technology has disrupted the audit function [9]. Blockchain, essentially an accounting technology, might make asset transfers and ledgers of financial and non-financial data more efficient and accurate. Because all transaction data is stored in up-to-date, immutable, and historical distributed ledgers, the potential of real-time audit is high. Blockchain might finally put an end to auditors' random sampling by allowing them to review every transaction [11]. As a result, it offers increased audit efficiency [9, 33]. Although scholars have affirmed the various advantages of blockchain technology, applying this technology in the financial field is still a relatively new research topic.

This study examined that the adoption of blockchain technology in financial institutions will impact their internal audit function (IAF). In particular, it looked whether and if so, blockchain smart contracts can reach continuous auditing in real-time. To address the research question of the impact of blockchain technology on internal audit in financial sector, the study referred to the related literature review and in accordance with the international standards for the professional practice of internal auditing (IPPF). Considering the significant benefits and also potential challenges of applying blockchain technology in the modern accounting system. The study filled a gap in knowledge on the impact of blockchain on internal auditing.

The remainder of the paper is divided into six sections. Section 2 review relative literature, Sect. 3 illustrate the basics of blockchain technology and internal audit, and Sect. 4 discuss blockchain technology drove internal audit function change. Section 5 discusses the continuous auditing with blockchain smart contracts, and Sect. 6 summarizes of the findings and recommendations for further research.

2 Review of Related Literature

In relatively early blockchain studies, researchers highlighted the benefits of reducing operational costs. Lazanis (2015) analyzed peer-to-peer transactions, automated settlements, and updated ledgers on blockchain networks, arguing that corporate fund payments can be made through blockchain networks, thereby reducing commission costs by cutting across settlement intermediaries. This study highlights the advantages of blockchain and looks more closely at the fact that if peer-to-peer payments are made using the blockchain network's own digital currency, the reduction in intermediate cost fees is more pronounced, and it has the potential to greatly streamline the transaction process and lower operational finance expenses. Liu and Shi (2016) suggest that accounting in blockchain mode will be transferred from "peer-to-peer" to "peer-to-network". This study found that the common audit of each node will record transactions and maintain updated data, which can reduce the influence of personal subjective factors of bookkeepers to a minimum. This is also one of the most significant benefits of utilising blockchain technology in the accounting profession.

Yoon, Hoogduin, and Zhang (2015) analyze blockchain from another dimension, and the author argues that the blockchain comes with an audit system that will transform the accounting ecosystem. The process of blockchain information writing is an automated audit of accounting transactions, review, confirmation, bookkeeping, and other bookkeeping activities, in which participants jointly confirm whether the accounts are true and complete, reducing falsification and satisfying stakeholders' requirements for accurate and authentic financial data. Sun et al. (2017) investigated blockchain from the standpoint of financial security, simulating a transparent distributed financial system on a private blockchain, with the financial system's customers being a corporation or a collection of companies. Each record node maintains a comprehensive and tamper-proof ledger, allowing any node to query all data at any time; at the same time, visitors' access is limited by cryptographic encryption technology, and external personnel can only access with authorization, ensuring financial data privacy. As a result, the blockchain financial system provides accounting data integrity and openness while preserving financial data safely and securely.

Tapscott (2016) suggests that blockchain auditing can be used to replace third-party auditing services, resulting in more secure and trustworthy "self-auditing". All participating nodes in the blockchain distributed ledger network are auditors and recorders of information and data. In data auditing, the decentralised auditing mechanism has significant advantages, and the blockchain ledger can guarantee the independence, objectivity, and impartiality of auditing work compared with the third-party auditors, and the information data of enterprises on their own blockchain financial system can guarantee the objectivity and accuracy of financial reports. Zhong and Jia (2016) also studied blockchain from the perspective of data reliability. According to the findings, the characteristics of blockchain and the benefits of big data may be used to tackle the problem of data silos in a targeted manner by evaluating the common difficulties of traditional Internet banking. The application of blockchain technology can improve accounting data structures and meet societal demands for online finance correctness and validity.

Through the analysis of previous studies, as a unique distributed ledger technology, blockchain's own structure can realize the functions of transparency, sharing, and non-tampering, which has a natural fit with accounting bookkeeping and auditing, and it is predictable that blockchain will be the best way to store data and share information. With the exploration and application of technology, the transformative role of blockchain in the audit industry is emerging step by step. In the future internal audit business, a lot of work can be handed over to blockchain-based smart contracts to complete. After a lot of research and analysis, scholars currently agree more on the great advantages of blockchain technology, which could be the Internet technology with the greatest impact on auditing in the future. However, to the best of my knowledge, there is relatively little research literature on the adoption of blockchain technology in the auditing industry, and more research is needed to deepen our knowledge of blockchain. Overall, the current research on blockchain internal auditing is far from adequate.

3   Basics of Blockchain Technology and Internal Audit

3.1   Definition of Blockchain Technology

In 2008, Satoshi Nakamoto created Bitcoin, the first cryptocurrency designed for peer-to-peer trade. Bitcoin transactions in digital assets are now safe and secure, primarily to the development of blockchain technology [32].

As a distributed ledger technology, blockchain technology is a data structure that uses cryptography principles to record the flow of transaction funds. It uses its own distributed nodes for network data storage, verification, transmission, and exchange, providing safe and stable, transparent, traceable, and efficient technical solutions for information recording and data interaction. On a blockchain, when a transaction is performed, it is broadcast to all nodes in the network. This transaction is verified by miners that the transaction is valid and called this process mining. Cryptographically signed transactions are organised into blocks once they have been validated by the miners. After validation and consensus, each block is cryptographically connected to the one before it. Each block contains a cryptographic procedure called a "hash" of the previous block, as well as a timestamp and transaction data. New blocks are distributed across network copies of the ledger, and any conflicts are resolved automatically according to pre-determined procedures [29]. As new blocks are added, the transactions in a block cannot be modified (creating tamper resistance). When transactions are recorded, the data in any one block cannot be changed retroactively without affecting all following blocks since a different hash value will be generated, and other blocks related to it will not be able to confirm the hash value, necessitating network majority consensus [28]. Various data is recorded on a list of records, which are linked together like chains. Every node on the blockchain network may see every transaction on that block, as well as all previous blocks, resulting in a comprehensive transaction database that is constantly updated and accessible to all blockchain participants [39].

For an illustration of how does blockchain technology work to prevent any unauthorized data changes, draw an example (see Fig. 1).

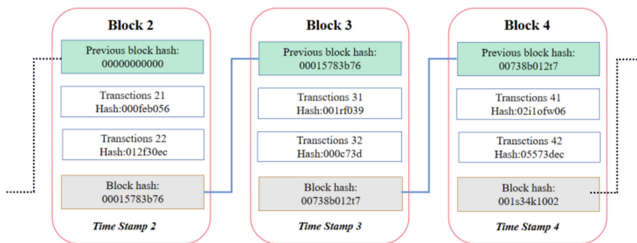**Fig. 1.** A figure to explain the way of encryption between blocks.

As Fig. 1 explain that there is a hash value in Block 2. This hash value is a 256-byte digital code randomly generated by an encryption algorithm. The authentication of the next block is based on the hash value of the previous block. Once the hash value of a certain block is changed, then every subsequent block cannot be authenticated [15].

Due to the length of the hash value and the number of blocks, it becomes difficult to recalculate the hash after the change. Therefore, it will cause huge modification costs and essentially cannot cause data tampering.

On a peer-to-peer network, blockchain technology allows a digital ledger of transactions to be recorded, preserved, and verified. Decentralized blockchain provides the same function as many intermediaries in our society in establishing trust and maintaining integrity between transacting parties by authenticating and documenting immutable transactions [24]. As a distributed ledger in which groups of transactions or events are recorded and kept in a chain-like data structure, blockchain eliminates the need for costly middleman validation and verification methods [6, 9].

3.2   Characteristics of Blockchain Technology

Blockchain can be thought of as a decentralised architecture with built-in security that improves transaction trust and integrity [10, 24]. This section seeks to provide an overview of the blockchain's most frequent traits as well as its disadvantages.

Decentralisation -   In contrast to centralised architecture, which has issues such as single point of failure and scalability, the blockchain uses a decentralised and distributed ledger to take advantage of the processing capabilities of all users in the blockchain network, reducing latency and eliminating the single point of failure [2].

Immutability -   One of the most important properties of the blockchain is its capacity to create immutable ledgers, which ensures transaction integrity. Databases can be tampered with in typical centralised designs, necessitating the establishment of trust with a third party to ensure data integrity. Because each block in the distributed ledger is linked to the preceding block in a chain of blocks, the blocks in blockchain technology are permanently recorded and never modified as long as the network is maintained by the participating user [2].

Transparency -   By sharing transaction details among all participating users involved in those transactions, blockchain provides a high level of transparency. There is no need for a third party in a blockchain setting, which increases business friendliness and ensures a trusted workflow [2].

Real-Time -   Because transactions are recorded and reconciled on the blockchain almost immediately after they occur, blockchain technology delivers near-real-time transaction records and account reconciliation [24].

Smart Contract -   Smart contracts are supported by blockchain by embedding programming code. When particular contract criteria are met, these applications can conduct transactions and make related ledger entries. In a decentralised setting, self-executing smart contracts allow for the timing of ownership transfers from one party to another [18, 24].

Better Security -   Although security is a concern for most new technologies, blockchain is more secure because it has a public key infrastructure that guards against unwanted data manipulation. Participants in the blockchain network put their faith in the consensus mechanism's integrity and security characteristics [2].

High Energy Consumption - Keeping a real-time ledger necessitates the use of energy. Every time a new node is created, it connects with the other nodes at the same time. Transparency is achieved in this manner. Miners on the network are attempting to solve a large number of solutions each second in order to validate transactions. They're putting a lot of processing power into it. Every node provides great fault tolerance, guarantees zero downtime, and assures that data recorded on the blockchain is immutable and censorship-resistant forever. However, these processes use both electricity and time [15].

3.3   The Relationship Between Blockchain Technology and Internal Audit

As known, Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations [8]. It assists a company in achieving its goals by implementing a systematic, disciplined approach to evaluating and improving the efficacy of risk management, control, and governance [27]. Internal auditors are expected to apply and uphold the Internal Audit Standards and IPPF. The Code of Ethics interprets internal auditor should be followed as Integrity, Objectivity, Confidentiality, and Competency. However, the audit risk caused by personal factors is also possible.

Independence - Audit independence is threatened by self-interest, self-evaluation, over-promotion, intimate relationship, and external pressure. Technology can avoid the judgmental influence of such human emotions.

Integrity - Lack of integrity is a flaw in human nature; they may turn a blind eye when auditors find fraud and errors. However, the capacity to create immutable ledgers ensures the integrity of transactions, which is a key aspect of blockchain technology [2].

Objectivity - With the development of the legislation and International Standards on Auditing, auditors' professional ability will be deviation whether they can catch it in time. Suppose we added the Standards in the protocol layer of blockchain that can be reduced audit mistakes caused by the lack of auditors' professional ability.

Confidentiality - When auditing, many trade secrets can be touched by auditors. By using blockchain technology, it may be protected. Such as, Deloitte used blockchain technology to integrate with the Irish banking system.

Competency - Blockchain technology is more trustworthy than auditors. For example, the blockchain audit application - Perma Rec of Deloitte's Rubix platform. This programme establishes a real-time connection between the audit firm and the audited firm's financial system, monitors and verifies the audited firm's transactions and financial entry, and keeps track of business operations. Through this application, established distributed accounts. This is an innovation in auditing, which enables help to do audits by using blockchain and smart contracts.

4 Blockchain Technology Drove the Role of IAF Changed

Internal audit is an independent supervision and evaluation activity based on the company's internal economic activities and serving the management department. At the same time, it also supervises the authenticity, completeness, and legality of the company's accounting information and plays a role in inspecting, supervising, and evaluating the safety of the company's assets and the company's own business performance. With the development of the market economy, many enterprises have become larger and larger, and their fiduciary and liability relationships have become more and more complicated. Great changes have taken place in the content and main structure, leading to corresponding changes in a wider range of internal audit services and service targets. Internal audits are conducted at many levels, from management to the company, with the goal of improving governance, risk management, and control systems. Internal audit functions that are most effective will reflect each organization's priorities and values. Each organization's senior managers and audit committees will have different expectations of the internal audit role [27].

The impact of blockchain on auditing is still in its early stages [26]. In a world where new technologies, such as blockchain advancements, are thriving but standards are behind [14], the function of internal audit needs to be continuously developed to include the ability to verify the regular operation of the various components of the blockchain, which provides for verification of access rights, encryption, and encryption codes, and proof of smart contract transaction codes, functions, and security [17]. Internal audits will need to build procedures for evaluating the operation of blockchain systems as a result.

Auditors could consider using relevant data analytic in blockchain and expanding consulting services such as control design, change management, and blockchain governance with resources freed up from traditional evidence collection and testing [24]. Internal auditors will also need to update their understanding of both internal and external risks associated with blockchain processes, as well as develop relevant monitoring procedures [17], as the internal audit function has changed as a result of blockchain technology, necessitating the development of a conceptual framework to envision the function of internal audit.

5 Continuous Auditing with Blockchain Smart Contract

Blockchain has a lot of potential as a tamper-proof audit trail because of its cryptography and consensus methods that ensure transaction integrity. Smart contracts on the blockchain can be used for a variety of things, including the automatic settlement of financial derivatives and the secure transfer of property titles [7, 13]. When combined with smart contracts [35], which are computer programme that perform tasks on behalf of a human user, blockchain has the potential to drastically change current business procedures. If a financial institution's database architecture is a blockchain platform, blockchain-enabled smart contracts can generate agile supply chains and financial organisations by automatically monitoring and executing the terms of bills of lading and financial derivatives [4, 30]. Then according to the encryption and consensus mechanism, the

execution of many businesses is realized through the blockchain smart contracts, including internal audits. Therefore, based on blockchain technology, the roles of internal audits of financial institutions can get a conceptual framework.

Continuous auditing was pioneered by Vasarhelyi and Halper (1991), and continuous monitor the internal control was implemented. Also can achieve continuous data assurance, continuous risk, monitoring and assessment, and continuous auditing in management systems [20, 30]. Internal auditing has been associated with commonly continuous auditing because they are less constrained by legislative obligations [19]. Rozario and Vasarhelyi (2018) stated that audit data analytic advance to the natural progression ADA3.0 with blockchain smart contracts. Fundamentally, the blockchain platform enables smart audit procedures' developing that run prediction models autonomously, discover critical items, and offer real-time audit data. Smart auditing models can improve audit quality and reduce the gap between auditors' and stakeholders' expectations [30].

However, with the application of blockchain platforms by financial institutions, internal audits only need to design corresponding smart contracts for the audit tasks to be carried out. Smart audit methods are now included in the definition of blockchain smart contracts (e.g., the analyses of audit evidence) [30]. Through data analysis and mining, risk assessment and abnormal early warning of supervision and special audits can be realized in a timely manner. Find audit doubts or audit trails. For example, commercial banks have added loan usage analysis rules, credit risk early warning rules, and internal control monitoring rules to the blockchain platform.

In addition, when internal auditors design automated audit procedures-smart contracts when smart business contracts executed by financial institutions violate the rules and cannot be executed, internal auditors need to audit smart business contracts. For example, bank deposit and loan pledge third-party supervision and credit business. Inventory pledgee applies to the bank for inventory pledge third-party supervision and credit business, including pledge price, quantity, description, pledge verification, etc. These phrases will be embedded in business logic and implemented on the blockchain. The blockchain enables banks and pledgers to authenticate the data given by the pledger and the actual pledge through smart contracts. An error message is generated if one or more of the smart contract's rules are broken, and the transaction cannot be completed. The internal auditor must rectify such breaches in order to authenticate the transaction's authenticity.

6   Conclusion

The idea of adopting blockchain technology in internal auditing is investigated in this study. Internal audits demand decentralisation and tamper-proof characteristics, which blockchain technology provides. Traditional internal audits will be drastically altered by the concept of blockchain technology internal audits. However, data security difficulties, timeliness issues, and legal issues remain obstacles to using blockchain technology in internal audits. In this paper, a conceptual framework for the application of blockchain technology to internal audits is presented. The results will be more generalised if a questionnaire is given to a large number of internal auditors at financial institutions. Conducting comparisons with empirical research as a future study option might be intriguing.

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The Impact of Different Intellectual Capital Dimensions on Banks Operational and Financial Performance

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Abstract. This article aims to become aware of the effect of various intellectual capital dimensions on the operational and financial performance of Jordanian banks. This study model contains the primary intellectual capital dimensions (human capital, structural capital, and Relational capital) as independent variables, while the banks' operational and financial performance as dependent variables. Data received from 136 bank employees through formerly examined and validated questionnaires are used to examine the variables' relationships. The records had been analyzed the usage of partial least squares-structural equation modeling (PLS-SEM) analysis. The outcomes display no effects on financial performance from human capital, positive effects on financial performance from relational capital, and structural capital, while operational performance is positively affected by all intellectual capital dimensions. This study expects that intellectual capital contributes significantly to the banks' performance. Finally, this paper provides implications for decision-makers on intellectual capital importance.

Keywords: Human capital · Structural capital · Relational capital · Jordanian banks · Operational and financial performance

1 Introduction

Societies have reached to the present day by diverse economic changes in the history. The first of these changes is in the agricultural society, then followed by the industrial society in which production and consumption gained value, and the last stage is the information society stage, in which human capital gained important value by adoption of knowledge as the most important production factor, as well as labor, capital, and land, which are accepted as classical production factors [1, 2].

In the period from the industrial economic system to the expertise economic system, the importance of intangible assets has increased [4–7]. From that day, the importance of intangible assets among the competitive elements of companies and banks is increasing. Therefore, the 'invisible' asset is not a tangible asset, it explains the concept of intellectual

capital [3, 4]. This study aims to find the effect of the intellectual capital on the banks' financial and operational performance.

Today the business environment is dynamic, and uncertain [3, 4]. It is possible for banks to adapt to their environment, by the ability to adapt quickly to changes in the environment [1, 2]. From that, companies should organize their organizational structures, strategies and activities to adapt to the changing environmental conditions and competitive pressures [3, 4]. Changes in the industry, uncertainty in market conditions, changing customer requirements and conditions related to general social, economic and political factors, and uncertainty that arise with the change in these factors, enable banks to adapt to outside world and competitive conditions more effectively than before. However, when the environment is dynamic and competitive, it is challenging for banks to maintain their operational and financial performance. While a bank could be more innovative during periods of establishment and growth, it may become more stable in order to maintain its present operational and financial performance. Entrepreneurship and innovation again require changes, and maintaining this status requires flexible competencies [2].

The importance of the study arises from the importance of intellectual capital in the performance of the banks, which ultimately maintains the banks' operational and financial performance as well as raises their competitiveness. The remainder of this article is prepared as follows. Section 2 reviews the related studies on intellectual capital. Section 3 presents the research model and hypotheses development. Section 4 illustrates the research methodology. Section 5 reports the analysis results and the findings. The final section explains the discussion and conclusion.

2 Literature Review and Hypotheses Development

Ali, Hussin [1] identify a correlation between intellectual capital elements and innovation performance in the financial sector. In addition, Desoky [5] examines the impact of intellectual capital on the firms' financial performance of two main sectors in the Bahrain Bourse. They found that customer capital, human capital, and structural capital have correlations with firm performance. Also, Sardo and Serrasqueiro [6] analyze the relationship between firms' market value, intellectual capital, and financial performance as well as the relationship between ownership attention on intellectual capital. They found that capital-operated efficiency positively impacts firms' financial performance in the short run.

Appuhami [7] studied value innovation efficiency on investors' capital gains on shares, where the data were collected from listed companies in Thailand's stock market, the results stated that the increase in firms' intellectual capital increases its investors' capital gains on shares and then the firm will achieve the competitive advantages. This argument is supported by Castro, Ramírez [2] that emphasize how intellectual capital increases the financial performance by the development of structural capital.

In addition, De Faria, Noseleit [8] examined how intangible assets such as intellectual capital affects the financial performance of small and medium-sized firms in Brazilian market using a survey method, the results show that increases in intellectual capital efficiency will achieve higher financial performance. Maharani and Faisal [9] studied

the correlation between the financial performance and intellectual capital based on 63 Indonesian companies from six industrial sectors between 2015 and 2017, the outcomes show that intellectual capital positively impact the financial performance, and it can create a value for a company to increase performance and competitive advantage.

The majority of the previous studies on intellectual capital were in foreign countries [1, 2], therefore, this study focuses on intellectual capital dimensions (human capital, structural capital, and Relational capital) in the Jordanian banks context. In addition, the majority of the previous studies on the intellectual capital impact on bank performance focused mainly on the banks' financial performance [2], while this study examines this impact on both operational and financial performance.

Studies on intellectual capital classify the elements of intellectual capital under three headings as human capital, structural capital, and relational capital. Human capital generally refers to all the knowledge and skills for employees. In other words, it can be defined as the experience of employees, risk-taking, problem-solving abilities, and leadership characteristics that increase the efficiency of companies [7]. The most important feature of the information society is the evaluation of information as a production factor [3, 6, 8, 9]. Prior studies indicate that increasing the firm human capital adds value to the firm and increases its performance [4, 9]. Therefore, the following hypotheses are organized.

- *H1. Human capital (HC) positively impacts Financial performance (FP).*
- *H2. Human capital (HC) positively impacts Operational performance (OP).*

Unlike human and structural capital, relational capital is related to the external environment of the business. relational capital regulates their relations with people and organizations outside the business. The company's relations with people outside the company are explained as relational capital [4]. The components of relational capital include customer loyalty, business name, distribution channels, and brands [6, 7, 10]. Prior studies indicate that increasing the firm relational capital adds value to the firm and increases its performance [5, 8]. Thus, the following hypotheses are organized.

- *H3. Relational capital (RC) positively impacts Financial performance (FP).*
- *H4. Relational capital (RC) positively impacts Operational performance (OP).*

Structural capital includes all kinds of elements that will increase the effectiveness of human capital. Databases, organizational charts, strategies, inventions, and procedures are examples of structural capital [1]. The elements that create the structural capital within the company are patents, design rights, copyrights, trade secrets, management philosophy, organizational culture, management processes, information systems, network systems, and financial relations [1, 5, 8, 9]. Prior studies indicate that increasing the firm structural capital adds value to the firm and increases its performance [4]. Thus, the following hypotheses are suggested.

- *H5. Structural capital (SC) positively impacts Financial performance (FP).*
- *H6. Structural capital (SC) positively impacts Operational performance (OP).*

3   Methodology

3.1   Sampling and Data Collection

In this research, data on the intellectual capital, financial performance and operational performance were gathered during February 2022, from employees in Jordanian banks. A questionnaire was used to collect primary data for this study. Online questionnaire was created using Microsoft Forms and the copies were distributed through Emails and social media. The completed questionnaires were filled by 136 employees in Jordanian banks. All questionnaires were used for further statistical analysis.

Before commencing the data collection process, the data collection instrument was prepared in the Arabic language, which is the formal language used in Jordanian banks. The researchers are fluent in the Arabic language, eliminating the need for a panel of experts. In the first step, the authors sent the questionnaire to a panel of accounting professors interested in both intellectual capital research and bank performance research. A pilot test was performed with 30 respondents to decide on main instrument issues such as wording, content, and ambiguity. The feedback from the pilot test was used to make minor revisions to the questionnaire. The final questionnaire encompassed three parts, namely, an introduction, demographic data, and construct measurements, each construct in the third part is measured using a 5-point Likert scale.

The respondents' profile is presented in Table 1. Based on the table, male respondents constituted 58.82% of the total respondents, while the remaining respondents 41.18% were female. The majority of the respondents 67.65% were first level employees, and most of them (80.88%) have a bachelor degree. Moreover, around one third of the respondents (36.03%) had less than 5 years of work experience.

3.2   Measurement Development

The first part of the questionnaire is measured using nominal scales as it contains basic data, while the rest of the questionnaire parts are measured using 5-point Likert scales. The first part contains basic information questions prepared to collect demographic data on employees in Jordanian banks (gender, age, working experience, occupation level, and educational level). The third part of the questionnaire contains 5 items that measured HC, 7 items that measured SC, and 5 items that measured HC [10]. There were also 5 items to measure banks' operational performance and 6 items to measure banks' financial performance adapted from [10].

3.3   Common Method Bias

The research is subject to common method bias (CMB) due to the intrinsic feature of the self-report questionnaire (independent and dependent variables from the same respondents). Thus, Harman's single-factor test is used to evaluate the CMB. Even the recent research (e.g. Alshurafat, Al Shbail [11]) recommend utilizing Harman's single-factor to evaluate the CMB. Harman's single-factor result shows no CMB due to the cumulated variance value of 27% which is sufficiently lower than the suggested point value of 50% [12].

Table 1. Respondents' profile

Demographic variable	Category	Frequency	Percentage
Gender	Male	80	58.82%
	Female	56	41.18%
Occupation level	First level employee	92	67.65%
	Department head	24	17.65%
	Manager	20	14.70%
Age	Less than 30 years	68	50.00%
	Between 30 and 40 years	52	38.24%
	Between 41 and 50 years	15	11.03%
	More than 51 years	1	0.73%
Work experiences	Less than 5 years	49	36.03%
	Between 5 to 10 years	32	23.53%
	Between 11 to 15 years	32	23.53%
	Between 16 and 20 years	15	11.03%
	More than 20 years	8	5.88%
Educational level	Diploma	2	1.47%
	Bachelor	110	80.88%
	Masters	24	17.65%

4   Analysis and Findings

In this study, a structural equation modeling (SEM) approach is utilized. SEM is a multivariate statistical technique that integrates empirical data and the underlying model to examine the correlations between components. For summarizing an exploratory research like this, PLS-SEM is thought to be beneficial [13]. PLS SEM is a good way to evaluate a complicated model without limiting the number of samples used [14]. SmartPLS 3.3.2 software was used to do a PLS-SEM study to test the suggested theoretical model and assumptions [15]. The reliability and validity of the concept were taken into account when analyzing the measurement methodology. The structural model was examined using several factors, including (R2, Q2) predict and path coefficients [16].

4.1   Measurement Model Result

This research evaluated the outer model by examining the item factor loadings, Cronbach's alpha, and the composite reliability (CR) values, with the average variance extracted (AVE) for the confirmation of convergent validity [17]. In addition, Fornell and Larcker [18] criterion and the heterotrait and monotrait (HTMT) ratio is used to confirm the research model's discriminant validity, as suggested by prior literature (e.g., Franke and Sarstedt [19]; Henseler, Ringle [20]). Convergent validity results is presented in

Table 2, which shows a acceptable level of internal consistency as the Cronbach's alpha values and CR values exceeding 0.70, this satisfies the rule of thumb suggested by Nunnally [21]. Moreover, individual item loadings were over 0.70 and were highly significant (p < 0.001) (see Fig. 1), Therefore, no item was removed. The AVE values of all constructs exceeded the 0.50 threshold, representing the convergent validity of the model [17].

Table 2. Measurement model results

Construct	Code	Loading	P-value	CA	CR	AVE	VIF
Human Capital (HC)	HC.1	0.759	<0.000	0.833	0.882	0.599	1.787
	HC.2	0.808	<0.000				1.874
	HC.3	0.779	<0.000				1.600
	HC.4	0.796	<0.000				1.799
	HC.5	0.726	<0.000				1.544
Relational Capital (RC)	RC.1	0.726	<0.000	0.851	0.894	0.628	1.445
	RC.2	0.794	<0.000				1.988
	RC.3	0.770	<0.000				1.771
	RC.4	0.810	<0.000				2.060
	RC.5	0.855	<0.000				2.497
Structural Capital (SC)	SC.1	0.735	<0.000	0.886	0.911	0.594	1.758
	SC.2	0.822	<0.000				2.512
	SC.3	0.776	<0.000				2.243
	SC.4	0.796	<0.000				2.030
	SC.5	0.735	<0.000				1.767
	SC.6	0.780	<0.000				1.908
	SC.7	0.743	<0.000				1.853
Operational Performance (OP)	OP.1	0.735	<0.000	0.847	0.891	0.620	1.641
	OP.2	0.844	<0.000				2.154
	OP.3	0.756	<0.000				1.665
	OP.4	0.820	<0.000				1.841
	OP.5	0.778	<0.000				1.792
Financial Performance (FP)	FP.1	0.788	<0.000	0.920	0.937	0.714	2.272
	FP.2	0.812	<0.000				2.636
	FP.3	0.908	<0.000				2.889
	FP.4	0.879	<0.000				2.415
	FP.5	0.856	<0.000				2.005
	FP.6	0.820	<0.000				2.325

Tables 4 and 5 show the AVE square roots of the latent constructs (Fornell and Larcker criterion). The values are higher than the correlations of the corresponding latent variable [18], and the HTMT ratio values remaining under 0.90 [19], indicating the presence of discriminant validity (Table 2).
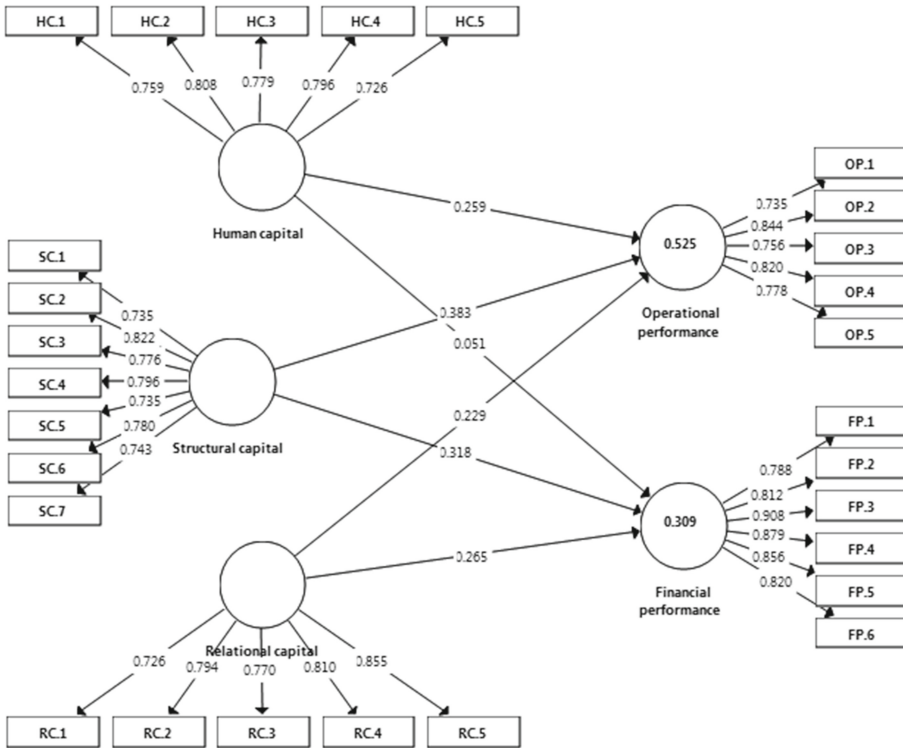
Fig. 1. Item loadings and R^2 values

Table 3. Discriminant validity based on Fornell-Larcker criterion

Construct	(FP)	(HC)	(OP)	(RC)	(SC)
Financial Performance (FP)	**0.845**				
Human Capital (HC)	0.324	**0.774**			
Operational Performance (OP)	0.556	0.546	**0.787**		
Relational Capital (RC)	0.490	0.473	0.593	**0.792**	
Structural Capital (SC)	0.509	0.464	0.648	0.630	**0.770**

Table 4. Discriminant validity based on HTMT criterion

Construct	(FP)	(HC)	(OP)	(RC)	(SC)
Financial Performance (FP)	–				
Human Capital (HC)	0.359	–			
Operational Performance (OP)	0.628	0.636	–		
Relational Capital (RC)	0.543	0.554	0.685	–	
Structural Capital (SC)	0.551	0.536	0.724	0.719	–

4.2 Structural Model Results

After ensuring the construct validity and reliability of the study's measurement model, the structural model is assessed by looking at its prediction powers as well as the relations between the components. The collinearity test; the R2 values (variance explained); significance of the structural path coefficients; the f2 (effect size); and the Q2 (cross-validated redundancy) test for predictive relevance are all used in this assessment [22]. In addition, bootstrapping was used to make the statistical significance of the path coefficients easier to assess. A variance inflation factor (VIF) values were less than the threshold value, indicating that collinearity was not present in this study.

The bootstrapping method with 5000 resamplings is applied. The path coefficients and t-values for each hypothesized path were analyzed to see if the predicted paths were supported. This study hypothesized six correlations, five of which appear to be significant (Fig. 1). The results revealed that the two top predictors of financial performance were relational capital ($\beta = 0.\ 0.265$, $t = 2.112$; $p < 0.05$) and structural capital ($\beta = 0.\ 0.318$ $t = 2.648$; $p < 0.05$), thus, hypotheses 2a and 3a were supported. The effect of human capital on financial performance was insignificant ($\beta = 0.051$, $t = 0.629$; $p > 0.05$). Thus, hypothesis 1a was not supported. Moreover, the effects of human capital, relational capital and structural capital on operational performance were found to be positive and significant ($\beta = 0.259$, 0.229 and 0.383; $t = 2.283$, 2.427 and 4.940; respectively, $p < 0.05$), meaning that hypotheses 1b, 2b and 3b were supported. The results of the structural model analysis are presented.

The in-sample explanatory power of the model was then evaluated by looking at the R2 values of the endogenous variables. R2 values of 0.75, 0.50, and 0.25 are regarded considerable, moderate, and weak, respectively [22]. The R2 value for operational performance was 0.525, whereas the R2 value for financial performance was 0.309 (see Fig. 1), indicating that the model had moderate explanatory power. The effect sizes f2 for relational capital and structural capital on financial performance denotes a small and important effect size, at correspondingly 0.057 and 0.083. Meanwhile, very small effect size of human capital (0.003), also on financial performance. A small effect of human capital and relational capital (0.103 and 0.062 and 0.175, respectively) on operational performance was found, in addition to moderate effect size of structural capital (0.175), also on operational performance. Furthermore, blindfolding was utilized in the model assessment for the endogenous variables, using the index of cross-validated redundancy (Q2), as indicated in [22] on the examination of a theoretical/structural model in terms

of predictive relevance. When interpreting the values of Q2, [23] noted that those greater than zero indicate the model's predictive usefulness. The structural model was shown to be sufficiently predictive for each endogenous construct in this investigation.

Table 5. Results of hypothesis testing

Structural path	β and T-values	Conclusion	f^2	R^2	Q^2
Human capital -> Financial performance	0.051 (0.629)	**Rejected**	**0.003**		
Human capital -> Operational performance	0.259 (2.283)	**Accepted**	**0.103**		
Relational capital -> Financial performance	0.265 (2.112)	**Accepted**	**0.057**		
Relational capital -> Operational performance	0.229 (2.427)	**Accepted**	**0.062**		
Structural capital -> Financial performance	0.318 (2.648)	**Accepted**	**0.083**	**0.309**	**0.197**
Structural capital - > Operational performance	0.383 (4.940)	**Accepted**	**0.175**	**0.525**	**0.291**

5   Discussion and Conclusion

This study analyzes the impact of various intellectual capital dimensions on the operational and financial performance of Jordanian banks and tested the hypotheses by analyzing data collected from banks in Jordan. This study gives insights into the significance of intellectual capital in countries such as Jordan. The results show that the components of intellectual capital under the three headings are positively related to operational performance, while financial performance is correlated to structural capital and relational capital, which in turn positively contribute to banks performance.

Our results emphasize the arguments concluded by prior studies that all dimensions of intellectual capital facilitate firm performance except the human capital, which has not been found correlated with the financial performance of the banks [2, 7]. Wang, Cai [3] supported the argument that shows no effect between human capital and financial performance, thus, this strengthens this study results.

Bank management must be concerned about intellectual capital development among employees through training and continuing education to raise the efficiency of employees and enhance intellectual capital by encouraging employees through financial and non-financial benefits such as health insurance. Based on this study, Jordanian banks should enhance intellectual capital by developing human, structural, and relational capitals in the banks. The development of intellectual capital elements will lead to positive effects on financial and operational performance, which enable the employees at the banks to be creative and develop their ability to create relationships with customers, ultimately

this will lead to enhance the bank's operational and financial performance. Therefore, the results of this study present valuable suggestions for managers, department heads, and first-level employees.

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Corporate Social Responsibility and Firm's Performance: Evidence from Bahrain

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Abstract. This study aims to examine the effect of corporate social responsibility on the firm's performance. Data collected for this study was based on secondary research which resulted in obtaining the data from the annual reports of Bahrain listed firms that are operating under the governance of Bahrain Bourse, also some other information was collected from the official website of the listed firms. The study concluded that there is an insignificant relationship between corporate social responsibility and firm performance by using the two measurements of the firm's performance, namely, return on assets and return on equity. The study recommended that future studies could re-investigate the relationship and evaluate the quality of CSR disclosures among listed organizations on Bahrain Bourse. Further, there is a need for issuing policies by regulators and companies that may be resulting in an increase in the quality of CSR that could enhance society and shareholder interest at the same time.

Keywords: Corporate social responsibility · Firm's performance · Return on assets · Return on equity · Bahrain

1 Introduction

A corporate social responsibility (CSR) reflects the capital market activities of a company trying to improve market popularity rather than improving market share and profit rate. CSR programs have long terms effect on organizational growth and its marketing environment. The corporate governance of a company is (responsible for its marketing and promotional activities such as CSR Bahrain government support companies adopting CSR for their promotional growth in this country. Due to the increase in demand for CSR disclosure through various stakeholders, corporate governance is providing rules and processes about the transparency in the credit market and disclosure of credit. Good governance is a major cause for CSR, if all firms engage in business activities with social benefits, there will be corporate social responsibility in society. CSR can be using a strategic tool by a firm which may impact not only the firm but also the economy and firm' performances, It can be said that corporate governance and corporate social responsibility are two different sides of one coin which are essential for each other (Alfraih and

Almut-awa 2017). CSR disclosure is effective for the credit market, at the same time it's significant for the investors and managers.

Corporate governance is responsible for observing the business activities of firms and can interfere in the decision-making process of a firm. A good corporate social responsibility disclosure will be beneficial for the environment and society (Habbash 2016). CSR is responsible for an organization's relationship with society overall and it's an emerging area for management activities, corporate social responsibility. It is basically an action for the well-being of society outside the pressure of law and regulations, corporation among firm's performance. Its stakeholder's interests are important for each firm, throughout human life history it's clear that individuals are facing a lot of environmental problems and a lot of environmental regulations are required for a sustainable environment (Jamali Safieddine et al. 2008).

Bahrain has an economy that is free. Bahrain has invested heavily in the banking and tourism industries since the end of the 20th Centre. Manama, the capital of the world, is the location of several large financial systems. The finance industry in Bahrain is very successful. In terms of the London Global Financial Centers Ranking, Bahrain was the world's fastest rising financial centre in 2008. The regional prosperity has supported the demand for oil through Bahrain's use of banking and financial services and does not forget Islamic banking. The main commodity in the Kingdom of Bahrain, which accounts for 60% of export earnings, 70% of national income and 11% of GDP, is oil production.

Also, the most exported commodity after oil is aluminum processing, under the leadership of building materials and financing. According to the economic freedom indicator in Bahrain, the Middle East and North Africa are the freest economies, the 13th and the freest economy in the world. World. This is an indicator, on the other hand, published by the Fraser Institute and the Kingdom of Bahrain in the list ranked 44th and drawn with 7 other countries. The World Bank also acknowledged that the economy's income is high. The capital of the stock market for companies located within Bahrain reached USD 21.176 million, which was 12 years ago by the World Bank, contributing to the development and sustainability of the economy. The Kingdom of Bahrain is an important and open region for creating a unique economy and through this, it is possible to create business opportunities as Bahrain's economy is fast growing. Within the Kingdom of Bahrain is centered in many large financial institutions and is also clearly known as the commercial capital of the Arabian Gulf, the Kingdom of Bahrain is familiar with many multinational companies that are radically associated with the business sector in the Arabian Gulf region.

The problem could be related to ensuring the profits that companies will make, or companies will be at financial risk while carrying out expenses to social responsibility. It has seen that there is some conflict of opinion among some through the relations between social responsibility and firm' performance, and there is some contradiction, and this is due to the environment in which the company is located and according to Manescu (2010) thesis which discovered several results of corporate social responsibility and the activities it contained. It was clear that CSR does not have a negative impact in general on the performance of companies.

An example of corporate social responsibility activities is what happens in the Batelco company in Bahrain. A 5 per cent of Batelco's profits are allocated to donations for charity purposes. To illustrate, this action by Batelco caused the company to have affected their reputation to be enhanced, which has increased their customers' number and loyalty. Subsequently, Batelco had increased its revenue rate and profits due to the CSR initiative.

In General, most companies apply social responsibility in order to affect profitability in the short or long term. Based on the financial reports of some companies, for example Zain and Telecom, their annual financial reports in the Bahrain Bourse 2019 indicate that it includes responsibility Social Affairs and expressed its keenness to present this responsibility to society. Previous studies have extensively investigated the relationship between CSR and firm performance in developing countries. However, the results of those studies are still inconsistence. Further, in the developing countries, CSR activities are not enough advanced (ElGammal et al. 2018). Regarding Arab Gulf countries, there is a lack of research efforts on exploring the impact of corporate social responsibility (CSR) on firms' performance in developed countries. Hence, there is a need to investigate the relationship between CSR and firm performance of the listed firms in the Bahrain Bourse.

The current study attempts to investigate the relationship between social responsibility and firm's performance. It shows that there is a significant negative relationship between corporate social responsibility and firm performance using the measurement of return on assets. The result of the study will help policymakers in encouraging the firms to build an effective strategy on corporate social responsibility. Also, it may help shareholders to realize the importance of CSR and how to use it to increase the firm's performance.

2   Literature Review

As opined by Juhmani (2016), corporate governance decides a specific structure of business suitable for carrying out business activities in the local and national markets. Managing stakeholders is an integral aspect of corporate governance and CSR programs will be more impact by getting support from stakeholders (Majeed Aziz and Saleem 2015) Instrumental, integrative and political theories are most useful in understanding the benefits of CSR in the corporate environment. This slide has discussed indicative points regarding corporate social responsibility with suitable relation to profitability and firm's growth. Companies target customers but indirectly, as companies contribute and seek to provide social responsibilities to the community, and through those social responsibilities, customers are attracted and looking towards the services and social responsibilities provided by companies, and through the services pro-vided by companies can attract customers more.

Theories of CSR explained that there will be the effect of CSR with respect to social and environmental exposure on organizations, economic-financial institutions, and society. Studies explained that sustainability can be improved by the maintenance of cooperative behavior by the government and society. CSR few theories introduced by different scholars, CSR first theory is stakeholder theory which is developed by Roberts (1992) who divided society into groups, he explained that each group of society will

affect the organization in dissimilar ways. but at the same time, all groups are sharing a common nature that is concerned about the organization's attitude about the environment (Gupta 2008).

This theory is mainly providing a broad view of the agency theory which explains that agents have a direct association with stakeholders, management, and agents. The study of Cho and Patten (2007) explained the legitimacy theory of CSR, this theory's impact on disclosure power on the described organization. The theory is concerned with the social agreement which must exist among corporations and society. This agreement may describe that there must a linkage with-in the value of organizations and the value of society, in the case of theory society's satisfaction is necessary if the firm fails to satisfy the society, then agreement among the firm and society will be ended. (Clarkson and Overell et al. 2011) described that irregularity in information can reduce the association among firms, society, and stakeholders. The corporative feature can be regulating the excellence of information exposure.

A study by Elshabasy (2018) investigated those organizations with a moral reputation not only responsible for the financial results but at the same time, they are responsible for environmental sustainability and social sustained growth. For the last thirty years, many scholars try to prove but still, this is an area of discussion, so it gains the attention of researchers. According to scholars, CSR has an impact on the organization's finance department: Environmental information disclosure (EID) is a necessary part of the social responsibility annual report. The basic objective of this study is to measure the Effect of Various corporative features about the environmental information disclosure on the selected firms in a developing country. It is the responsibility of firms that they know their responsibility about society and environmental suitability.

In corporate environmental argument, the major problem is environmental exposure, environmental information must be known by all stakeholders, suppliers of capital national and international, government and public. According to Elshabasy (2018), environmental information (EI) should be helpful for society and firms that they can recognize business attitudes about the environment.

A study by Majeed and Aziz et al. (2015) was exploring the relationship among corporate social responsibility disclosure. The study examined an annual report of different selected companies from the year 2007 to 2011; the study used a sample of 100 Pakistani companies from Karachi stock ex-change (KSE). The study used variables such as board size, an independent director of the company, foreign investors, women representatives, and the firm's size. The study found that CSR from all companies is impressive. The study found a positive and significant relation among the above explained all variables which this study was used.

3   Research Framework and Hypothesis

Critically describing Corporate Social Responsibility or CSR is a wide idea that can take numerous structures relying upon the organization and industry. Through CSR projects, magnanimity, and volunteer endeavours, organizations can profit society while boosting their brands. As mentioned by Habbash (2016), the CSR exercises can help produce a more grounded bond among workers and organizations that support assurance and help

the two representatives and businesses feel increasingly associated with their general surroundings. On the other hand, Ahmed and Hamdan (2015) commented that in order to become socially responsible, the business firm initially needs to be accountable to the shareholders as well as to itself.

It has been found that the business firms who adopt the concepts of CSR can have the programs in order to expand their profitability, which can be productive for society.

The advocates of CSR defines the concept of this responsibility which can cover a huge range of issues in terms of project closure, human rights, employee relationships, community relationship, corporate ethics as well as environment. As mentioned by Majeed. Aziz and Saleem (2015), the adaptation of CSR in a business firm in order to maximize the values of the stakeholder. On the alternative view of Juhmani (2014), corporate social responsibility can also be viewed as the examination of non-economic as well as political aspects, which is responsible for influencing the managerial behaviour of the leaders.

The evaluation of the CSR can be intended to extend for examining personal motivations such as the Chairman's preferences. As discussed by Habbash (2016), the CSR proponents are responsible for enlightening self-interest in the business in order to undertake the forms of CSR. On the contrary, Ahmed and Hamdan (2015) commented that the various forms of business that can be beneficial in securing the world can involve the enhancement in greater employee loyalty as well as reputations. This can be effective in identifying the current approaches that are being pursued by the business.

CSR can also be viewed as the tool for maximizing the shareholder's wealth irrespective of the ethical imperative or underlying morality. As suggested by Majeed. Aziz and Saleem (2015), the CSR of Bahrain can be evidence of the business benefits, which can be considered as social responsibility, which in turn helps the firm business to expand its sales volume.

As per the alternative view of Black et al. (2015), the effect of CSR can also be dependent upon the working environment and workforce as well as the trust of the firm business as a whole. Hence, it can be said that the principal object of CSR in terms of the business firm can be considered for building sustainable growth in a responsible approach. Corporate social responsibility in a system can be regarded as the set of processes and frameworks which can be utilized in order to direct the business firms in the corporate sectors.

Critically demonstrating theories related to corporate social responsibility. The theorization on the CSR perspective can be explored in terms of explaining utilization of various distinctive levels as well as analyzing the range of stakeholders related to the corporate social responsibility of the business and firms. As per the Instrumental Theories, the technologies are not subjected to change in the organizational practice of a business and firm. This theory generally emphasizes an individual's utilization of the technology instead of the technology itself. As mentioned by Hamidu et al. (2015), the instrumental theory can be regarded as a strategic tool that is responsible for wealth creation. On the contrary, Frynas and Yamahaki (2016) argued that this theory could be concerned with profits, which can include the interests of the stakeholders related to the business. The Political Theory can be appointed to the application of CSR in business and firm. Which can focus on the interaction as well as connections between the society and the business.

As mentioned by Scherer (2018) this theory can be beneficial in inheriting the power and the responsibility of concerned businesses and firms.

On the other hand, Frynas and Yamahaki (2016) contradicted that CSR speculations and approaches centre around communications and associations between business and society as well as on the power and position of the business. Therefore, it can be said that both political contemplations and political investigation for the CSR banter. In spite of the fact that there is an assortment of approaches, it can be dependent upon the two factors of constitutionalism of corporate as well as citizenship as per the Integrative Theory, it can be dependent upon the social demands, which are extensively influential for growth and continuity. As mentioned by Frynas and Yamahaki (2016), social demands can indicate the social interactions with the stakeholders.

Figure 1 shows the conceptual framework of the current study which includes the dependent and independent variable where CSR is considered as an independent variable and firm's performance is the dependent variable. The study uses two measurements of firm's performance, return on assets (ROA) and return on equity (ROE).
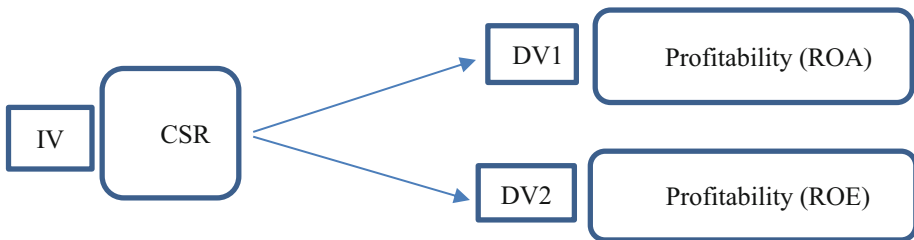
Fig. 1. Conceptual framework of the study

The hypotheses related to this study are fundamentally related to social responsibilities. It sensed that these responsibilities could affect the profitability of companies where companies can make profits or loss and increase the chance volume of their sales in the long run, so the hypothesis of generating the profit relates to contributions made to the community and linked to them indirectly. There are multiple perspectives that add to other studies. From this perspective, the authors believe that the argument that shows that corporate social responsibility has a positive effect on profitability is the most frequent one in multiple studies which have been reviewed because profitability will be achieved but is likely to be in the long term.

H_1: There is a significant relationship between corporate social responsibility and firm's performance.

4   Research Methodology

This study is a quantitative study. The source of data collected for this study was based on secondary research which resulted in obtaining the data from the annual reports of Bahrain firms that are operating under the governance of Bahrain Bourse. Besides that, some information was collected from the firm's official website. The data was collected

from the annual report of listed firms in Bahrain Bourse for two years, 2018 and 2019. Sample of the study is 30 firms for two year (60 firm observations). The purpose is to investigate the effect of corporate social responsibility on the firm's performance. Hence, the dependent variable is the firm's performance and the researchers used two measurements for this variable, namely, Return on Assets and Return on Equity. The independent variable used in the current study is CSR. The CSR level has a maximum score to be reached by the firms which are equal to 42 items and every firm score was calculated by the ratio of that maximum score. The study also used several control variables that my affect the relationship and need to include in the regression. The following Models were used to run the regression to explore the relationship between all variable used in the study (Table 1).

$$ROA = \beta_0 + \beta_1 CSR + \beta_2 TE + \beta_3 TIBT + \beta_4 TD + \beta_5 TA + \beta_6 CF + \beta_7 Big4 + \beta_8 FA$$
$$+ \beta_9 Indus + \beta_{10} Year + \varepsilon. \tag{Model 1}$$

$$ROA = \beta_0 + \beta_1 CSR + \beta_2 TE + \beta_3 TIBT + \beta_4 TD + \beta_5 TA + \beta_6 CF + \beta_7 Big4 + \beta_8 FA$$
$$+ \beta_9 Indus + \beta_{10} Year + \varepsilon. \tag{Model 2}$$

Table 1. Summary of variables' measurements

Variables	Acronym	Measurement
Return on assets	ROA	Net income/total assets
Return on equity	ROE	Net income/total equity
Corporate social responsibility	CSR	The level of CSR disclosure is calculated by the ratio of actual scores to the maximum obtainable (42 items which cover four important categories of the CSR framework) by that firm
Total equity	TE	The lagged total equity
Total income before tax	TIBT	The lagged the lagged Total Income Before Tax
Total debts	TD	The lagged the lagged Total Debts
Total assets	TA	The lagged total assets
Cash flow from operation	CF	"1" if cash flow from operations is negative, and "0", otherwise
Audit firm	Big4	"1" if firms were audited by Big4 firms, and "0", otherwise
Firm age	FA	Age of firms

(*continued*)

Table 1. (*continued*)

Variables	Acronym	Measurement
Industry	Indus	"1" for observation in the manufacturing industry, and "0", otherwise
Year	Year	"1" for observation in the 2019, and "0", for observation in the 2018

5 Findings and Discussion

Table 2 shows that the mean value of the firm's performance using the ratio of return on assets is 4.5% while the mean value of other measurement of firm's performance, namely, return on equity is 10.5%. Further, the mean value of ratio of actual scores of CSR is 20.2%. One of the most important results is the existence of social responsibilities pro-vided by all companies listed on the Bahrain Stock Exchange that were selected and their financial reports analyzed, and this is a clear indication of the importance of social responsibility and its role in two important things, the first is to gain trust and gain a good reputation, which has a role in The impact on the profitability of the company, where customer loyalty requires the good reputation of the brand, and thus the investor or customer feels that he is not only paying money to acquire a product for the quality or price, but also for the good reputation of the brand or company, so we see that all companies analyzed Their data through financial reports presents social responsibility activities at various and different levels. The results of descriptive analyzes can show the importance of practicing these activities related to social responsibility for two main goals, contributing to community service, and influencing the company's profitability

Table 2. Descriptive statistics of the continuous variables

variable	mean	min	max	skewness	kurtosis
ROA	0.045	0.004	0.205	1.887	7.956
ROE	0.105	0.024	0.493	2.782	14.043
CSR	0.202	0.095	0.333	0.136	1.992
FA	39.983	1.000	136.000	2.200	11.120
TA	14.352	8.069	18.976	-0.304	2.227
TD	13.471	7.887	17.669	-0.355	2.358
TIBT	9.108	1.645	16.231	0.011	1.739
TE	11.547	4.078	18.880	-0.043	1.746

Dummy Variables

Variable	1		0	
	Freq.	**Percent**	**Freq.**	**Percent**
Big4	54	90	6	10%
CF	14	23.33	46	76.67
Indus	8	13.33	52	86.67

indirectly by influencing customers by providing activities and social responsibility to members of the community and the community environment in a way. other mean value related to control variable also shown in the table.

The study conducted several of Diagnostic tests. Regarding the normality test, results show that individual variables are normally distributed. The skewness for all variables is within the threshold of ±3. The correlation matrix test shows that there are no collinearity or multicollinearity problems in the dataset (Table provided on request). Regarding the heteroscedasticity, the Breusch-Pagan/Cook-Weisberg test provides evidence for nonexistence of heteroscedasticity.

To investigate the influence of CSR on firms' performance, Ordinary Least Square (OLS) regression was applied. OLS regression was used because the period of the data in the study is only two years and the sample is low, 60 firms' observations. The two models presented in Table 3 and 4 are fit (at the level of 1%). All models have a high R^2 which indicates that the variables are strongly related to and significantly affect the firm's performance. Furthermore, R^2 suggests that the variables comprehensively explain the issue of the firm's performance.

Table 3 and 4 show that there is no significant relationship between corporate social responsibility and the firm's performance neither for the measurement of re-turn on assets nor the measurement of return on equity. The results are not in line with the hypothesis proposed by the current study. Further, it is also not in line with some of the previous studies that found a significant relationship between corporate social responsibility and the firm's performance. However, it is in line with some other studies that fail to get a significant relationship such as a study of Akinleye and Adedayo (2017) which concluded that there is an insignificant relationship between corporate social responsibility and profitability of multinational companies and that there is no substantial evidence of causality between corporate social responsibility and profitability among multinational companies.

Table 3. Regression of model 1 using ordinary least squares (OLS)

Variables	Coef.	t	P > t
ROA	−0.106402	−0.56	0.5800
Big4	0.1110108	3.89	0.0000***
CF	−0.0221979	−1.22	0.2260
CA	0.0009338	2.98	0.0040***
TA	0.0069863	0.70	0.4900
TD	−0.0056198	−0.55	0.5850
TIBT	−0.0094171	−0.84	0.4030
TE	0.0087865	0.83	0.4090
Industry	−0.0827615	−3.76	0.0000***

(continued)

Table 3. (*continued*)

Variables	Coef.	t	P > t
Year19	0.0111234	0.83	0.4100
_cons	0.0400302	0.70	0.4890
F-value			4.53
Sig.			0.0002
R-squared			0.4800
Observations			60.0000

Table 4. Regression of model 2 using ordinary least squares (OLS)

Variables	Coef.	t	P > t
ROE	0.0070009	0.04	0.9660
Big4	0.1107026	3.51	0.0010***
CF	−0.022649	−1.20	0.2370
CA	0.000923	2.92	0.0050***
TA	0.0072898	0.69	0.4960
TD	−0.0055312	−0.51	0.6140
TIBT	−0.0110166	−0.61	0.5460
TE	0.0100616	0.57	0.5750
Industry	−0.0836742	−3.73	0.0000***
Year19	0.0111149	0.83	0.4130
_cons	0.0296958	0.35	0.7300
F-value			4.47
Sig.			0.0002
R-squared			47.70%
Observations			60

6   Conclusion of the Study

The Carrolls CSR pyramid is one of the theories that was widely used in international firms. This theory argues that organizations should set CSR goals that they have to achieve. According to this framework, profitability is the most important factor when applying CSR initiatives. Also, the theory suggests that every organization should link their business operation with their social responsibilities. Hence, this study aims to investigate the effect of corporate social responsibility on the firm's performance of listed firms in Bahrain Bourse for the year of 2018 and 2019. From the regression, the study did not find a significant relationship between corporate social responsibility on

the firm's performance, neither by using the measurement of return on assets nor by sing the measurement of return on equity.

These findings have important implications for CSR. It could help the policymaker in Bahrain to evaluate the role played by companies in society. Therefore, this study draws the attention of policymakers, shareholders, managers, investors, and research in Bahrain to further investigate the issue explored in this study, to provide a definite conclusion that may help them. Research on the extent to which corporate social responsibility is associated with the firm's performance should be of interest to regulators and practitioners.

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A Study on the Effect of Product Packaging Elements on Consumer Purchasing Decision for Frozen Foodstuff Products During Corona Pandemic: A Case of Jordan

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Abstract. Corona Pandemics results in a radical changes in the lifestyle and buying pattern of consumers around the world which adversely affected the global economy. This paper aims o to explore the effect of package elements on consumer's purchasing decision during Corona Pandemic in Jordan, which helps the producers and marketers of frozen foodstuff to design and develop packages that motivate consumers to complete the purchase process particularly during Corona Pandemic. The study dealt with four independent variables (package color, package shape, package size and package logo) and one dependent variable (consumer purchasing decision. And three moderator variables for demographic factors (age, education level and income level). A questionnaire was designed based on previous studies, and 440 questionnaires were electronically distributed, which were suitable for analysis. The data were analyzed using the SPSS to analyze the data. The results showed that there was a statistically significant effect of the package elements on the consumer's purchasing decision separately during Corona Pandemic in Jordan. The study concludes that shape has a very important role in consumer's point of view by about (38.8%), moreover the income level also has an important effect on consumer's purchasing decision. The study recommends companies that produces frozen foods to design attractive packaging and to develop them continuously because of its importance to consumers during the buying process.

Keywords: Product packaging · Color · Size · Logo · Shape · Frozen foodstuff · Purchasing decision · Corona pandemic · Jordan

1 Introduction

Consumer purchasing decision has dramatically changed in emerging economies due to global engagement during Corona Pandemic, the standard of information and communication technology, urbanization and education, lifestyle changes and knowledge of health care, the role of food as an important health factor has become well-known and has

resulted in a change in consumer dietaries, consequently, wellness and promotion activities, which often offer healthy alternatives to these goods, have grown in significance for the purchasing decisions of customers [23, 24, 30, 41].

Companies give greater importance to packaging as a strategic tool to differentiate their products from other competitors in frozen food markets which enables them to gain competitive advantage during Corona Pandemic, where packaging is the final communication tool that companies use to attract consumers towards their products. Packaging gives an important weight for producers of frozen food to be considered when designing their marketing strategies. In addition, considering the importance of product marketing, packaging created interest from a management perspective among scholars which has led to research on frozen food packaging to know its impact [13, 15, 18, 38, 39, 42].

One of the important strategies that have become common and important in distinguishing the company from other companies and in attracting consumers towards their products is the product package, and the product package gives the company a competitive advantage, and this is one of the most important reasons why companies with similar products tend to distinguish their frozen foodstuff by the package, the product package has elements such as color, size, shape, logo, and these elements are under control by the company and they help to adapt the changes in the business environment specigicalluy during Corona Pandemic [13, 21, 36, 47, 48].

The package is considered one of the most important factors that work to draw the buyer's attention, as the package is the first thing that the consumer sees, and the package distinguishes the product from other products and gives it formal features as it reflects the value, quality and content of the product, the product package has a role in the consumer's perception and understanding of the product and has a role in determining the consumer's purchasing decision [40, 43, 47, 48].

The Jordanian consumer prefers to buy frozen products instead of fresh because of the differences in the prices, expiry date and speed in getting frozen foods, and there are also many local products and many alternatives to frozen foods that compete in price and quality, The Jordanian citizen consumes about 2,500 tons of frozen products such as meat and poultry per month, and Jordan imports about 55% of the frozen food [56, 59].

This study aims to gain understanding of consumer preferences towards packaging elements of frozen food (color, size, shape, logo of the package) during Corona Pandemic and highlight the effect e of these element on consumer purchasing decision.

2   Research Problem and Questions

The problem of this study lies in the answers to the questions that appear in the mind of the researchers based on his observation, such as what is the Effect of product package on consumers purchasing decision for frozen food stuff product during Corona Pandemic.

There are many frozen foods that are very similar to each other, which increases the challenge for companies to develop new marketing strategies to differentiate their products in order to compete with each other. One of these strategies is the frozen foodstuff package.

Based on pilot study on some consumers of frozen foodstuff in Amman city, consumers are still unaware of the importance of the product package and its role that arises

from a lack of knowledge of the properties of packaging elements in the target market, which necessitates that the producers deal with these changes by finding solutions by resorting to the elements of the package. It is a comfortable item that helps maintain and expand market share. If possible, bearing in mind that consumers are the target and cornerstone of which these companies depend in developing their product package in order to maintain their loyalty. Therefore, companies should consider packaging as a tool to directly reach the consumer through improving the design of the packaging that may reflect a good image of the product and the company, and its ability to convince the consumer of the quality and price of the product. An urgent need to find effective marketing strategies to maintain its position among the local market competitors. In its struggle to survive in competition with the products available in the market The Jordanian market, which operates impurely competitive environment, due to the similarity of frozen foods presented to consumers in terms of convergence in color, shape, size and logo, which increases the burden of identifying producers during Corona Pandemic.

Based on the above discussion the study tries to answer the following main questions:

1. Is there any effect of product package (color/size/logo/shape) on consumers purchasing decision for frozen food stuff product during Corona Pandemic?
2. Is there any role Corona Pandemic as a moderating factor on the relationship between product packaging and consumer purchasing decision to create difference in purchasing decision?

From the main questions several sub questions are supposed:

1. Is there any effect of product package color and consumer purchasing for frozen food stuff product during Corona Pandemic?
2. Is there any effect of product package size and consumer purchasing for frozen food stuff product during Corona Pandemic?
3. Is there any effect of product package logo on consumer purchasing for frozen food stuff product during Corona Pandemic?
4. Is there any effect of product package shape and consumer purchasing for frozen food stuff product during Corona Pandemic?
5. Is there any role Corona Pandemic as a moderator variables between packaging and consumer purchasing for frozen food stuff during Corona Pandemic?

3   Research Model

The researcher suggests a structure used in current research figure based on literature review and previous studies [5, 7–9, 13, 15, 22, 34, 35, 37, 44, 45, 50, 53] (Fig. 1).
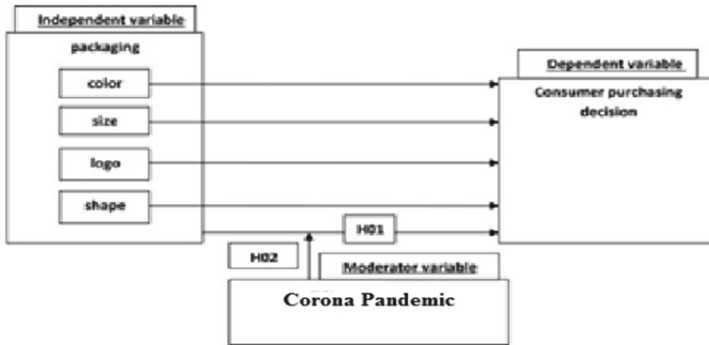
Fig. 1. Research model

4 Research Hypothesis

The study has the following main hypotheses based on the research problems and the objectives:

H.01: There is no statistically significant effect at (a ≤ 0.05) of product packaging elements (color, size, logo, shape) on consumer purchasing decision for frozen foodstuff.
H.02: There is no statistically significant role at (a ≤ 0.05) of Corona Pandemic as a moderating variable on the relationship between packaging elements and consumer purchasing decision for frozen foodstuff:

5 Literature Review

The developments that the world is keeping pace with in terms of technological, economical, cultural and political development is one of the most important reasons for the transformation and development of consumer needs and desires. These rapid developments are the reasons for organizations at all levels to improve the color, size, shape and slogan of their products to keep rapid with and meet the needs in the market that are in intense competition with a wide range of other products for consumers. Because of this competition, it is imperative for enterprises to devise modern and effective marketing strategies in order to obtain a greater market share and satisfy the needs and desires of consumers. Nowadays, consumers are provided with marketing incentives in order to attract them to different companies. One of the most important incentives that can attract consumers while purchasing the right goods is packaging [13].

Experts have insisted that packaging is the fifth element of the marketing mix, which are product, price, promotion and place (The main purpose of the package is to protect the product in the event that it is in the stage of storage, delivery, transportation, or display, but companies use the packaging to use it for promotion, as packaging is used as a marketing tool to influence the consumer's purchasing decision [12] and [7].

Good packaging works to identify and distinguish the company's products from other companies by consumers. Organizations must understand how packaging affects

consumers in the buying process, and they must also understand the factors that influence the purchasing decision and focus on the role of packaging elements that are immediately noticed once the consumer looks at the product (color, shape, size, logo, design, materials, images, font style and information) towards the buying decision process for consumers during an appropriate commodity purchase decision. Market research helps companies create the "right" package for a product, as well as choose the right packaging items that may entice consumers to buy a specific product [17, 19, 30].

5.1 Importance of Packaging

Packaging is very important and marketers should pay close attention to what it reflects, especially if the product is new in the market where it may cause success or failure.The importance of the package is the following: [4, 12, 47].

1. Protection of the product from damage: as the package not only protects the product during transportation and delivery, but rather protects it and prevents it from being damaged during display on the store shelves.
2. The convenience of the producers in communicating the commodity information to the consumers correctly and effectively. Knowing consumer preferences is important so that manufacturers have a general idea of how consumers will react and respond to their packages, and it is also extremely important that comfortable goods arrive from the shipping point to the end consumer safely without any harm.
3. As far as retailers and wholesalers are concerned, packaging is also very important when it comes to storing convenience goods in stores and on shelves, retailers do not want to receive damaged goods, and they do not want convenience goods that do not have a package to protect the product from inside…
4. The importance of packaging frozen food to consumers is that their purchasing intentions and behaviors are based on their satisfaction with the first impression of the appearance of the product. The suitable package reflects some characteristics of the product such as price and quality.

Consumers compare the packaging designs with each other. (Therefore, the importance to invest in good package designs arises to product-focused companies) [47].

5.2 Elements of Packaging

Based on the literature that has been reviewed and previous studies, there are categories of packages in which items are classified, where frozen foods are classified according to color, shape, size or logo [19, 36, 49].

5.2.1 Color

Color is one of the most important factors that help the consumer in making a purchase decision, as color has a psychological effect on the consumer, which works to attract attention.The color is used to psychologically explain the meaning of the product, for

example we find blue is the color of frozen seafood packaging, and in other products the blue color is used by water companies such as nestle. Green is used in frozen products for frozen vegetables and fruits such as al walema products. Yellow is also sometimes used in frozen products over fast food such as Nabel and Americana products. [28, 29, 40].

The colors can also be linked according to consumer expectations, usually dark colors are used for higher-quality products, and dark-colored products are usually accompanied by an elegant design [4], especially the black color, which is used in some frozen products such as meat and quality seafood. Light Color is the most obvious feature of the product and influences the buyer's acceptance or rejection of the product.

The consistency of the color with the cover makes it easier for the consumer to identify the product and clarifies its meaning, since the color of the product is the first thing that enters the consumer's mind [23].

Since color is very important for designing appropriate commodity packaging, it is interesting to give more details and discussion relating to colors. The meaning of colors to consumers has been studied many times in the marketing literature. Most commonly used in research is the division of warm and cool colors. Warm colors, such as red, yellow, and orange, send an energetic message that is considered exciting. Cool colors are considered, such as blue and green [51].

The different colors also symbolize different meanings to the consumers. For example, yellow is the main color for tea tins like Lipton, while brown is the color for chocolate and white is the color for bottles of detergents and detergents According to [4] perceptions of colors differ across cultures and most religions are believed to have their own sacred colors.

Marketing management can select colors that meet consumer expectations. The color palette can be associated with a specific brand or company name. When creating new packages or advertisement, marketers rely on visuals and use them in appropriate ways to attract consumers [27] and [28].

The design for the upper-class design is associated with cool, dark colors, especially black, not yellow, orange, or red. On the other hand, comfortable products are associated with light colors that are predominantly white and states that color is the first feature that consumers notice when shopping [19].

As for the color of the package for frozen foods, you must choose the color that reflects the product, for example the blue color is the color on the packages of frozen seafood, and in the frozen foods, the brown or black color in the package is an indication of the frozen meat and the yellow color in the package for the frozen food is for instant meals such as frozen potatoes and fried chicken.

5.2.2 Size and Shape

Package size is one of the visible elements when making a purchase decision, as the package size is related to the feasibility of use and the amount of product available inside the package, many products must be available in different sizes to sell in order to be flexible for consumers to use the product, for example family consumption differs from individual consumption [24] and [25].

The size of the packages also helps somewhat in predicting the price since products with large or family sizes tend to be more expensive than smaller sizes due to the presence of more product in the package, but economically it is saver for consumers to buy a large quantities sizes [25].

Because the form of packaging has a positive importance and ability to know the quality of the product, previous studies related to product packaging indicated that the shape is one of the basic factors for the success of the product. The shape of the product can influence the consumer's purchasing decision to decide to by the product [12, 19, 24].

Research on the packaging of frozen goods indicates that the packaging shape is an important way to differentiate a brand from the other products, because packaging design can influence consumers' purchasing decisions. This has led many companies to focus on product and package form of convenience items, and small changes in packaging design can have a major impact on sales and profits [27]. [7] argue that many products should be sold in different package sizes for flexibility, given market demand which depends on different consumption levels [28]. Box lengths, forms, and size also have a negative effect on market judgment and decisions. Consumers tend to be making frequency decisions by simplifying visual heuristics. In general, even though they buy these packages regularly and have a real volume, they consider length packages as greater variable to decide to purchase. This means that the inability to validate the package size after consumption may not cause customers to long term revise their decisions on amount, especially where there is not very significant difference). Consumers with different needs often cater to different sizes. For example, the lower prices of such low intervention products as generic products have become viable by saving costs arising from reduced packaging and advertising. Frozen foods are usually packed in larger quantities, which means that customers are approached actively looking for good deals. Customers argue that the low price of frozen foods provides great value for money in the right package size. Moreover, this means that the effect of packaging is greater while the consistency of the substance is difficult to ascertain, as is the case with frozen foods [4, 21, 22, 30].

5.2.3 Logo

A logo is a linear representation of the brand or company's name The logo is the entry point for the product or the brand into the market. The logo is strongly associated with the product, for example the first thing that comes to the mind of the consumer when he or she hears Coca-Cola is to write the name of the product in its own way. As already described, customers prefer to apply emotions to particular brands. This is also true in brand logos. Powerful logo can help consumers quickly remember memories and perceptions in sight. If those experiences and emotions contribute favorably to the company logo, then this would hopefully allow brands to establish long-term relationship with customers. companies can also customize their own packaging labels to include company's logo. The logo must be distinct and not imitated in order to be able to create a special image in the mind of the consumer, so that the logo carries the basic idea of the product in a clear and simple way, the nature of the company's business, location, branches and history. The location, branches and history can contribute to defining a specific logo for the product. Some companies tend to design logos with a double meaning, which means

that the product logo carries more than one meaning, for example, the logo may carry the meaning of the product or the characteristics of the product and also a meaning of the company's history or location, an example of this in frozen foods of The Americana products logo carries the meaning of the main location or country of production of frozen products, which is the United States of America, and Alaska ice cream products carry the meaning of the country of origin and the nature of the snowy weather in that region [49, 51, 57, 59].

5.3   Consumer Behavior Towards Frozen Food

Japan adopted in 1962 the legal description and idea of frozen food. In 1991, the Ministry of Health, Work and Wealth formulated food labeling requirements in the Nutrition Improvement Legislation for defined health uses, which grouped such food into four groups (food for particular nutritional uses, diet for specific health reasons, foods for which nutrition functions are claimed and general foods). "Food for health purposes" means food taken for everyday use for specific health purposes and which improves body function and has particular health implications (National Institutes of Health, 2019). Frozen foods must pass checks of scientific data to determine the protection and health impact of human beings, prove toxic, and must have products that meet a central competent authority's frozen food specification (World Health Organization, 2021). Frozen food may be considered a general herbal food with an effect on the prevention of diseases and maintenance of health. It functions as a functionally- functional or dietary supplement. Frozen food is described in this study as food that is suitable for consumers with particular health needs, is capable of regulating the function of the body and is not used to treat diseases.Consumer buying behavior towards frozen foods is witnessing a great turnout, for example the consumer buys frozen meat due to the high prices of fresh meat, where it was also found that the consumer does not find a big difference in the taste or quality of frozen foods from fresh foods, consumers tend to buy frozen foods for areas on considered. Important, and that the shelf life of frozen foods is longer than fresh foods (Rashid, 2020). The price also plays an important role as frozen foods have a lower price than fresh foods [56–58].

There are local products in Jordan for frozen food that are available in a varied, permanent, and easily accessible form, at reasonable prices for everyone. There are also many local companies competing for frozen food in various types of frozen food, including meat, fish, vegetables and fruits. An example of these companies is Nabil, Al-Wadi and Postman [57].

6   Methodology

This research used the descriptive analytical methodology which studies the phenomenon as it is, describes it accurately and clarifies its characteristics through collecting, analyzing, and explaining data. The usage of this methodology aims to explore the Effect of Demographic Variables on the Relationship Between Product Packaging and Consumer Purchasing Decision. The descriptive analytical methodology characteristic is not only collecting and organizing data that is related to a specific phenomenon, but also aims

to reach conclusions that contribute to understanding reality throughout analyzing and explaining the studied phenomenon. Furthermore, reaches meaningful generalizations that enable the study to enrich the knowledge about that phenomenon, and contributes in developing the fact of an intentional phenomenon, standing on the most important advantages and disadvantages, trying to improve the disadvantages and developing the advantages that are related to the phenomenon under study [26].

The researcher designed one questionnaire for Consumers of Frozen Foodstuff Products in Amman. The survey was designed to collect and analyze the data to get the information needed in this study for empirical purposes.One statistical technique was adopted to analyze the data. The Statistical Package for the Social Sciences (SPSS) version 24 was used to analyze the preliminary data and provide descriptive analysis about collecting data from the sample, such as means, standard deviations, and frequencies, also analyze the hypotheses. Reliability is investigated using both the internal consistency measures of Cronbach's alpha. Validity also assessed.

7   Population and Sample Size

The unit of analysis of the survey in this study is the Consumers of Frozen Foodstuff Products in Amman., who consumes Frozen Foodstuff Products. One of the approaches is Sekaran table. Based on [32] and [33] and regarding the population size, the representative's sample should not be less than (386) participants, for more accuracy and dodging mistakes, the researcher distributed (500) questionnaires on the consumers by using online (Google form). The researcher depended on convenience non probability samples for distributing the questionnaires. About (60) Questionnaires were unreturned, which represents about (12%) of all questionnaires. The questionnaires were valid for actual analysis, which composited (440) respondents sample size.

8   Research Instrument Reliability

This study is used the five- point Likert scale to the questionnaire, which starts from range one strongly agrees until range five strongly disagree.Cronbach's alpha is designed as a measure of reliability, that is, do all items within the instrument measure the same thing? The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflects a higher degree of reliability. The lower limit for Cronbach's Alpha value is (0.70) although according to [22]. The Cronbach's coefficient alpha was calculated for each field of the questionnaire.

Table 1 shows the reliability of the independent and dependent variables (Cronbach's Alpha).

Table 1. Reliability of the independent and dependent variables (Cronbach's Alpha)

Number	Variables	Statements	Cronbach's alpha
1	Color of the package	7	0.843
2	Size of the package	9	0.712
3	Shape of the package	10	0.875
4	Logo of the package	4	0.707
5	Consumer Purchasing Decision	5	0.716
	Total	35	0.908

9 Results and Discussion

H01: There is no statistically significant relationship at (a $\leq$ 0.05) between product packaging elements (Color of the package, Size of the package, Shape of the package, and Logo of the package) and consumer purchasing decision. Multiple linear regression was used to test the first main hypothesis at the significance level ($\alpha \leq$ 0.05). Table 2 shows the results.

Table 2. Results of multiple regressions of the main hypothesis

Dependent variable	R	R2	F	DF	SIG	Independent variable	B	T	Sig
Consumer purchasing decision	0.679	0.462	93.247	4	0.000	Color of the package	0.277	5.843	0.00
				435		Size of the package	0.016	0.247	0.805
						Shape of the package	0.393	5.892	0.000
				439		Logo of the package	0.181	3.995	0.000

Table 2 shows the study dependent variable (Consumer purchasing decision) and the set of the independent variables factor (Color of the package, Size of the package, Shape of the package, and Logo of the package),are significant because F significant was(0.000)which is less than (0.05), and the calculated F value is (93.247), which is more than F value table (2.22). Therefore, we rejected the null hypothesis and accepted the alternative hypothesis, which states that: There is statistically significant relationship at (a $\leq$ 0.05) between product packaging elements (Color of the package, Size of the package, Shape of the package, and Logo of the package) and consumer purchasing decision. The relationship between the dependent and independent variables is strong and positive. It is more than (0.5) (Cohen, 1988), R = 0.679. Also, the R^2 = 0.462,

which means that the independent variables contribute to the dependent variable in a percentage of 46.2%. Since the values of the calculated t values of the variables (Color of the package 5.843, Shape of the package 5.892, and Logo of the package 3.995), are more than the t value table (1.986). Also, the t significant is less than (0.05). It means that there is a statistically significant relationship for Color of the package, Shape of the package, and Logo of the package on the dependent variable(consumer purchasing decision). But the other independent variables calculated t value is (Size of the package 0.247). This value is less than the t table value (1.986), which means that there is no statistically significant relationship for Size of the package on the dependent variable (consumer purchasing decision).

Table 3. Frequency and percentage for the participants according to "Does Corona Pandemic Affect your Purchasing Decision?" variable (n = 384)

Category	Frequency	Percentage
Yes	372	96.37
No	14	3.63
Total	**386**	**100.0**

Table 3 shows that the percentage for "consumers affected by Corona Pandemic on consumer purchasing decision" with 97.37 for (yes), but the lowest percentage was (3.63%) for (no).

H02.1: There is no statistically significant role at (a ≤ 0.05) of Corona Pandemic as a moderating variable on the relationship between packaging elements and consumer purchasing decision. One -Way ANOVA analysis was used to test first- second main hypothesis. Table 3 shows the results.

Table 4. One way ANOVA result

Variables		Sum of square	DF	F	Sig
Packaging product	Between group	4.255	2	9.729	0.000
	Within group	95.567	384		
	Total	99.822	386		
Consumer purchasing decision	Between group	2.116	2	6.94	0.011
	Within group	171.606	384		
	Total	173.722	386		

Table 4 shows that, calculated "F" value for (Packaging product 9.729) are more than "F" tabled value (3.00), and the significant value of F are less than (0.05). while calculated "F" value for (Consumer purchasing decision(6.95) is more than "F" tabled value (3.00). Also the significant value of F is less than (0.05).Based on the result showed in Table 4,

the Corona Pandemic has statistically significant role at ($a \leq 0.05$) on the relationship between packaging and consumer purchasing decision, on other hand, it have effect on consumer purchasing decision. The study used (LSD) (least significant difference) test, it used in the context of the analysis of variance, when the F-ratio suggests rejection of the null hypothesis H0, that is, when the difference between the population means is significant.

10   Recommendations

Based on the result of the study the following recommendations are proposed:

1. Companies must create color harmony for the packages of frozen food stuff, so that they indicate the identity of the frozen food stuff quality and attracting the consumers.
2. The package shape must fit frozen food stuff size and indicate the quality too.
3. The design of the package shape must reflect the identity of the frozen food stuff and be designed creatively.
4. Companies must be keen on designing creative logo with serious and attractive ideas.
5. Marketers of frozen foodstuff should increase the link between the logo and the frozen foodstuff, the logo should have a great indication of quality of the frozen foodstuff and attract consumers.

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The Moderating Effect of the Covid 19 on Credit Risk of Islamic and Conventional Bank in Emerging Markets: Evidence from Palestine

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Abstract. Credit risk is one of the largest and most significant risk exposures facing banks. This study aims to empirically measure the impact of credit risk on the profitability of Islamic banks and conventional banks operating in Palestine. The study also aims to show if there is a significant difference in the impact of credit risk on the profitability of Islamic and conventional banks. The interactive effect of the Covid 19 pandemic with the credit risk factors is studied to prove whether the pandemic affects the profitability of both types of banks. The study analyzed the data of 13 banks (11 conventional and two Islamic banks). The sample period extends from 2011 to 2020. Banks' profitability is measured using return on assets (ROA) and return on equity (ROE). Credit risk variables are measured using the non-performing loan ratio, loan provision to gross loans, and capital adequacy ratio. In addition, a set of macroeconomic and micro-control variables are investigated. Using panel regression analysis, the study finds that credit risk significantly impacts Islamic and conventional banks' profitability. However, this effect is sensitive to the measure of profitability. While credit risk significantly impacts the ROA, it has no significant impact on the ROE. In addition, the study finds that the impact of credit risk on the profitability of Islamic banks is different from that of conventional banks. In addition, the credit risk that rises during the Covid 19 pandemic has an insignificant impact on the profitability of both types of banks.

Keywords: Covid 19 · Credit risk · Profitability · Islamic banks · Conventional banks · Palestine · Panel regression

1 Introduction

The banking sector plays an essential role in economic growth around the world. In addition, banking institutions play an essential role in the financial systems' maturity transformation and asset transformation processes. Therefore, banks are exposed to a vast array of risks that distinguish them from other organizations. One of the most prominent and most considerable risks banks face is credit risk. Credit risk is the potential that a bank borrower or counterparty will fail to meet its obligations by agreed terms. [1] mention that credit risk is an essential factor in determining the banks' profitability as the

majority of credit revenues are created by interest. Furthermore, the Covid 19 pandemic, which started in the year 2020, had a disruptive effect on the world economies and increased the vulnerability of the global financial system.

Furthermore, due to the long shutdown period in Palestine, the notional amount of the defaulted loans has increased. Therefore, the quality of the loan portfolios has declined, which led banks to tighten credits in anticipation of high defaults.

Due to the importance of managing this risk, many studies have studied the impact of credit risk on banks' profitability [1–7]). The majority of the studies find a significant negative relationship between credit risk and the banks' [1–7] Concerning Palestine, [8] analyzes the impact of credit risk on five banks (four CBs and one IB) operating in Palestine from 2010 to 2015. The results indicate a positive but insignificant relationship between credit risk and profitability (ROA). He claims that this result is due to the realization of banks' credit risk management and the subsequent increase in interest rates to compensate for the increased perceived risk. However, the study does not measure the differential impact of bank type on modifying the relationship between credit risk and profitability.

The current study aims at providing recent empirical evidence on the impact of the credit risk on the profitability of IBs and CBs in operating Palestine. More importantly, the study investigates the moderating effect of the Covid 19 pandemic on credit risk. As well, the study is to use a large sample size with a more recent data set. The results of this paper are of significant implications to academics and practitioners. The results fill the gap in the literature of non-existing studies that compare the impact of credit risk on the profitability of both IBs and CBs and add to the body of knowledge in this area. The study also aims to provide practitioners with guidelines on whether this risk constitutes a significant threat that resources need to be devoted to actively managing this risk. Additionally, the study highlights the effect Covid 19 has on the profitability of IB and CBs.

This paper is organized as follows. The following section provides a review of the relevant literature. The section that follows is the methodology section. Then the analysis and results section, and finally is the conclusion and policy implications section.

2 Literature Review

2.1 Credit Risk

Several products and transactions within the banking business model involve credit risk. These include loans, leases, reverse repurchase agreements (reverse Repos), bonds, and derivatives [9]. Credit risk is defined as the potential loss a bank incurs due to the failure of the borrower of the counterparty to meet its contractual obligations under the agreed terms [10]. This definition views credit risk as an extreme case of insolvency. Credit position may incur a loss due to top credit deterioration of the borrower without becoming insolvent. Therefore, there are two definitions of credit risk.

Credit risk originates at the individual loan (standalone) level. Therefore, credit risk management starts at that level with prudent origination, underwriting, credit risk policy, setting appropriate limits, and the credit risk approval process. However, the assessment and management of credit risk at the consolidated portfolio level are essential [10].

2.2   Previous Studies

Reviewing the past literature reveals that the evidence of the impact of credit risk on profitability is contradictory. [6] finds that credit risk as measured by non-performing loan to advances loan (NPL/LA) and loan advance to total deposit (LA/TD) and loan loss provision/classified loans (LLP/CL) has a significant negative impact on the financial performance of banks (ROA). As well, [11] find a negative relationship between liquidity and profitability, and a negative relationship exists between profitability and credit risk. [7] use capital adequacy ratio (CAR) and non-performing loan ratio as proxies of credit risk. The result indicates a negative relationship between credit risk and ROA and ROE. Finally, [4] uses non-performing loans, capital adequacy ratio, impaired loan reserve, and loan impairment charges as credit risk measures. He finds that the non-performing loan ratio a significant negative relationship with the ROA, while capital adequacy ratio has a positive and significant relationship with ROA. Impaired loan reserve has a significant negative impact on the ROA. [12] examine the effect of credit risk and capital adequacy on the profitability of rural banks in the Philippines. The results indicate that the capital adequacy ratio measured as total shareholders' equity over the total assets has no significant impact on profitability. In contrast, credit risk measured as loan loss reserve over total loan has a negative and statistically significant relationship with profitability. On the Other hand, [13] find a positive relationship between non-performing loans and rural banks' profitability (ROA and ROE). The result showed that credit risk has a significant positive relationship with both profitability measures. [14] find an inverse relationship between the non-performing loan ratio (NPLR) and profitability (ROA). On the other hand, the study finds a positive relationship between loan provision/non-performing loan (LP/NPL) and ROA.

2.3   Hypothesis Development

Based on the above evidence provided, the following hypotheses have been developed:

H1: Credit risk has a statistically significant impact on the performance of both types of banks IBs and CBs.
H2: There is a significant difference in the impact of credit risk on the performance of IBs vs. CBs.
H3: The Covid 19 has a statistically significant impact on the performance of banks.

3   Methodology

3.1   Population and Sample

The study population includes 14 banks (11 CBs and three IBs). The sample includes 13 banks (11 CBs and two IBs). The excluded banks do not have a complete data set for the sample period from 2011 to 2020. Appendix 1 exhibits the sample of the study. The data used include secondary data that have been collected from the Palestinian Monetary Authority (PMA), the annual financial reports of individual banks, and those available from the Association of Palestinian Banks. In addition, the data of macroeconomic variables have been obtained from the World Bank Data Bank.

3.2   Variables of the Study

The variables of the study are classified into three categories: Dependent variables (DV), Independent variables (IDV), and control variables (CV). Two measures of profitability have been used, namely: ROA and ROE. Two sets of control variables are introduced: Macroeconomic variables (Real GDP growth rate and Inflation) and micro-control variables (Age and Size). Table 1 exhibits the variables of the study. In addition, to account for the incremental impact of IBs' credit risk over that of CBs, a dummy variable has been introduced. The dichotomous variable takes the value of 1 for IBs and the value of zero for CBs.

Table 1.   Variables of the study

Variables	Symbol	Equation	Reference
A. Dependent variables			
Return on Asset	ROA	Net income/ Avg. Assets	[3, 14, 15]
Return on Equity	ROE	Net income/ avg. Equity	[1, 3, 16]
B. Independent variables			
non-performing loan Ratio	NPLR	Non-performing loan/total loan	[14, 15, 17]
Loan provision to gross loan	LPGL	LLP/Gross loans	[15, 17]
capital adequacy ratio	CAR	Total capital/risk-weighted assets	[3, 12, 13]
C. Control variables			
Covid 19	2020DUM	$\begin{cases} 0: \text{years other than 2020} \\ 1: \text{years 2020} \end{cases}$	
C.1 Micro			
Liquidity	LQR	Liquid Asset/Total Deposits	[6–22]
Bank size	BS	Natural logarithm of total assets	[2, 18–23]
Bank orientation	DUM	$\begin{cases} 0: \text{if CB} \\ 1: \text{if IB} \end{cases}$	[13–25]
C.2 Macro			
Real GDP growth	RGDPG	LN $(RGDP_t/RGDP_{t-1})$	[2, 7, 21–25]
Inflation	INF	LN (CPI_t/CPI_{t-1})-1	[2]

3.3 Econometrics Model

The specification of the econometric model to be estimated is as follows:

$$PER_{it} = \beta_0 + \beta_{1it}CNPLR_{it} + \beta_{2it}CAR_{it} + \beta_{3it}LQR_{it} + \beta_{4it}BS_{it} + \beta_5 2020DUM_{it}$$
$$+ \beta_{6it}GDPG_{it} + \beta_{7it}INF_{it} + \beta_{8it}CNPL * DUM_{it} + \beta_{9it}CR * DUM + \beta_{10it}Age_{it}$$
$$+ \beta_{11it}BS_{it} * DUM + \beta_{12}CNPLR_{it} * 2020DUM_{it} + \beta_{13}LPG_{it} * 2020DUM_{it}$$
$$+ \beta_{13}CAR_{it} * 2020DUM_{it}\varepsilon_{it}$$

PER_{it}: performance measure. Two models are estimated as two accounting-based performance measures that have been used, return on assets (ROA) and return on equity (ROE).

4 Analysis and Results

4.1 Summary Statistics

The summary descriptive statistics of the analysis variables are presented in Table 2 and Table 3. While the operating performance of the two types of banks as measured by the ROA is similar (0.01), their return to shareholders (ROE) is different between the two types of banks. The average ROE for CBs is 6%, while 9% for IBs indicates that IBs have higher profitability than CBs during the sample period. On the other hand, the non-performing loan ratio (NPLR) is higher for CBs than IBs (0.01 versus 0.00). In addition, the average loan loss provision to total loan (LPGL) is higher for CBs than IBs (0.02 versus 0.01). This result indicates that CBs are more conservative in their provision policy than IBs.

Table 2. Descriptive statistics of CBs

	ROA	ROE	NPLR	LPGL	CAR	BS	GDPG	INF
Mean	0.01	0.06	0.01	0.02	0.24	20.40	0.06	0.01
Median	0.01	0.02	0.00	0.02	0.19	20.22	0.05	0.02
Maximum	0.03	0.42	0.02	0.03	1.07	22.38	0.14	0.03
Minimum	0.00	−0.03	0.00	0.00	0.11	18.75	0.00	0.00
Std. Dev.	0.01	0.08	0.01	0.01	0.16	0.93	0.05	0.01
Skewness	0.68	1.54	1.09	−0.80	2.70	0.47	0.22	−0.10
Kurtosis	4.87	6.17	3.33	3.66	12.14	2.36	2.01	1.76
Jarque-Bera	20.05	73.45	18.14	11.28	422.14	4.85	4.41	5.94
Probability	0.00	0.00	0.00	0.00	0.00	0.09	0.11	0.05
Sum	0.94	5.43	0.56	1.44	21.87	1,836.35	5.71	1.19
Sum Sq. Dev.	0.00	0.56	0.00	0.00	2.24	77.10	0.18	0.01
Observations	90	90	90	90	90	90	90	90

The average bank size of CBs is relatively higher than that of IBs. In terms of distributional characteristics, the tables show that except for bank size and the macroeconomic variables, the remaining variables have non-normal distribution.

Table 3. Descriptive statistics of IBs

	ROA	ROE	NPLR	LPGL	CAR	BS	GDPG	INF
Mean	0.01	0.09	0.00	0.01	0.17	20.33	0.06	0.01
Median	0.01	0.08	0.00	0.02	0.15	20.31	0.05	0.02
Maximum	0.02	0.14	0.01	0.02	0.30	21.00	0.14	0.03
Minimum	0.00	0.01	0.00	0.00	0.12	19.52	0.00	0.00
Std. Dev.	0.00	0.04	0.00	0.00	0.06	0.45	0.05	0.01
Skewness	−0.25	−0.34	1.11	−1.55	1.15	−0.11	0.22	−0.10
Kurtosis	2.02	2.31	3.01	5.20	3.09	1.83	2.01	1.76
Jarque-Bera	0.90	0.71	3.73	10.88	4.00	1.07	0.88	1.19
Probability	0.64	0.70	0.16	0.00	0.14	0.59	0.64	0.55
Sum	0.17	1.56	0.04	0.25	3.13	365.96	1.14	0.24
Sum Sq. Dev.	0.00	0.03	0.00	0.00	0.06	3.49	0.04	0.00
Observations	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00

4.2   Correlation Matrix

The correlation matrix is presented in Table 4. Pairwise correlation coefficients between the study variables are less than 80%, which implies the absence of possible multicollinearity between the variables.

4.3   Model Estimation Results

Two models have been estimated using the balanced panel regression analysis by stata17. The results are as follows:

4.3.1   ROA Model

The estimated results of the ROA model are shown in Table 5. These results are estimated using the feasible generalized least squares (FGLS) that correct for heteroscedasticity and serial correlation.

Table 5 shows that the non-performing loan ratio (NPLR) has a negative (−1.39) but statistically insignificant impact on the ROA at the 5% significance level. This result agrees with that of [17, 26, 27] and indicates the size of the NPLs at the Palestinian CBs is not material to affect their ROA. In other words, CBs exert prudent lending policies

Table 4. Correlation matrix

	ROA	ROE	NPLR	LPGL	CAR	BS	GDPG	INF
ROA	100%	65%	−14%	14%	7%	32%	12%	13%
ROE	65%	100%	−13%	−5%	−38%	62%	4%	4%
NPLR	−14%	−13%	100%	−8%	30%	−24%	11%	21%
LPGL	14%	−5%	−8%	100%	17%	−31%	38%	36%
CAR	7%	−38%	30%	17%	100%	−70%	17%	20%
BS	32%	62%	−24%	−31%	−70%	100%	−20%	−25%
GDPG	12%	4%	11%	38%	17%	−20%	100%	47%
INF	13%	4%	21%	36%	20%	−25%	47%	100%
DUM	−6%	13%	−26%	−13%	−17%	−3%	0%	0%

Table 5. Estimation results-ROA model

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]		Sig
NPLR	−0.139	0.08	−1.73	0.084	−0.296	0.019	*
LPGL	0.190	0.074	2.57	0.01	0.045	0.335	**
CAR	0.022	0.004	5.47	0	0.014	0.03	***
LATD	−0.001	0.004	−0.14	0.885	−0.008	0.007	
BS	0.005	0.001	7.55	0	0.003	0.006	***
GDPG	0.003	0.01	0.35	0.727	−0.015	0.022	
INF	0.079	0.04	1.98	0.048	0.001	0.157	**
DUM* NPLR	1.215	0.418	2.91	0.004	0.396	2.035	***
DUM* LPGL	0.338	0.276	1.23	0.22	−0.203	0.878	
DUM* CAR	−0.042	0.02	−2.08	0.038	−0.083	−0.002	**
DUM* LATD	0.000	0.012	−0.01	0.992	−0.024	0.024	
DUM* BS	0.000	.	.	.	.	.	
2020DUM*NPLR	0.200	0.257	0.78	0.435	−0.302	0.703	
2020DUM*LPGL	0.077	0.273	0.28	0.778	−0.458	0.612	
2020DUM*CAR	−.0199	0.017	−1.20	0.231	−0.052	0.013	
Constant	−0.094	0.014	−6.83	0	−0.121	-0.067	***
Mean dependent var		0.01		SD dependent var		0.005	
Number of obs		108		Chi-square		85.656	
Prob > chi2		0.766		Akaike crit. (AIC)		-876.539	

*** p < .01, ** p < .05, * p < .1

and practices that minimize the impact of non-performing loans on their profitability. As a result, the effect of credit risk on IBs profitability is (1.076), which is statistically significant at a 1% level of significance. While the NPLR shows a negative impact, LPGL exhibits a positive (0.190) and statistically significant impact on the ROA. This result indicates that the higher the provision, the higher the operating profitability of CBs. IBs have a high and positive impact of the LPGL on their ROA (0.528), but this effect is statistically insignificant. Capital Adequacy (CAR) has a positive (0.022) and significant impact on the ROA of the CBs. This result indicates that increasing the equity to capital ratio (CAR) positively impacts the ROA. While this highlights that decreasing the financial leverage would increase the ROE, it pinpoints the possible improvement in the operating performance due to reduced leverage. Concerning IBs, the incremental effect of their capital adequacy is insignificant, which signifies that there is no statistical difference between IBs and CBs in the impact of CAR on their respective profitability. The results indicate that liquidity, as measured by LATD, has a negative (-0.001) and insignificant impact on the ROA at a 5% significance level. This result indicates that the higher the liquidity, the lower the profitability. This result agrees with that of [11]. The liquidity of IBs has no statistically significant incremental impact over that of CBs. The bank size has a positive (0.005) and statistically significant impact on the ROA. This result indicates that larger CBs have higher ROA. However, Table 5 shows no statistical difference between IBs and CBs concerning the size variable. The growth rate in real GDP, which reflects the business cycle swings, has a positive (0.003) impact on the ROA.

4.3.2 ROE Model

The results of the estimated model using the return on equity (ROE) as the dependent variable is presented in Table 6. The results are estimated using the feasible generalized least squares (FGLS) that correct for heteroscedasticity and serial correlation.

The results show that the non-performing loan ratio (NPLR) has a negative (-1.22) but statistically insignificant impact on the ROE. This result indicates that the size of the NPLR at CBs is not material to affect their ROE. This result confirms that of [17, 26, 27]. This result can be interpreted on the ground that the provisioning policies of CBs are aggressive as the actual NPLs have been accounted for their impact. IBs have no statistically significant differential impact of their NPLR on profitability. While the NPLR shows a negative impact, LPGL exhibits a positive (0.904) but statistically insignificant impact on the ROE. This result indicates that the provisioning for the potential adverse effect of credit risk does not affect the profitability of CBs. The LPGL of IBs has a more significant positive incremental impact (3.188), but it is statistically insignificant. Capital Adequacy (CAR) of CBs has a positive (0.007) but insignificant effect on their ROE. This result indicates that increasing the equity to capital ratio (CAR) positively impacts the ROE. However, CAR of IBs shows a negative impact on their ROE but is statistically insignificant.

Finally, the liquidity of the CBs measured by LATD shows a positive (0.169) and significant impact on the ROE. This result indicates that the higher the liquidity, the higher the profitability. This result contradicts that of [11]. On the other hand, the impact of liquidity of IBs on their respective profitability is negative (-0.175) but statistically insignificant. Finally, the bank size has a positive (0.072) and statistically significant

Table 6. Estimation results- ROE model

ROE	Coef.	St.Err.	t-value	p-value	Interval]	Sig
NPLR	-1.221	1.094	-1.12	0.265	0.924	
LPGL	0.904	1.008	0.9	0.37	2.881	
CAR	0.007	0.054	0.12	0.901	0.113	
LATD	0.169	0.052	3.28	0.001	0.27	***
BS	0.072	0.008	8.53	0	0.089	***
GDPG	0.091	0.13	0.7	0.485	0.346	
INF	0.906	0.542	1.67	0.094	1.968	*
DUM* NPLR	9.841	5.692	1.73	0.084	20.997	*
DUM* LPGL	3.188	3.751	0.85	0.395	10.54	
DUM* CAR	-0.188	0.278	-0.68	0.499	0.357	
DUM* LATD	-0.174	0.167	-1.04	0.296	0.153	
DUM* BS	0.004	0.003	1.45	0.146	0.01	
2020DUM*NPLR	0.26	0.334	1.014	0.566	0.914	
2020DUM*LPGL	0.1	0.355	0.364	1.011	0.796	
2020DUM*CAR	-0.026	0.022	-1.56	0.3	0.017	
Constant	-1.534	0.188	-8.17	0	-1.166	***
Mean dependent var		0.065		SD dependent var	0.074	
Number of obs		108		Chi-square	129.17	
Prob > chi2		0.014		Akaike crit. (AIC)	-312.623	

*** p<.01, ** p<.05, * p<.1

impact on the ROE of CBs. This result indicates that larger banks have a higher return to their shareholders. However, Table 6 shows no statistical difference between IBs and CBs concerning the size variable. The growth rate in real GDP, which reflects the business cycle swings, has a positive (0.091) impact on the ROE. However, this impact is statistically insignificant. The change in the purchasing power has a positive (0.906) but statistically insignificant impact on the ROE. Table 6 shows that the interactive effect of the Covid 19 pandemic with the credit risk variables (NPLR, LPGL, and CAR) has a statistically insignificant impact on banks' profitability (ROE).

5   Conclusions and Recommendations

This study deals with one of the most essential and most significant risks banks face. The study finds that credit risk significantly impacts the profitability of both IBs and CBs. This effect is found to be sensitive to the measure of profitability. While credit risk significantly affects the ROA, it has no significant impact on the ROE. In addition, the study finds that the effect of credit risk on the profitability of IBs is indifferent to that of CBs. In addition, the credit risk that rises during the Covid 19 pandemic has an insignificant impact on the profitability of both types of banks.

Based on the above results, we recommend that both types of banks concentrate on managing the credit risk at the portfolio level, eliminating borrower-specific loss events and taking the benefits of cross-correlations among the borrowers. Therefore, minimize the concentration of credit that results from either conventional sources or correlated risk factors. In addition, we recommend banks reconsider the level of their capital adequacy

ratios (CAR). The results reveal that both types of banks are overcapitalized, which impacts their profitability levels and prevents them from the benefits of financial leverage. Additionally, we recommend banks expand their lending levels as the pandemic has an insignificant impact on the credit risk of borrowers. Banks need to be part of the solution as they are no part of the problem.

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Resource Dependency and Capital Structure: A Study of Manufacturing Firms in India

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Abstract. This work takes a deviation from the earlier studies in defining resource dependency at firm level from the energy use patterns. We arrive at the sample of manufacturing firms in the Indian economy based on the strict rule of energy reporting. The empirical results confirm that capital structure in terms of book leverage is different between the resource based and non-resource based firms. The results of this study confirm that firm size, affiliation and expenditure on environmental services are major determinants of book leverage. Similarly, expenditure on environmental services and energy dependency on coal explain the inter-firm differences in market leverage. The resource base firms' expenditure on environmental services are equally important as firm size or firm affiliations in explaining capital structure.

Keywords: Resource based firms · Capital structure · Firm characteristics · Manufacturing firms · India

JEL Codes: G31 · L6 · Q57

1 Introduction

Resource curse introduced by Auty in 1993 describes how resource rich economies face downward spiral on growth and how, counter-intuitively, these countries had lower economic growth than countries least dependent on natural resources. In other words, resource scarce countries outperform resource abundant countries in long run. An influential study by Jeffrey Sachs and Andrew Warner found a strong correlation between natural resource abundance and poor economic growth[1]. Many economic theories state that the existence of natural resources does not appear to be a bigger problem but rather the failure of government and policy makers to ward off the danger that accompanies the natural gift seems to be greater problem. However, there are resource rich countries that seem to have escaped the curse entirely. Frequently given examples are Norway and

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[1] Sachs, Jeffrey; Warner, Andrew (1995a, b). "Natural Resource Abundance and Economic Growth". NBER Working Paper (5398). doi: 10.3386/w5398

Botswana, who have managed to turn respectively oil and diamond riches into lasting sustained economic growth (Gylfason 2001; Papyrakis and Gerlagh 2007). The paradox of resource abundant countries showcasing slow economic growth has become a well-established empirical fact. With introduction of this concept in 1993, diverse studies have been conducted on this subject literature to test the credibility at various levels i.e. international, regional and municipal level. We investigate whether the resource dependent firms are profitable and productive than the non-resource based firms. Our idea to explain the inter-firm differences and firm heterogeneity among firms in the Indian manufacturing industries focusing on the capital structure of firms.

2 Review of Literature

Financial sectors in resource-dependent countries serve large resource firms with significant tangible assets. Baum et al. (2011) find that the listed firms in general are larger on average than non-listed firms and enjoy easier access to external finance. The empirical specification uses control variables such as firm-size, tangibility and profitability. The country-specific indicators are collected from the World Development Indicators (WDI)[2] such as the Gross Domestic Product (GDP) growth rate, inflation, bank concentration, domestic lending to private sector, stock market turnover, corruption and profit tax rate. Further, the author also includes three binary variables such as (1) "developed" to indicate high income country by World Bank in 2008, (2) "deposit insurance" to show the country has some sort of deposit insurance scheme, and, (3) "common law" to highlight common law origins of the legal system. Further, Credit rating is taken from *Standard and Poor's ratings*[3] as of 2011. Using firm level data, the author compares inter firm differences of capital structure between the resource dependent and non-resource dependent firms. Due to the nature of selection of variables the final data is censored. Quantities techniques such as the correlation matrix, ANOVA, ANCOVA, Variance Decomposition, and Pooled Regression with and without interaction variables are used to validate the hypothesis. With the limitation of the data set in use the author observe that the capital structure of non-resource dependent firms is tilted towards the capital structure of the resource sector in resource-dependent countries. Further, the author indicates to improve the study to small and medium sized companies that are more likely to be affected negatively by a domestic financial sector geared to serving the needs of large resource firms.

Fearon and Laitin (2003), Collier and Hoeffler (2004), Humphreys et *al.* (2005) and Collier (2007) all found that the economic dependence on oil and mineral wealth is correlated with civil war. Fifth, Endowment of "point source" commodities undermine institutional quality and growth thereby lead to corruption, inequality, class structure,

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[2] World Development Indicators (WDI) is the primary World Bank collection of development indicators, compiled from officially-recognized international sources. It includes over 800 indicators covering more than 150 economies.

[3] Standard and Poor's Financial Services LLC (S & P) is an American financial services company. It is a division of S & P Global that publishes financial research and analysis on stocks, bonds and commodities.

chronic power struggles, and absence of rule of law and property rights. A strong literature with empirical evidences demonstrate the fact that resource-abundant countries as compared to resource scare countries tend to have lower growth rates[4]. A large literature in the past has highlighted different reasons for occurrence of economic stagnation due to resource abundance. According to Gylfason (2001) natural capital appears to crowd out human capital, thereby slowing down the pace of economic development. Mehlum (2006) claims that institutions are decisive for the resource curse. Alkhater (2012) states that the effect of resource abundance on economic growth leads to sufficiently high rate of political repression and in particular fostering rent-seeking. Rodrik (1999) argues that economic stagnation causes economic fragility.

Research consistently shows that resource-dependent counties exhibit anemic economic growth across different nations or states. Sachs and Warner (1995a, b, 1999, 2001) show that nations with more natural resources exhibit lower growth even after controlling for geographical, demographic, political, or economic differences. Papyrakis and Gerlagh (2007) have recently extended this research to the U.S. and show that the resource curse also holds at the state level. James and Aadland (2011) add to this literature by testing whether the resource curse exists at an even more disaggregated county level. For county level analysis, 3092 US counties have been covered in dataset and data has been downloaded from the U.S. Census Bureau's website.

Sachs and Warner (1995a, b, 1999), and Sachs (1996) identify crowding out of manufacturing activities as a reason for halt in growth process. Further, this paper tests the credibility to see whether natural resource intensive economies had higher price levels after controlling for the systematic relationship between price levels and GDP. The empirical results confirm that resource-abundant countries tend to be high-price economies and, perhaps as a consequence, these countries tended to miss-out on export-led growth. Another reason for resource rich economies to have slow growth is due to fact that resource abundant countries tended to have small contributions from export growth in manufactures. The possible reason behind it could be lack of active exports promotions. One explanation of the resource curse is that resource abundance tended to render the export sectors uncompetitive and that as a consequence resource-abundant countries never successfully pursued export-led growth. Some other reasons for occurrence of natural resource curse are authoritarianism, wasting the natural resources on unproductive projects, government officials tempted into rent-seeking and possible corruption rather than pro-growth activities etc. Thus, natural resource countries experience lower innovation, lower entrepreneurial activity, poorer governments and lower growth.

3 Data and Methods

3.1 The Data

Centre for Monitoring the Indian Economy (CMIE's) software package prominently known as PROWESS compiles firm level database on Indian industry. The data used for estimation has been extracted from Center of Monitoring Indian Economy database. The data set is a panel data covering all the firms in Indian manufacturing industry from 2004

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[4] Sachs and Warner (1995a, b, 2001) and Arezki and van der Ploeg (2007).

to 2016. The main reason for extracting the data after 2004 was that during that time first comprehensive energy policy document was introduced to planning commission. Initial database containing only financial variables had 20,471 observations.

3.2 Construction of Variables

The essential variable required to complete the research work are firm age, firm size, ownership variables, primary energy consumption variables, profitability, tangibility, maturity, book leverage, market leverage, export intensity etc. (Table 1).

Table 1. Description of the variables

Variables	Functional definition
NIC code (NIC)	NIC (National Industrial Classification) code to capture various industries present in manufacturing and its impact on firms characteristics
Firm age	Firm age is calculated by subtracting the incorporation year from the year till which data is collected/ available
Incorporation year	The year in which the firm was established

3.3 Methods

In this study we use firm specific indicators to define the capital structure of the firm. To arrive at determinant of capital structure we have used multiple regressions taking book leverage, market leverage and maturity as dependent variables in case of full sample analysis. The objective of this paper is to determine whether the capital structure of resource firm differs from the capital structure of a non resource firm. To better analyze the results we further create the sub sample of the data base and conduct our empirical estimations.

4   Empirical Results

4.1 Determinants of Book Leverage

We hypothesize that capital structure is different based on the recourse dependency of firms. Further, we assume that firms become more productive and profitable those are resource dependent. In this paper, we differentiate resource based firms and non-resource based firms on the bases of energy requirements that are classified for the primary and secondary energy choices. The sample of firms use variety of energy sources such as coal, diesel, liquefied petroleum gas (LPG), renewable energy and traditional energy. In an attempt to capture the choice of fuel sources we have created dummy variable for each of the fuel in use at firm level. For example- if a firm uses coal as their primary source of energy, it takes value 1 otherwise, 0. With the help of these energy sources we

Table 2. Determinants of book leverage (full sample)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
dummy_govt	−0.0732***		−0.0705***	−0.0558**	−0.0567***
	(0.0204)		(0.0219)	(0.0219)	(0.0220)
dummy_mne	0.0626***		0.0510**	0.0453**	0.0473**
	(0.0194)		(0.0202)	(0.0191)	(0.0187)
dummy_group	−0.0485**		−0.0380*	−0.0285	−0.0301
	(0.0192)		(0.0202)	(0.0190)	(0.0187)
firm_age	−5.86e−05	0.000116	3.00e−05	−6.75e−05	−6.79e−05
	(0.000155)	(0.000147)	(0.000153)	(0.000151)	(0.000148)
carbon_dummy	−0.0224	−0.0207	−0.0209	−0.00845	−0.00908
	(0.0157)	(0.0158)	(0.0154)	(0.0149)	(0.0150)
firm_size	0.00315*	0.00494***	0.00341**	0.00379**	0.00366**
	(0.00165)	(0.00146)	(0.00167)	(0.00173)	(0.00173)
dummy_coal		0.00446	0.00318	0.00808	0.00908
		(0.00902)	(0.00911)	(0.00901)	(0.00895)
dummy_diesel		0.0338***	0.0291**	0.0227**	0.0238**
		(0.0120)	(0.0118)	(0.0113)	(0.0112)
dummy_lpg		0.0322**	0.0275**	0.0241**	0.0247**
		(0.0125)	(0.0126)	(0.0118)	(0.0118)
dummy_renewableengy		−0.00388	−0.00761	0.00790	0.00881
		(0.0115)	(0.0109)	(0.0112)	(0.0111)
tangibility				−0.115***	−0.112***
				(0.0158)	(0.0158)
pm_1				0.0175	
				(0.0178)	
exp_intensity				0.000182*	0.000200**
				(0.000100)	(0.000101)
mar_lev				−1.79e−05	−1.85e−05
				(1.84e−05)	(1.83e−05)
maturity				0.00886	0.00958
				(0.0115)	(0.0116)
pm_2					−0.0255
					(0.0297)

(*continued*)

Table 2. (*continued*)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	0.0641***	0.0410***	0.0522***	0.0818***	0.0824***
	(0.0135)	(0.0137)	(0.0146)	(0.0158)	(0.0158)
Observations	899	899	899	893	893
R-squared	0.046	0.047	0.071	0.140	0.141

Robust standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

can easily note down the distinctive features of resource dependent firms and its capital structure. Ownership characteristics are also very significant for understanding capital structure of a firm (Table 2).

Export intensity means the ratio of aggregated export sales to total firm sales. Export intensity shows a positive relation with book leverage in Model 4 and Model 5. The productivity of a firm is an important determinant of export intensity and productivity is positively related to firm size. So here we can draw a conclusion that larger the size of firm, more is the export intensity and higher the book leverage. Here in the model we have not estimated productivity, but we believe that these variables follow the same path. Total factor productivity can be included for further comparison of the determinants of book leverage that serves as one of the limitations of this thesis. Model 5 is the best fit model for book leverage with the highest R^2 in comparison to other models.

5   Conclusion

This work takes a deviation from the earlier studies in defining resource dependent at firm level from the energy use patterns. We arrive at the sample of manufacturing firms in the Indian economy based on the strict rule of energy reporting. Further, based on the industrial ecology literature, we test our hypothesis that resource based firms have different capital structure as compared to the non-resource based firms.

The empirical results for the full sample clearly show that book leverage is better indicator in defining capital structure of a firm, than market leverage. The results of book leverage with firm characteristics indicate that private firms irrespective of their affiliation, whether domestic or multinationals, have higher book leverage. These are the firms with large firm size, and limited tangible assets. Literature suggests that market leverage is an alternative measure of *leverage*, and an important determinant in defining capital structure of the firm. However, we differ from the empirics, mostly due to sample behavior, that are structured based on energy use patterns. Maturity of a firm is another indicator of capital structure. As book leverage and maturity remain significant in explaining capital structure of the firm, we further gauge the results of resource dependent firms vis-à-vis the non-resource dependent firms. We validate the hypotheses that resource based and non-resource based firms have different capital structure.

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The Impact of Applied of IFRS (9) Standard on the Financial Performance of Jordanian Commercial Banks in Light of the Corona Pandemic

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Abstract. This research aimed to clarify the impact of the application of IFRS 9 standard on the financial performance of Jordanian Commercial Banks (JCB) under the Corona pandemic, to achieve the goal of this research Descriptive analytical method was used the Population consisted Of all Jordanian commercial banks, While the research sample consisted of the following commercial banks (Housing Bank, Arab Bank, Jordan Bank, Jordan Kuwaiti Baank, union Bank and Cairo Amman Bank) during the period of 2018 till the end of the third quarter of 2021 where the owners' equity was used to select the research simple and SPSS was used to analyze the research data.

The financial performance was measured through financial indicators (profitability, financial strength, liquidity, financial risks), and the independent financial variable was measured through the provision for declining credit facilities and government accounts. One of the most prominent results of the research in the level of significance ($\alpha \leq 0.05$) and the trademark (9) IFRS on the financial performance of JCB in light of the Corona pandemic. In addition, the atmosphere of the exemplary research in postgraduate studies and benefit from the application of the IFRS (9) criterion as much as possible, in addition to following up on updates and amendments on a regular basis.

Keywords: IFRS (9) standard · Financial performance · Allowance for declining credit facilities · Debit current accounts

1 Introduction

Banks in the world today have become a major part of affecting the economy, and an essential part of financial transactions. Therefore, attention must be paid to all aspects related to them, including the application of the IFRS (9); the importance of applying the standard comes from its impact on deposits and loans, as it enhances depositors' confidence in banks. Because it provides more guarantees and greater protection than the previous one, and this in turn enables banks to provide liquidity and meet their

obligations. As for loans, it will lead to the promotion of a sound research of the credit-worthiness of customers, which represents a protection for banks from any risks related to borrowers not fulfilling their financial obligations [1].

Also, the application of this standard will have important effects on banks with regard to calculating allowance for declining credit facilities, and debit current accounts. It also contributes to introducing broader and more comprehensive concepts in risk management; this, in turn, requires the existence of a sound governance structure and procedures for banks to ensure the proper application of the concepts contained in IFRS (9) [2].

With the emergence of COVID-19 at the end of 2019, the human cost of the epidemic was catastrophic, and the attempts of governments to contain the spread of the virus were so ruthless that global economic activity was on the verge of stopping. The consequences of the COVID-19 pandemic are significant; this created great uncertainty regarding the economic consequences of the crisis, and as COVID-19 continued to spread around the world, countries faced a general economic slowdown, high levels of unemployment, and a decline in consumer confidence.

Based on the foregoing, it became clear to us the importance of applying IFRS (9) criterion in calculating losses before they occur; and that is through the correct application of IFRS (9) standard and knowing the impact of this on the financial performance of JCB in light of the Corona pandemic.

2   The Research Problem

Performance evaluation is of great importance for any economic or financial organization, especially in the current period in which the world is witnessing the Corona pandemic, and because of the pandemic and closure, many organizations have gone bankrupt, and therefore it is necessary to research the impact of the standard on financial performance; As during the pandemic, it witnessed an expansion in banking transactions.

On this basis, the problem of the research lies in identifying the impact of the application of IFRS 9 standard on the financial performance of JCB in light of the Corona pandemic, and knowing the impact of allowance for declining credit facilities and debit current accounts on the financial performance of banks.

3   The Importance of Research

The importance of research emerges from the challenges of complying with the requirements of the IFRS (9), which needs an in-depth research in order for the standard to achieve the desired benefit from it during the Corona pandemic. As the standard requires calculating provisions for debts based on expectations of default or non-payment on the part of the borrower.

4   Objectives of Research

This research seeks to achieve the following objectives:

1. Identifying the impact of debit current accounts on the financial performance of JCB in light of the Corona pandemic.
2. Identifying the impact of allowance for declining credit facilities on the financial performance of JCB in light of the Corona pandemic.
3. Coming up with results and recommendations that contribute to the effectiveness of applying the IFRS (9) standard on the financial performance of JCB in light of the Corona pandemic.

5   Research Hypotheses

The research hypotheses can be formulated as follows:

HO1 the main premise:
There is no statistically significant effect at the level of significance ($\alpha \leq 0.05$) for the application of the IFRS (9) criterion on the financial performance of JCB in light of the Corona pandemic.

The following sub-hypotheses are derived from this hypothesis:

HO1–1: First sub-hypothesis:
There is no statistically significant effect at a significant level ($\alpha \leq 0.05$) of the allowance for declining credit facilities on the financial performance of JCB in light of the Corona pandemic.
HO1–2: Second Sub-Hypothesis:
There is no statistically significant effect at the level of significance (($\alpha \leq 0.05$) for debit current accounts on the financial performance of JCB in light of the Corona pandemic.

6   Limitations Research

1. Comparing the published financial statements of Jordanian commercial since the mandatory application of IFRS (9) from 1/1/2018 to the end of 2021.
2. The period of the research represent years of 2018 and 2019 before the Corona pandemic and years of 2020 and 2021 after the Corona pandemic.

7   Theoretical Framework

International Standard No. IFRS (9) (Financial Instruments) is an international standard for financial reporting, and the purpose of this international standard is to enhance financial integrity in the banking system, as it contains major and important topics,

namely: classification and measurement of financial instruments, expected credit losses and hedge accounting.

Standard IFRS (9) entered into effect for commercial banks on January 1, 2018, replacing the previous International Financial Reporting Standard for Financial Instruments, International Accounting Standard IFRS (39) [3].

It aims to replace Standard No. (9) IFRS in place of Standard No. (39) IAS for Financial Reporting; to increase allowance for credit losses (impairment) and reduce after-tax profits in banks, IFRS (9) has particularly important implications for commercial banks; they often hold financial assets; this reduces the expected loss model from the cyclical fluctuations of financial regulations, thus improving financial stability.

Standard IFRS (9) includes all organizations that have financial instruments, and aims to classify the financial instruments in line with the business model used by economic organizations. The International Standard on Financial Instruments is divided into three main sections: recognition and measurement, expected credit losses, and hedge accounting [4].

From the point of view of researchers, the IFRS (9) criterion is very important because it is an important way to classify financial assets, and it is very important for measuring and calculating allowance for credit facilities and debit current accounts. Especially for commercial banks; they often hold financial assets; this reduces the expected loss model from the cyclical fluctuations of financial regulations, thus improving financial stability [5].

The development strategy for the standard was a preliminary plan that can be changed according to the priorities of the Council it deems appropriate, through feedback and consultations with the rest of the parties concerned or interested in this project. It included the following themes: recognition and measurement, expected credit losses, and hedge accounting [6, 7] and [8].

On December 22, 2010, the Central Bank of Jordan(CBJ) issued a circular to licensed banks in Jordan; regarding the early implementation of the first phase of the International Financial Reporting Standard (9). IFRS On May 18, 2016, the CBJ issued another circular regarding the implementation of international financial reporting. The CBJ asked banks to research the impact of the application of the standard on their financial statements, and the application of the standard was confirmed as of 1/1/2018.

On June 6, 2018, the CBJ issued instructions No. (13/2018) regarding the application of the IFRS (9), which included the scope of application, governance requirements, classification and measurement of assets, financial liabilities and their derivatives, trading and hedging accounting. The instructions also included the expected credit loss in terms of the scope and general framework for applying the standard and measuring credit risk [9].

7.1 Current Accounts

The concept of current account: It is a contract between two parties (the bank and the customer) where the customer deposits his money or securities (checks) in a special account (the current account) that he can withdraw or add to at any time he wants and within a pre-agreed mechanism (cash, checks, etc.). Or an automated debit card)" [10],

and it can be defined as the normal current accounts whose balance must always be in credit, meaning that the customer cannot withdraw more than his deposit [11].

7.2 Allowance for Declining Credit Facilities

Credit results in receivables on the balance sheet of the bank that has paid off customer obligations, and the receivable is recorded as a current asset. One of the main risks of selling goods on credit is not ensuring that all payments are collected; to take into account this possibility, banks create allowance for declining credit facilities [10].

7.3 Financial Performance

Financial performance is "a fundamental and important concept, as the importance of knowing financial performance comes through assistance in understanding the financial statements, as well as assistance in conducting analysis and comparison processes, and following up and knowing the economic and financial conditions surrounding the bank" [12].

Financial performance is "one of the issues that determine the degree of development and organization of economic organizations, through which the material pillars of society are formed, which secure a breakthrough towards civilization and social well-being, which is built primarily on the basis of material accumulations achieved by countries, which is directly reflected in the development of national income in them" [13].

7.4 The Most Important Measures of Financial Performance

In view of the multiplicity of standards used to show the financial capacity of companies, competitiveness and ability to fulfill their obligations, and also due to the multiplicity of types of companies, including commercial, industrial, agricultural, and service, as well as to the diversity in the sizes of these companies. A clear vision of it including these measurements:

1. Profitability indicators: which includes (the ratio of total profit before tax to total assets, the ratio of total profit after tax to total assets, the rate of return on assets, the rate of return on equity) [14] and [15].
2. Financial strength indicators: which includes (the capital adequacy ratio, the ratio of non-performing debts to the total debts of operating banks [16] and [17].
3. Liquidity indicators: which includes (the ratio of current assets to total assets, the ratio of loans to deposits, the ratio of deposits to assets, the ratio of financial leverage) [18].

8 Method and Procedures

Secondary sources were relied on through books, periodicals, magazines, and published and unpublished theses related to the subject of the research. As well as relying on published bank reports for the years 2018–2021.

8.1   Population and Sample of the Research

The research population consists of all (13) Jordanian commercial banks listed on the Amman Stock Exchange. Where the sample study included the data of the (6) Jordanian commercial banks, namely (Housing, Arab, Jordan, Jordanian Kuwaiti, Al-Etihad and Cairo Amman). Where the basis of property rights was adopted as it is on 1/1/2021 to select the research sample.

8.2   Research Variables

The dependent variable in (the financial performance of commercial banks): through a set of financial ratios that work on evaluating the performance of commercial banks as follows:

– Profitability indicators: which includes (the ratio of the total profit before tax to the total assets, the ratio of the total profit after tax to the total assets, the rate of return on assets, the rate of return on equity).
– Financial strength indicators: which includes (the capital adequacy ratio, the ratio of non-performing debts to the total debts of operating banks).
– Liquidity indicators: which includes (the ratio of current assets to total assets, the ratio of loans to deposits, the ratio of deposits to assets, the ratio of financial leverage).

As for the independent variable (the application of IFRS 9 standard)), it aims to classify financial assets in line with the business model used by banks, as it will be measured through: allowance for declining of credit facilities and debit current accounts.

8.3   The Statistical Methods Used

1. Descriptive analysis: which aims to describe the data of the research sample through the measures of central tendency represented (arithmetic mean, standard deviation, and the lowest and highest value), as this will aim to clarify the measures of central tendency for the data of the research sample.
2. Analysis of financial ratios: this aims to clarify the importance of each ratio in the banks of the research sample.

8.4   Descriptive Analysis

Through the descriptive analysis of the research sample, it was found that the Corona pandemic had negatively affected each of the debit current accounts, the ratio of profit before tax to assets, the ratio of profit after tax to assets, the ratio of capital adequacy, the ratio of current assets to total assets, the ratio of loans to deposits, the ratio of credit risks, and the ratio of risks Investment, as all these indicators decreased during the pandemic period, which was represented by the research in the years 2020 and 2021.

The statistical analysis also indicates that the Corona pandemic has positively affected both the allowance for declining credit facilities, the return on assets, the return on equity, the ratio of non-performing debt to total debt and the ratio of deposits to assets, as all these indicators increased during the pandemic period, which was represented by the research in the year 2020 and 2021.

8.5   Financial Ratio Analysis

The analysis of the financial ratios for the results of the allowance for declining credit facilities for the research sample indicates that the highest value of the allowance for declining credit facilities in the Bank of Jordan in the year 2020 was also the lowest value in Cairo Amman Bank in 2019. The value of the debit current accounts in the Housing Bank in 2019 was also the lowest value in the Arab Bank in 2020.

The tax in the Jordan Kuwait Bank in 2019 as it was the lowest value in the Arab Bank in 2021, the analysis of the financial ratios of the results of the profit after tax ratio to the assets of the research sample also indicates that the analysis of the financial ratios of the results of the profit before tax ratio to assets for the research sample indicates that the highest value to profit before tax to assets for sample study. The highest value of profit after tax was in the Bank of Jordan in 2018, and the lowest value was in the Housing Bank in 2021.

The analysis of the financial ratios of the results of the return on assets for the research sample indicates that the highest value of the return on assets in the Housing Bank in 2019 and 2020 was also the lowest value in the Union Bank in 2019. The analysis of the financial ratios of the results of the return on equity ratio for the research sample indicates that the highest return on equity in Bank Al Etihad in the year 2020 and the lowest value in Bank Al Etihad in 2019.

Also, the analysis of the financial ratios of the results of the capital adequacy ratio for the research sample indicates that the highest value of capital adequacy in the Arab Bank in the year 2019 was also the lowest value in the Bank of Jordan in 2018 and 2019. The analysis of the financial ratios of the results of the non-performing debt ratio indicates the total debts of the sample researching.

The highest value of non-performing debts to total debts was in the Bank of Jordan in 2018, and the lowest value was in the Jordan Kuwait Bank in 2018.

The analysis of the financial ratios of the results of the ratio of current assets to total assets of the research sample indicates that the highest value of current assets to total assets in the Bank of Jordan Kuwait in the year 2020 as it was the lowest value in the Housing Bank in 2018, and also the analysis of financial ratios indicates the results of the ratio of loans to deposits For the research sample, the highest value of loans to deposits in the Bank of Jordan was in 2019 and the lowest value was in the Bank of Jordan in 2021. The analysis of the financial ratios of the results of the ratio of deposits to assets for the research sample indicates that the highest value of deposits to assets in the Bank of Jordan in the year 2021 It was also the lowest value in the Housing Bank in 2019.

9   Testing Hypotheses

The hypotheses of the research were tested through the SPSS program in order to achieve the objectives of the research and answer its assumptions, and the results were as follows:

With regard to the hypotheses of the research, they were tested through the multiple regression model, as the Table 1 indicates the results of the test sub-hypotheses.

Table 1. Table the results of the test sub-hypotheses

The dependent variable: the financial performance of commercial banks			
The independent variable	B	T	Sig.
Constant parameter	0.355	2.734	0.012***
Allowance for declining credit facilities	0.155	14.862	0.000***
Debit current accounts	0.18	12.922	0.000***
R^2	74.96%		
Sig.	0.000***		

From the Table 1 the results of the multiple regression analysis indicated that the value of the coefficient of determination is ($R^2 = 74.96\%$), which means that (74.96%) of the change in the financial performance of commercial banks is due to the application of the IFRS (9) criterion with its two parts (the allowance for declining credit facilities and debit current accounts). Accordingly, the first main null hypothesis will be rejected and the alternative hypothesis will be accepted, which states "there is a statistically significant effect at the significance level ($\alpha \leq 0.05$) for the application of the IFRS (9) criterion on the financial performance of JCB in light of the Corona pandemic.

As the Table 1 indicates that the value of (T = 14,862) with the allowance for declining credit facilities, and with a significant significance of less than 5%, which means rejecting the null hypothesis and accepting the alternative hypothesis which states: "There is a statistically significant effect at the significance level ($\alpha \leq 0.05$) for allowance for declining credit facilities on the financial performance of JCB in light of the Corona pandemic.

As the Table 1 indicates that the value of (T = 12.922) of debit current accounts, with a significant significance of less than 5%, which means rejecting the null hypothesis and accepting the alternative hypothesis which states "there is a statistically significant effect at the significance level ($\alpha \leq 0.05$) for the debit current accounts On the financial performance of JCB in light of the Corona pandemic.

To ascertain if there is a difference in the financial performance of JCB that is affected by the Corona pandemic, so the paired sample T-test was conducted for the independent variables: allowance for declining credit facilities and debit current accounts for the period before the Corona pandemic for the years 2018 and 2019 and for the period after the Corona pandemic for the years 2020 and 2021 as shown in the tables below, Table 2 and Table 3.

Table 2. Paired sample T-test/allowance for declining credit facilities

		Paired differences			t	df	Sig. (2-tailed)
		Mean	95% confidence interval of the difference				
			Lower	Upper			
Pair1	Credit facilities - Corona	39689798	−2641156	82020753	2.94	23	.045

From the Table 2 the results of the paired sample T- test analysis indicated that the value of the t-statistic value was 2.94, which is statistically significant at a significant level of less than 5%, and this indicates the presence of a difference in the pre- and post-the Corona pandemic for the first independent variable, which is allowance for declining credit facilities.

Table 3. Paired sample T-test/debit current accounts

		Paired differences			t	df	Sig. (2-tailed)
		Mean	95% confidence interval of the difference				
			Lower	Upper			
Pair1	Debit current accounts – Corona	157152457	104692541	209612373	6.19	23	.000

From the Table 3 the results of the paired sample T- test analysis indicated that the value of the t-statistic value was 6.19, which is statistically significant at a significant level of less than 1%, and this indicates the presence of a difference in the pre- and post- the Corona pandemic for the second independent variable, which is debit current accounts.

10 Results of Research

1. There is a statistically significant effect at a significant level ($\alpha \leq 0.05$) for the application of the IFRS (9) criterion on the financial performance of JCB in light of the Corona pandemic.
2. There is a statistically significant effect at a significant level ($\alpha \leq 0.05$) of the allowance for declining credit facilities on the financial performance of JCB in light of the Corona pandemic.
3. There is a statistically significant effect at a significant level ($\alpha \leq 0.05$) of debit current accounts on the financial performance of JCB in light of the Corona pandemic.

11 Recommendations of Research

1. The research recommends conducting more studies related to the application of the (9) IFRS criterion on the financial performance of JCB in light of the Corona pandemic for subsequent years to show the impact for the coming years.
2. The research recommends taking advantage of the application of IFRS (9) standard as much as possible, in addition to following up on updates and amendments to the standard on a regular basis.
3. The research recommends making full use of the application of the IFRS (9) standard on the financial performance of JCB in light of the Corona pandemic, and using other financial ratios that were not used in this research.

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The Impact of Asset Management Efficiency on the Financial Leverage and Return on Investment in Small Production Enterprises in View of the Covid-19 Pandemic. Case Study: The Jordanian Ministry of Social Development - Zarqa Governorate

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Abstract. The study aimed to determine the impact of the asset management efficiency of small production enterprises on financial leverage and the return on investment in view of the Covid-19 pandemic. The Jordanian Ministry of Social Development - Zarqa Governorate was selected as a case study. The descriptive-analytical approach was used to achieve the study objectives. The data related to the study variables were collected from the statements of Social Development Directorates in Zarqa Governorate, as these directorates are the case study of the study population represented by 40 directorates of the Ministry of Social Development in Jordan. The study concluded that there is a statistically significant negative impact of the asset management efficiency on the financial leverage in small production enterprises in the Ministry of Social Development - Zarqa Governorate. Also, there is a statistically significant positive impact of the asset management efficiency on the return on investment in small production enterprises in the Ministry of Social Development in Zarqa Governorate. The study recommended providing training courses for these enterprises' ownership to empower them to face economic crises, especially in view of global economic crises such as the Covid-19 pandemic and increase the ability to reduce financial leverage and raise the return on investment for these enterprises.

Keywords: Asset management efficiency · Financial leverage · Return on investment · Small production enterprises · Ministry of Social Development

1 Introduction

Investment enterprises of all kinds, large, medium, and small-sized, are of great importance in all countries, especially in developing countries because of their pivotal role in sustainable economic and social development, as they contribute to increasing job

opportunities, solving the problem of unemployment, increasing exports, reducing the balance of payments deficit, increasing domestic output and economic growth.

Small and medium enterprises (SMEs) play a vital role in the Jordanian economy, representing 95% of the size of the business sector and 70% of the employment opportunities, thus contributing to 40% of the GDP. If properly managed and properly funded, these enterprises can play a major role in creating new jobs and boosting the Jordanian economy [2].

However, the Covid-19 pandemic is believed to have negatively affected these enterprises, due to the closures that lasted for more than 6 months in Jordan. The Jordanian government has taken a set of defense laws to protect the owners of production enterprises, including postponing the payment of loan installments without fines or interest, in the hope that these enterprises will not be affected by the pandemic.

This study was conducted to measure the efficiency of assets management that is financed through the production families' enterprises program and measure the impact of such on financial leverage in view of the Covid-19 pandemic.

1.1 Study Problem

The financing structure in small production enterprises depends on the soft loans obtained by these enterprises from the Productivity Promotion Directorate to reduce unemployment and poverty. These are loans in the form of production assets purchased to empower families to manage these assets in the best possible way to generate the necessary revenue that provides these families with a source of income and eventually pay off the loan. After paying off the loan, families become the sole owner of such enterprises and the capital structure moves from being a financial obligation to property rights in favor of these families. However, in the last couple of years, the economic world witnessed a serious crisis due to the Covid-19 pandemic which led to the weakening of the global and local economy, and since these production enterprises depend on providing services directly to consumers, it is expected that small production enterprises have been affected by the pandemic, leading to a decrease in the efficiency of asset management and thus a decrease in the ability to pay as well as in the return on investment. Hence, this study tries to answer the following questions:

1. What is the impact of asset management efficiency in small production enterprises on the financial leverage ratios in view of the Covid-19 pandemic?
2. What is the impact of asset management efficiency in small production enterprises on the return-on-investment ratios in view of the Covid-19 pandemic?

2   Literature Review

Jaber discussed [5] the financing sources of small production enterprises. He concluded that the main source of financing for these small enterprises is through government support that contributes to granting them legal status and developing small enterprises to reduce the problem of unemployment and create jobs. In reality, the failure of governments to support small enterprises may lead to the failure of these enterprises, as

indicated by Marhaj [6]. Ilhiti [4] presented a model that can achieve justice through the support of the wealthy to the poor by providing the necessary liquidity to their enterprises, in which the lender renounces the right of return on investment to the borrower without government intervention, where the goal is not earthly but the reward of God in the hereafter. Dabić [1] explored the concept of intellectual flexibility and its great role in the success of small entrepreneurial enterprises, but the failure of some production enterprises is not only due to weak government performance, the scarcity of wealthy volunteers or intellectual flexibility. Sometimes failure results from economic crises that plague the world, and this is clarified by Humphries [3] in his study of the impact of Covid-19 and the signed-into-law CARES Act, where the deterioration of the conditions of small organizations or their termination was quite evident.

3   Research Methodology

The study used the descriptive-analytical approach to achieve the objectives of the study.

3.1   Hypotheses Formulation

This study is based on the strong impulse theory [9], the idea of the theory is that there is a need for a strong impulse or a large and intensive program in the form of a minimum investment in order to overcome development obstacles and put the economy on a path of self-growth, and this push comes in developing countries only before Governments, where governments provide capital in the form of soft loans.

First Hypothesis.

Achieving the goal of these enterprises depends on the efficiency of their ownership in managing assets and their ability to generate revenue and repay the loan and thus reduce the financial leverage ratio, since the whole capital is a loan from the Productivity Promotion Directorate.

According to the above, the first hypothesis is formulated as follows:

H01:

There is no statistically significant impact at a significance level (0 0.05) of the asset management efficiency on financial leverage in small production enterprises in the Ministry of Social Development in view of the Covid-19 pandemic.

Second Hypothesis.

The second hypothesis aims to measure the efficiency of investment, as the loan granted by the Ministry of Development to individuals aims to achieve a permanent source of income that helps poor families achieve material independence.

According to the above, the second hypothesis is formulated as follows:

H02:

There is no statistically significant impact at a significance level (0 0.05) of the asset management efficiency on the return on investment in small production enterprises in the Ministry of Social Development in view of the Covid-19 pandemic.

3.2 Sources of Information Collection

Two types of data collection sources were used to complete this study, namely:

1. Primary sources: The study relied on the financial data taken from the data of the Ministry of Social Development, Zarqa branch.
2. Secondary sources: The study relied on library sources and review of literature, which included books, published research, specialized periodicals and bulletins.

3.3 Study Sample and Population

Since this study is a case study for Zarqa Governorate Development Directorate, which is part of the Social Development directorates in Jordan, the population are all small enterprises sponsored by Zarqa Development, and the sample 55 enterprises sponsored by Zarqa Development were taken.

3.4 Study Variables

Independent variable: Asset management efficiency measured by calculating asset turnover (dividing sales by average assets).
  Dependent variables:
  Financial leverage: measured by dividing total debt by total ownership rights.
  Return on investment: measured by dividing the present value of the investment minus the initial cost of the investment by the initial cost of the investment.
  Mediator variable: Covid-19 pandemic.

3.5 Adopted Statistical Methods

1. Descriptive analysis of study variables through measures of centrality (arithmetic mean, standard deviation, and lowest and highest value).
2. Testing the study hypotheses by applying multiple regression.

Descriptive Statistics Table 1 shows the descriptive analysis of the study data, where the average arithmetic value of loans granted to finance small enterprises reaches (3180) dinars while the highest value of financing was (5000) dinars and the lowest value (2000) dinars with a standard deviation of (819) dinars. These sums are used to finance the purchase of assets necessary for operating production enterprises, thus the value of the loan is proportional to the size of the assets purchased for these enterprises at the start of the enterprise. The value of assets increases with the increasing profits and decreases with losses, so it is noticed from the table that the highest value of the average assets is (7000) dinars and this value exceeds the highest value of loans, while the lowest value the same falls below (2000) the minimum loans. This confirms the large disparity in the size of profits among these enterprises. It is probable that losses led to the drop in the size of assets. This is confirmed by the large disparity in the size of sales which affects the net profit, where the highest value of sales is (57330), thus affecting the profits as the highest value of profits is (24967) while the lowest value of sales is (1100) dinars

and the lowest value of profits is (160). The table also shows the value of the financial obligations resulting from these enterprises (payable loans) where the lowest value of these obligations is (100) dinars and the highest (4800) dinars with an arithmetic mean of (2309) and a standard deviation of (1010) dinars.

Table 1. Descriptive statistics of study variables for 55 enterprises (2018–2021)

Variable	Mean	Maximum	Minimum	Std. Dev
Loan value	3180	5000	2000	819
Average assets	2645	7000	250	1384
Sales	13298	57330	1100	14746
Profits	5776	24967	160	5612
Financial obligations	2309	4800	100	1010

Table 2 shows the descriptive statistics of financial analysis ratios of the study data, where the rate of return on assets shows the highest value of 29.78 and this ratio reflects a high efficiency in asset management and a large difference from the minimum rate of return on assets, where it reached (0.297) with a standard deviation of (5.97) and an arithmetic mean of (5.791). So, there is a large disparity in the capabilities of production enterprises owners in asset management to achieve profits. This is clearly reflected on the financial leverage ratios where the average financial leverage ratios reached (4.25), which is close to the average rate of return on assets. Whereas the highest value of the financial leverage ratios amounted to (6.23) with a difference in no small measure to the minimum value which reached (1.56) with a standard deviation of (3.6). Also, regarding the return on investment, there is a large discrepancy between the highest and lowest value of the return on investment. This is consistent with the results of the return on assets average, where the highest value of the return on the investment reached 850% with a significant difference from the lowest value reaching (4%), and a standard deviation of (164.6%) while the arithmetic mean of the return on the investment reached (176.8%). A significant difference between the highest value and the average values has been noticed, indicating that the highest value is regarded as anomaly.

Table 2. Descriptive statistics of study variables (2018–2021)

Variable	Mean	Maximum	Minimum	Std. Dev
Rate of return on assets	5.791	29.78	0.297	5.97
Financial leverage	4.25	6.23	1.56	3.65
Return on investment	176.8%	850%	4%	164.6%

3.6   Empirical Estimation Method

To measure the results of the hypotheses test, the following equations were used:

$$FL = a_0 + B_1 ATR + \in \qquad (1)$$

$$ROI = a_0 + B_1 ATR + \in \qquad (2)$$

ATR: Asset Turnover Ratio
FL: financial leverage
ROI: Return on Investment
Empirical Results and Analyses
Testing Study Hypotheses.
To test the study hypotheses, the study used the time series analysis of data through the SPSS before and after the Covid-19 pandemic; 2018 and 2019 before the pandemic, and 2020 and 2021after it. The results were as follows:
First Hypothesis.
H01: There is no statistically significant impact at a significance level (0 0.05) of the asset management efficiency on financial leverage in small production enterprises in the Ministry of Social Development in view of the Covid-19 pandemic.

Table 3 shows the results of testing the first hypothesis "The impact of asset management efficiency on financial leverage before and after the Covid-19 pandemic". It is noted from the table that the number of enterprises before the pandemic reached (55) and after the pandemic (44). This indicates a decrease in the number of production enterprises, indicating that (11) of these stopped working because of the pandemic, i.e., 20% of enterprises were closed. The arithmetic mean of indebtedness before the Covid-19 pandemic reached (2.2137), while after the pandemic it increased to (6.3666) as the financial leverage increased by 199%. This is an indicator that the ability to pay financial obligations decreased, while the dependence on external financing by these production enterprises increased, showing the financial stumbling that those enterprises faced due to the pandemic. It is also noticed that the rate of assets turnover (asset management efficiency) decreased by 18% compared to the same before the pandemic, indicating the negative impact of the Covid-19 pandemic on production enterprises.

Results of the hypothesis testing before the Covid-19 pandemic indicate that the efficiency of asset management negatively impacts on the financial leverage (0.502), i.e., the greater the efficiency of asset management the lower the financial leverage ratio, indicating an increase in enterprises' capabilities to pay obligations and reduced dependence on external financing. This impact is statistically significant as the value of the (T) Test amounted to (8.462) at a significance level less than 0.05.

It is noted in Table 4 that the efficiency of asset management continues to negatively affect the financial leverage with an amount of (0.412) after the Covid-19 pandemic, whereas it decreased due to the economic crisis Jordan witnessed due to the pandemic. This effect is also statistically significant as the value of the (T) Test reached (6.557) at a significant level of less than 0.05.

Based on the previous results, the null hypothesis is rejected, and the alternative hypothesis is accepted, i.e., there is a statistically significant impact of the efficiency

Table 3. Results of the first hypothesis test

(Accept/reject) null hypothesis	(Yes/no) whether significant	(2-tailed) p-value	(β) coefficient	(0.05 significance) T test	ATR mean 2 years	FL mean 2 years	No. of enterprises	(Before/after corona pandemic)	Financial year
Reject	Yes	<0.05	−0.502	8.462	6.462	2.1237	55	(2 years before Covid-19 pandemic)	2018–2019
Reject	Yes	<0.05	−0.412	6.557	5.272	6.3666	44	(2 years after the Covid-19 pandemic)	2020–2021
					1.19	−4.2429	−11		Variation
					18%	−199%	20%		Variation ratio

of asset management on the financial leverage in production enterprises in view of the Covid-19 pandemic.

Second Hypothesis.

H02: There is no statistically significant impact at a significance level (0 0.05) of the asset management efficiency on the return on investment in small production enterprises in the Ministry of Social Development in view of the Covid-19 pandemic.

Table 4 shows the results of the second hypothesis test on the impact of asset management efficiency on return on investment (ROI) before and after the Covid-19 pandemic. It is noted that the arithmetic mean before the Covid-19 pandemic was (379%), dropping after the pandemic to (131%) where the (ROI) dropped by 70%. This indicates that the value of returns dropped, and this is consistent with the economic situation during the pandemic in Jordan where the small production sectors had declined.

Table 4. Results of the second hypothesis test

(Accept/reject) null hypothesis	(Yes/no) whether significant	(2-tailed) p-value	(β) coefficient	(0.05 significance) T test	ATR mean 2 years	ROI mean 2 years	No. of enterprises	(Before/after corona pandemic)	Financial year
Reject	Yes	<0.05	0.498	5.301	6.462	379.076%	55	(2 years before Covid-19 pandemic)	2018–2019
Reject	Yes	<0.05	0.421	5.657	5.272	131.058%	44	(2 years after the Covid-19 pandemic)	2020–2021
					1.19	266.018%	−11		Variation
					18%	70%	20%		Variation ratio

The result of the hypothesis testing before the Covid-19 pandemic indicates that the efficiency of asset management has a positive effect by (0.498) on the return on investment, i.e., the more efficient the asset management the higher the ROI, indicating an increase in the capability of enterprises to achieve profits. This impact is statistically

significant as the value of the (T) test amounted to (5.301) at a significance level less than 0.05.

It is noted in Table 4 that the efficiency of asset management continues to positively affect the ROI with an amount of (0.412) after the Covid-19 pandemic, whereas it decreased due to the economic crisis Jordan witnessed due to the pandemic. This impact is also statistically significant as the value of the (T) Test reached (5.301) at a significance level less than 0.05 before the pandemic, and after the pandemic this value reached (5.657) at a significance level less than 0.05.

Based on the previous results, the null hypothesis is rejected, and the alternative hypothesis is accepted, i.e., there is a statistically significant impact of the efficiency of asset management on the return on investment in production enterprises in view of the Covid-19 pandemic.

4   Results

1. 20% of production enterprises stopped working due to the economic crisis caused by the Covid-19 pandemic.
2. The financial leverage ratio increased by 199%, which is a significant increase, indicating a weak ability to pay obligations and increased dependence on external financing.
3. Asset management efficiency decreased by 18%, conforming to the previous results.
4. A decrease of 70% in the return on investment due to the decrease in the efficiency of asset management resulting from the economic crisis.
5. The Covid-19 pandemic has negatively affected the financial performance of production enterprises funded by the Ministry of Social Development.
6. Small-scale production enterprises have been significantly affected by the Covid-19 pandemic due to the weak financial position of these enterprises and their inability to cope with economic crises.

5   Conclusions

Based on the study results and the hypotheses testing results, the following are concluded:

1. There is a statistically significant negative impact of the efficiency of asset management on the financial leverage in production enterprises, i.e., the more efficient the management of assets, the greater the dependence on internal financing instead of external financing, leading to an increase in the capability to repay the loan granted by the Ministry of Social Development in Jordan, Zarqa city.
2. There is a positive impact of the efficiency of asset management on the rate of return on investment, where the more efficient asset management, the greater the capability of the enterprise to generate profits, nevertheless this capability decreased significantly due to the pandemic.

6   Recommendations

Based on the previous conclusions, the study recommends:

1. The study recommends raising the interest in small production enterprises and working to provide technical support through training courses for the enterprises' ownership to help them increase the efficiency of asset management in view of economic crises so that they can pay their financial obligations and overcome these crises, thus achieving the desired goal of these enterprises.
2. The study recommends increasing the country's financial support for these enterprises so that they can overcome the major economic crises to which Jordan is exposed.

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Future Anxiety and Its Relation to Domestic Violence Among Married Couples in Light of the Covid-19 Pandemic in the Northern Governorates of the West Bank/Palestine

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Abstract. This study aimed to identify the level of future anxiety and its relationship with domestic violence among married couples in the northern West Bank governorates during the corona pandemic, it also aimed to identify the role of the demographic variables (gender, age, educational qualification, work, monthly income, family size, and place of residence). The study sample consisted of (200) wives and husbands from the governorates of the northern West Bank. In order to collect the data, the sheikhi Scale (2009) was used to measure future anxiety, and the Ahmad Scale (2016) to measure domestic violence. The results showed that the level of future anxiety and domestic violence was low in all areas, it also showed no differences between feelings of future anxiety and domestic violence due to (sex, work and family size), while it showed a direct relation between future anxiety and domestic violence, in addition to differences in the responses of the sample towards future anxiety and domestic violence in light of the corona pandemic in the northern West Bank governorates due to the (age, educational qualification, monthly income, and place of residence) variables.

Keywords: Future anxiety · Domestic violence · Corona (Covid 19)

1 Introduction

The corona pandemic, which swept the world and spread widely, is one of the reasons that society has been affected on the psychological, social, economic, professional and family levels, leading to a sense of psychological frustration as a result of fear as the impact of the pandemic on the human psyche and a sense of anxiety about the continuation of the pandemic for an extended period of time as well as its impact on the family in particular, which may lead to the destabilization of the relationship between spouses and resort to violence in all its forms as a kind of relieving in light of the difficult circumstances we live in and the loss of compatibility and adjustment between the spouses or parents and children (Ghabishi 2020).

Individuals' lives and living are significantly affected by the corona pandemic's public safety procedures, which contributes to feelings of anxiety and the presence of

emotional disorders and behavioral dysfunctions resulting from various anxiety disorders and depression, as well as fluctuations in life leading to psychological pressures among individuals, noting that there is a disparity between individuals in their ability to endure anxiety (Mukhtar 2020).

Thinking and predicting the future is one of the things that civilized societies and peoples care about, especially the ones who are trying to find themselves a place on the global and international map, as the changes and events experienced by the contemporary individual make the level of future anxiety varies from one person to another according to his strength, Man has become in a state of general anxiety about himself and the world in which he lives in, as for the families, in light of the living and political instability, thinking about their responsibility and how to secure their living requirements, the majority of families have anticipation and fear of the future, which stems from the failure to achieve their material and moral ambitions, including those related to the job and others related to forming a family, Therefore, the anxiety of the future is considered a type of anxiety that poses a threat to the health of the individual, and makes him in a state of emotional, nervous, chronic and complex with obsessions or dread, it also can turn into a pathological phenomenon when mixed with fear and dread without a certain or a specific Couse, and then develops from stage to another starting with a mild chronic fear, then a strong overwhelming fear, and finally a secondary stimulus involving a learned avoidance response (Kariman 2007).

Where anxiety is an emotional state characterized by fear and anticipation of harm, it is an unpleasant emotion, containing discomfort and instability about future events, and the resultant sense of constant tension and fear which is objectively unnecessary, and often related to fear of the unknown future (Al-Ansari 2004).

The increasing anxiety of the future also generates a kind of psychological frustration among individuals, which in turn affects the behavior of individuals and their responses to various life stimuli, which generates violence that affects family compatibility within the same family, as violence is considered evidence of family maladjustment, which affects the socialization processes of individuals (Al-Masry 2011).

Algerian study found a relationship between the sources of psychological stress and future anxiety (Al-Taher 2010).

While violence between spouses is a continuous social phenomenon in all countries of the world and is considered a violation of human rights, it is not confined to a specific society or culture, but rather a general phenomenon, and as it is considered a product of the changes that have undergone the function of socialization in the family system that have arisen as negative phenomena in society and is considered an indicator of the failure of the upbringing process The social process, which is the main process that maintains the building and security of society (Al-Masry 2011).

On the one hand, violence has an impact on society's first cell, preventing it from performing its essential social and educational duties. This phenomenon requires attention to reduce it and resulting in a positive effect. Violence between spouses poses a risk to the life of the individual and society and is considered by some researchers to be an indicator of the failure of the socialization process, which is one of the main processes that maintain the building and stability of society (Al-Masry 2011).

The corona pandemic has also played a role that has affected the family significantly as a result of quarantine and the presence of the father at home with his family, prompting the resort to violence as a result of frustration and anxiety caused by the husband as a result of his work, causing the results of incompatibility and harmony within the family as a result of his disruption his work, causing the incompatibility within the family as a result of the situation brought by the Corona pandemic (Senussi and Jallouli 2020). On study of Telles et al. (2020) which demonstrate the impact of the corona pandemic on domestic violence that describes the phenomenon in order to identify its nature and reach results where it was applied to a sample of wives. The study found that increased rates of domestic violence after a natural disaster often extend for several months since domestic violence must be considered a public health consequence of the COVID-19 epidemic, police and psychiatric interventions are necessary, and professionals should be aware of this. High likelihood of increased victimization rates, both during and long after the crisis, especially among isolated families with a prior history or risk factors for domestic violence.

1.1 Study Problem

The emergence of feelings of anxious about the future among family members negatively affects the case of family compatibility and may increase violence in the family, especially in light of the corona pandemic, which affected all aspects of life, from the application of health protocols instructions, and closures associated with the pandemic, which generated a kind of inability of the family to achieve its basic needs, which resulted in the family feeling anxious about the future, and this in turn may have an impact on the stability and balance of the family, and therefore there are external influences that play an important role in the existence of a state of family incompatibility and violence within the family, This study aimed to identify the level of future anxiety and its relationship with domestic violence among married couples in the northern West Bank governorates during the covid-19 pandemic, it also aimed to identify the role of the demographic variables (gender, age, educational qualification, work, monthly income, family size, and place of residence), The problem of the study focuses on answering the main question:

What is the level of future anxiety and its relation with domestic violence among married couples in light of the covid-19 pandemic in the northern West Bank governorates (Jenin, Tubas, Tulkarem, Nablus, Qalqilya, Salfit).

This main question is divided into the following sub-questions:

Q1: What is the level of future anxiety among married couples in light of the covid-19 pandemic in the northern West Bank governorates?

Q2: What is the relationship between future anxiety and domestic violence among married men and women in light of the covid-19 pandemic in the northern West Bank governorates due to the study variables (gender, age, educational qualification, work, monthly income, family size, and place of residence)?

1.2 Terminology of the Study

The Future Anxiety. "Future anxiety is a form of anxiety such as death anxiety and social anxiety, which has been defined as "a state of apprehension, fear, uncertainty and

fear of undesired changes expected to occur in the future, and there may be a threat that something unreal is going to happen to the individual when he/she is extremely anxious about the future", (Zaleski 1996, p. 165).

The researchers defined future anxiety procedurally as the degree to which the respondent obtains on the scale of future anxiety which used in the study.

Domestic Violence. It is every act issued by one or some members of the family towards each other, directly or indirectly, whether the harm is material or moral. Domestic violence appears on several levels, violence between spouses, violence between children, and violence between parents and children (Barqawi 2007).

The researchers defined domestic violence procedurally as the degree to which the respondent obtains on the scale of domestic violence which used in the study.

2 Methods

The descriptive correlative approach was used, which is an approach based on a set of research procedures that depends on collecting facts and data, classifying, processing and analyzing them in a sufficient and accurate analysis to extract their significance and reach results or generalizations about the phenomenon under study, and to find the nature and direction of the relationship between each of the variables of future anxiety with Domestic violence, because this approach is the most appropriate for conducting such a study.

2.1 Participants

The study population consisted of married men and women in the northern West Bank (Jenin, Tubas, Tulkarm, Nablus, Qalqilya, Salfit). Participants were 200 (116 males and 84 females). The age of the participants ranged from less than 20 to more than 40 years (52.5% of participants were 30 to 40 years old and 22.5% were 20 to 30 years old). About 55.0% of the participants' families had a monthly income between 3000–6000 NS (1000–1800 USD). Approximately 70.0% of the participants were living in cities, 22.0% in villages, and 8.0% in refugee camps. Regarding family size, about 33.5% had three members, 51.0% had four to seven members, and about 15.5% had eight or more members. Furthermore, couples' education, 12.0% of the couples completed secondary school, 16.0% completed diploma, 49.0% hold a bachelor degree, and 23.0% completed higher education.

2.2 Measures

Demographic Information Form. This form was used to gather detailed information on basic demographics such as gender, age, monthly family income, housing conditions, place of residence, family size, and job.

Future Anxiety Scale. The Al Mashikhi Scale (2009) concerning Future Anxiety was used, which contains (43) items in its original form. The scale is based on the individual's self-assessment, so he answers in the way he sees himself. The items were built in a positive direction, the items were rated on a 5-point Likert-scale ranging from (1 = never, 5 = often). Cronbach alpha coefficients for the current study was 0.82.

The Domestic Violence Scale. The Ahmad scale (2016) on domestic violence was used, which contains (55) items designed to measure (violence between spouses, and violence between spouses and children). The items were in the positive direction, the items were rated on a 3-point Likert-scale ranging from (1 = not, 3 = often). Cronbach alpha coefficients for the current study was 0.81.

2.3 Procedure

The data was gathered from a sample of married couples in light of the covid-19 pandemic from several cities in the northern governorates of the West Bank/Palestine. The measures were administered to the participants by the first author. The purpose of the study was explained to the participants. Participants were asked not to write their names or identifying information on any of the questionnaires, to ensure their anonymity.

2.4 Data Analysis

Data was analyzed using descriptive and inferential statistics. Independent sample t-test was employed on independent groups in order to identify the differentiation status of the married couples on Future anxiety and domestic violence depending on some variables such as gender, age, monthly family income, housing conditions, place of residence, family size, and job. Bivariate correlation coefficient was used to analyses the relationship between Future anxiety, domestic violence and demographic variables.

3 Results and Discussion

One of the main purposes of this research was to examine the level of future anxiety and domestic violence among married couples in light of the covid-19 pandemic in the northern governorates of the West Bank/Palestine, as well as the relationship between future anxiety, domestic violence and other variables. The overall findings of this research are consistent with those of other studies; however, some of the conclusions are contradicted or supported by the findings.

The current study found that the level of future anxiety among the sample of married people living in the northern West Bank governorates during the corona epidemic was average, the means for the paragraphs ranged from (2.90) to (3.27). As a result of high prices, preoccupation with obtaining the necessities of life and increasing financial obligations, and future anxiety is associated with a set of variables, such as seeing reality in a negative light because of the problems that individuals are currently experiencing, and as a result of the pandemic we are currently experiencing, there are safety requirements

imposed by the current circumstances, which affect the various actions of individuals, and the lack of clarity about the end of this pandemic makes many think about the future and the surprises it hides may prevent the individual from achieving his various ambitions. Since the anxiety of the future is an unpleasant emotional state that results from irrational thoughts such as negative thinking about the future and delusion, which leads to a state of anxiety, confusion, fear, pessimism, and negative expectation, married couples have a fear of the future and its negative changes because of the difficulties the country is experiencing due to the pandemic, and concerns about the future and fear of not being able to plan for the future, and that the future is going to carry many difficulties. people who suffer from future anxiety are characterized by a pessimistic view of the events that occur with them, they are always busy with their negative thoughts, as they are not very productive in all areas of life, and a sense of dissatisfaction, as they have a dispersion in determining their priorities and developing future plans for worrying about the future holding unexpected events, and this ultimately leads the individual to make wrong decisions and fail to solve problems, and here we see that married people have a kind of pessimistic view of the future and a weakness in building future plans, which generates a moderate feeling of future anxiety, future anxiety is an alienating sensation in which the person is powerless to control the unpleasant outcomes associated to the repulsive occurrences that created anxiety, according to social learning theory and cognitive theory.

Thus married couples have a somewhat repulsive experience towards anticipating future events, as the cognitive model sees anxiety as two primary and secondary types, and that the cognitive evaluation of the individual does not occur through awareness, but occurs through evaluation and re-evaluation in an automatic manner, and here the couples have a negative evaluation for their life and the expected events in the future, as the cognitive expectation theory sees that the basic expectations of anxiety include the expectation of physical or social danger, and these expectations and predictions increase not only through a conditional response, but also through observing behavioral patterns in society, the transmission of information, thinking and negative future expectation. What will happen to the individual, which leads to anxiety about the expectation of a negative result, the person believes in its inevitable occurrence without clear evidence and clues, and that the Corona pandemic imposed pessimism among married couples about the future, where negative expectations of what will happen as there is fluctuation in information about the pandemic made them pessimistic about the future as a result of this Information in a way that imposed itself through the models used in society to fight this epidemic. These results are in line with the previous research (Gabr 2012; Eysenck, Payne and Santos 2006), however, other study conflict with the current study findings, study results from (Mohammad 2010), that found a high level of future anxiety.

As answered, Pearson correlation coefficients were computed to investigate the pattern of correlations between the study variables (future anxiety, domestic violence, sex, age, educational qualification, work, monthly income, family size, and place of residence). See Table 1.

Table 1. Correlations among all variables

	1	2	3	4	5	6	7	8
1. Future anxiety	–							
2. Domestic violence	0.28**	–						
3. Gender	−0.05	− 0.02	–					
4. Age	−0.14*	− 0.27**	− 0.16*	–				
5. Qualification	−0.24**	− 0.25**	− 0.06	0.35**	–			
6. Work	0.06	0.03	0.49**	−0.22**	− 0.22**	–		
7. Monthly income	−0.19**	− 0.24**	− 0.19**	0.38**	0.43**	− 0.17**	–	
8. Family size	−0.04	0.06	− 0.08	0.16*	0.06	0.03	0.25**	–
9. Place of residence	−0.06	0.22**	0.13*	−0.24**	− 0.14*	0.18**	−0.13*	− 0.13*

* p < 0.05 level, ** p < 0.01

Table 1 shows a correlation between future anxiety, age, educational qualification and monthly income, it is also clear that there is a correlation between domestic violence and future anxiety and a correlation between domestic violence, age, educational qualification, monthly income and place of residence.

The results showed a correlation between future anxiety and domestic violence among married couples in the light of the corona pandemic in the governorates of the northern West Bank, where the index level of the test was less than (0.05) on all dimensions and the total score, while the value of the correlation coefficient for the total score was (0.264) which is a coefficient of a direct correlation expresses a relationship, and this means that the greater the feelings of future anxiety, the greater the family violence in all its dimensions.

While there was a direct correlation between future anxiety and domestic violence, that is, so we can say the greater the feelings of future anxiety, the greater the domestic violence in all its dimensions, and this is due to the future anxiety affects the psychological state of the individual where the individual feels tension continuously, as if he is upset for the simplest reasons, such he also feels isolated and the inability to change and correctly planning for the future to live a simple life, becomes subject to many emotions and disturbances, which is reflected in his self-confidence and thus on achieving himself, this psychological state affects the violence and increases its use, which may result in the ability to change, and correct things, they are also vulnerable to emotions and therefore resort to the use of violence for the most insignificant reasons.

These results are in agreement with Al-Taher study (2010). The results also showed that the differences on the domestic violence on the dimension of psychological violence between spouses were in favor of the age group (less than 20 years), as well as in favor of the age group (20–30 years), which means that the older the individual, the less psychological violence between spouses, and that the differences on the domestic violence on the dimension of physical violence between spouses were in favor of the age group (less than 20 years), as well as in favor of the age group (20–30 years), which means that the older the age, the less physical violence between spouses, and that the differences on the domestic violence on the dimension of verbal violence between spouses was in favor of the age group (20–30 years), this means that the older the individual, the less verbal violence between spouses, this means that the older the individual, the less verbal violence between the spouses, and that the differences on the domestic violence on the dimension of violence between spouses and children were in favor of the age group less than 20, as well as in favor of the age group (20–30 years) this means that the older the individual the less domestic violence between spouses and children.

This result can be attributed to the fact that married couples have similar feelings associated with future anxiety as a result of the pandemic experienced by the country and the whole world as there are obstacles under health protocols that prevent the achievement of their goals, and also the pandemic is a future concern for them, as for domestic violence, there are differences between the age groups in the life of Spouses, The results showed that the older of married couples, the less domestic violence, and here the life experiences of the individual play an important role in decreasing domestic violence, married people from the lower groups have little experience in family life, so they have marital and family problems caused by the pressure of life and the interference of parents in the lives of spouses, which results in a high degree of domestic violence.

The results of the study also showed that there was a statistically significant differences ($0.05 = \alpha$) in the responses of the study sample towards future anxiety and domestic violence in light of the corona pandemic in the northern governorates of the West Bank due to the variable monthly income on all axes in favor of the category (less than 3000 shekels), as well as in favor of those whose income (from 3000–6000 shekels), i.e. the category (less than 3000 shekels) have more feeling of psychological violence, and that the differences on the domestic violence on the dimension of physical violence was in favor of (less than 3,000 shekels) Category, meaning that they felt more physical violence, and the differences on the domestic violence on the verbal violence dimension were in favor of (less than 3,000 shekels) Category, meaning that a they felt more verbal violence, and the differences on the domestic violence on the dimension of violence between spouses and children were in favor of (less than 3,000 shekels) Category, which means that they felt there is more violence between spouses and children.

This result is due to the fact that the level of monthly income of the family plays a role in the high level of anxiety and domestic violence, whenever the income is low, the family's fulfillment of urgent needs will face obstacles that will prevent it, future anxiety happen when there is not enough capacity for the individual to adapt to the problem he suffers from, as for the domestic violence, low income negatively affects violence, which increases it in the family that has the inability to satisfy their economic needs, as the environment that does not help the individual to achieve himself and succeed in

it, such as providing suitable work for young people, this pushes him towards violence to lead him to the point of explosion where he load up on someone who is weaker than him.

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Marketing, E-commerce and Social Media and Sustainability

The Impact of Using Social Media on Citizens' Choice of Architecture and Interior Design Service Providers in the Gaza Strip - Palestine

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Abstract. The purpose of this research was to explore the impact of using social media on citizens' choice of architecture and interior design service providers in the Gaza Strip - Palestine. To obtain primary data, an empirical study was conducted using 336 questionnaires from Palestinian citizens in the Gaza Strip. The study's findings indicated that there is a relationship between independent variables (content quality, watching designer decoration for similar projects, clients' empowerment, and social media influencers) and the dependent variable (citizens' choice of architecture and interior design service providers) for a variety of reasons that were investigated throughout the study.

Keywords: Content quality · Watching designer decoration for similar projects · Clients' empowerment · Social media influencer · Palestine

1 Introduction

People's living standards have risen in tandem with the fast advancement of science, technology, and the economy. People pay greater attention to their personal living environment while focused on the quality of life. The living environment encompasses not just the public outdoor environment, but also the individual's private indoor living environment. The quality of the indoor environment has substantial effect on people's psychological and physical health, and the interior decorating and furnishings which are crucial for beautifying the indoor environment play a key part in enhancing people's living environment [1].

An 'interior' refers to the inside space of a building structure or a microscale human-made environment in the construction business [2]. Interior design is a difficult task since it has an immediate impact on the users' welfare, physical and mental health, and productivity [3]. Regulations, mood and tone, ornamental styles, space planning, construction, materials, interior environment, and sustainability are all issues that designers must consider [4]. Similarly, interior design is notoriously difficult and time-consuming. The work of numerous professions, including as flooring, partitioning, finishing, heating, ventilation, air conditioning, and mechanical, electrical, and plumbing installation, must be finished before a building can be occupied. In situ building, which is labor

demanding and sometimes done without a regulated working technique, is significantly used in traditional practice [5, 6]. Interior design and construction is typically the most difficult component of project execution, encompassing foundation and superstructure erection, resulting in project delays, mistakes, and reworks, labor safety hazards, poor constructability, and productivity loss [4].

The importance of this study derives from its subject. To our knowledge, there is a scarcity of empirical study on the influence of social media on people' choice of architectural and interior design service providers throughout the world (including Palestine). While this research contributes to previous work, it also provides data that academics and practitioners may use.

The rest of the paper is structured as follows: The conceptual framework and hypotheses are both described in Sect. 2. In Sect. 3, we go through the methods. The study's findings are presented in Sect. 4, and then a discussion is presented in Sect. 5.

2   Theoretical Background

2.1   Citizens' Choice of Architecture and Interior Design Service Providers

Initial developments in consumer choice theory, such as goods in the market with favorable features [7, 8] or market goods combined with time to make attractive goods and services [9], laid the theoretical basic framework for understanding the impact of using social media on citizens' choice of architecture and interior design service providers. In this context, Foster and Just [10] present a methodology for analyzing the impact of information on consumer choice and welfare. They claim that providing information to customers who are unsure about product quality might help them better match their selections with their preferences.

2.2   Content Quality

The quality of content is determined by how successfully it meets its aim(s). It relates to how much information and insight a piece of content has. Content quality includes layout, readability, and grammatical accuracy in addition to information. The quality of content may also be measured by how well it ranks in search results, produces traffic, engages your audience, and converts people. It's not simple to attract the correct audience to the website and business. It's considerably more difficult to engage them and persuade them that the product is the best answer for them. It's practically impossible without good material. However, if the audience considers the material useful, they'll be more inclined to interact with the company and eventually buy from it [11].

We also employ a huge number of semantic traits, which are categorized as follows [11]:

- Punctuation and typos are a big no-no. Poor quality material, especially that accessible online, is generally characterized by a lack of adherence to standard writing principles. Capitalization requirements, for example, may be disregarded; excessive punctuation - particularly repeated ellipsis and question marks—might be utilized; and spacing may be erratic. Several of our features seek to represent these abnormalities by capturing the visual quality of the text; for example, features measuring punctuation, capitalization, and spacing density (percent of all characters), as well as features assessing the text's character-level entropy. Misspellings and typos are one type of bad visual quality; additional characteristics in our collection measure the amount of spelling errors as well as the number of out-of-vocabulary terms.
- Complexity in syntactic and semantic terms. Other characteristics in this subset quantify the syntactic and semantic complexity of the text as it progresses from the punctuation level to more intricate levels of the text. Simple proxies for complexity, such as the average number of syllables per word or the entropy of word lengths, as well as more complicated ones, such readability metrics, are among them.
- Grammaticality. Finally, we employ numerous linguistically-oriented indicators to assess the text's grammatical quality. Part-of-speech tags are used to annotate the material, while n-grams (up to length 5) are used as features. This allows us to record the level of "correctness" of the grammar used to some extent.

As a result, we came up with the following hypothesis:

H1:
Content quality has a favorable impact on citizens' choice of architecture and interior design service providers in the Gaza Strip - Palestine.

2.3   Watching Designer Decoration for Similar Projects

The majority of the time, humans get information by eye movement. The human eye's movement is intimately linked to perception and information processing, and there is a two-way interaction between them [12]. Eye movement may be used to examine people's psychological activities and cognitive processes by observing how they see the outside environment. In 1878, scientists attempted to use eye movement data as markers of mental life [13]. Currently, there is no systematic studies on the visual evaluation of interior decorating environments. A huge number of trials in eye movement research focuses on advertising, reading, psychology, and other related topics. In recent years, several researchers have attempted to broaden the scope of applicability. For example, some individuals are attempting to study the eye movement of the chair, cabinet, couch form, and Ming furniture. However, there are still several areas that might be improved upon, as well as many that are worth investigating. For the public to assess watching designer decoration for similar projects, eye tracking technology may provide a clear-eyed picture and a more scientific evaluation approach. Eye movement technology has shown to be effective in graphic design and psychological research, thus its implementation in the

interior decoration setting might lead to new design and innovation breakthroughs [1]. As a result, we suggest the following hypothesis:

H2:
Clients' empowerment has a favorable impact on citizens' choice of architecture and interior design service providers in the Gaza Strip - Palestine.

2.4   Clients' Empowerment

Because empowerment is one of the most commonly used terms, its meaning varies depending on the field in which it is utilized. This vastness has caused it to lose its true meaning [14]. As a result, it has been manipulated by those who are supposed to empower others to suit their own goals [15].

Since the idea is applied in so many fields, there are many different meanings of empowerment. Mehta and Sharma [14] described empowerment in terms of women's development as a process in which a leader delegated power to a non-leader to represent him. They claim that power is shared and that people are prepared to give it up. Women's empowerment allows them to contribute effectively and efficiently to development by instilling in them the spirit of initiative, innovation, liberty, and accountability. When women in organizations are empowered, they gain a sense of belonging, contentment, responsibility, and fulfillment, all of which contribute to the organization's success [16]. This viewpoint was also held by Arogundade and Arogundade [17], but from a broader perspective - that is, both men and women work.

From a marketing perspective, "Empowerment" is described by Fuchs and Schreier [18] as a method employed by enterprises to offer customers a sense of ownership over a company's product selection process, allowing them to collectively pick the final items the company would eventually sell to the larger market. Customers' control and company-customer partnership were highlighted in its definition. Customers gained connection to the product as a result of being permitted to participate in the product choosing process, which Fuchs and Schreier [18] referred to as "psychological ownership." Customers must be provided more knowledge and choices if they are to be empowered, and the more psychologically connected customers are to a product, the greater the demand for that product [18].

As a result, we assume the following hypothesis:

H3:
Clients' empowerment has a favorable impact on citizens' choice of architecture and interior design service providers in the Gaza Strip - Palestine.

2.5 Social Media Influencers

Micro-celebrities [19] are a term for social media influencers that may be defined as the status of being famous to a narrow set of individuals [20]. They are frequently referred to as "social media stars" since they are viewed as celebrities who rose to prominence through social media. According to Marwick and Boyd [21], Twitter users with a big number of followers, often known as micro-celebrities, refer to their followers as 'fans.' The biggest difference between micro-celebrities and typical A-list celebrities is their tight relationship with their fans. To achieve this tight bond, the micro-celebrity must divulge details from his or her personal life, a process known as "celebrification of a private self" [20].

Influencers, according to Freberg et al. [22], are a new form of third-party endorser who shapes audience opinions through blogs, tweets, and other social media. Carter [23], on the other hand, describes influencers as "trusted persons with big social media followings," emphasizing the attributes of reach and effect. By defining an influencer as an engaged and empowered social media user who is listened to and viewed as a trustworthy source by other social media users. Agostino et al. [24] add the element of trust to the definition. From a strategic communication standpoint, Campbell and Farrell [25] define influencers as someone who posts to social media in exchange for compensation, while Enke and Borchers [26] define influencers as third-party actors who have established a significant number of relevant relationships with a specific quality to and influence on organizational stakeholders through content production, content distribution, interaction, and personal appearance on the social web.

Based on the above, we hypothesize the following:

H4: Social media influencers has a favorable impact on citizens' choice of architecture and interior design service providers in the Gaza Strip - Palestine.

The conceptual structure of the study is depicted in Fig. 1. The dependent variable (i.e. citizens' choice of architecture and interior design service providers) is connected to the independent variables in this model (i.e. content quality, watching designer decoration for similar projects, clients' empowerment, and social media influencers).
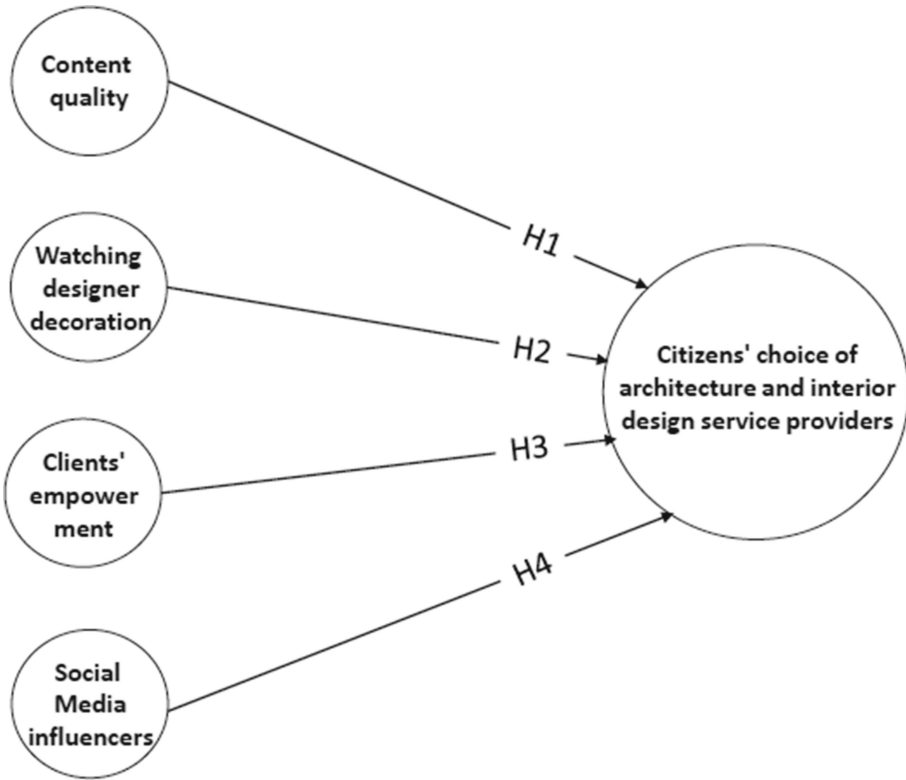
Fig. 1. The research framework

3 Methodology

3.1 Participants

The survey was completed and submitted by 336 people, as shown in Table 1. The demographic variables' findings were displayed in the table.

3.2 Procedures

The descriptive technique was used to identify the present situation and answer to the primary challenges concerning the influence of social media on people' choice of architecture and interior design service providers in Gaza, Palestine. As a result, the survey, which was conducted utilizing a Google form, functioned as the study's primary data gathering approach. The Google form's URL was widely disseminated on social media (Facebook, WhatsApp, and emails). The original questionnaire was correctly translated into Arabic to comply with local language constraints. It was then evaluated and pilot tested by two fluent Arabic speakers for accuracy. For statistical analysis, IBM SPSS software version 21 was employed.

Table 1. Profiles of the respondents ($n = 336$)

Variables	Groupings	No. of respondents	%
Age	30 years or less	174	51.8
	31–40 years	69	20.5
	41–50 years	57	17.0
	51–60 years	24	7.1
	61 years and above	12	3.6
Gender	Male	227	67.6
	Female	109	32.4
Education level	High school or lower	94	28.0
	Diploma	49	14.6
	Bachelor	144	42.9
	Master	45	13.3
	PhD	4	1.2
Marital status	Married	182	54.2
	Single	137	40.8
	Widowed	6	1.8
	Divorced	11	3.2

3.3 Measures

A 5-point Likert scale was used in the survey, with 1 expressing strong disagreement, 2 expressing disagreement, 3 expressing no opinion/neutral, 4 expressing agreement, and 5 expressing strong agreement. The questionnaire was divided into five parts. In the first part, the content quality is assessed using four questions based on [11]. In the second part, four items based on [12, 13], were used to evaluate viewing designer decorating for a comparable project. The third part uses four elements based on [14–18], to discuss client empowerment. In the fourth part, four questions based on [24–27] are utilized to evaluate social media influencers. In the last part, using [7–9], five items were utilized to measure people' choice of architectural and interior design service providers.

4 Results

4.1 Factor Analysis

The KMO and Bartlett's tests were used to evaluate if the factor analysis was appropriate for the study. A score of at least 0.7 on the reliability test is required. In most circumstances, the Bartlett's Sphericity test values should be less than 0.05. The KMO value of 0.739 is higher than the acceptable threshold of 0.000, suggesting that this analysis is sufficient for the study.

To construct the factor score coefficient matrix created by principal components analysis [28–31], one principle factor is rotated using the varimax normalization, as shown in Table 2. There are a total of 21 items in the factor. The study found that the lowest factor loading threshold for several scales is 0.30 [32–36]. Table 2 reveals that all of the loadings are more than 0.30, implying that the scales' construct validity has been preserved.

Table 2. Reliability and factor loading of the constructs.

Construct	Item	MV	SD	FL	Cronbach's α
Content quality	1	3.37	0.89	.732	.752
	2	3.42	0.95	.741	
	3	3.49	0.94	.727	
	4	3.54	0.88	.745	
Watching designer decoration for similar project	1	3.38	0.91	.743	.746
	2	3.46	0.84	.724	
	3	3.35	0.83	.757	
	4	3.27	0.93	.748	
Clients' empowerment	1	3.45	0.75	.736	.743
	2	3.37	0.79	.767	
	3	3.59	0.86	.751	
	4	3.74	0.98	.734	
Social media influencers	1	3.46	0.92	.731	0.752
	2	3.36	0.76	.752	
	3	3.58	0.84	.763	
	4	3.43	0.83	.747	
Citizens' choice of architecture and interior design service providers	1	3.36	0.92	.724	.748
	2	3.51	0.86	.753	
	3	3.28	0.84	.749	
	4	3.43	0.91	.729	
	5	3.43	0.96	.752	

4.2 Hypotheses Testing

The relationship between the independent variables (content quality, watching designer decoration for similar projects, clients' empowerment, and social media influencers) and the dependent variable (citizens' choice of architecture and interior design service providers) was investigated using multiple regression analysis. The researcher intended

to explore how independent variables impacted people' choice of architectural and interior design service providers using a multiple regression analysis.

Independent variables account for 54.7% of the variation in residents' choice of architectural and interior design service providers (adjusted R2 = 0.547), according to Table 3. The model's quality was validated since the F value was significant at 0.000. As shown in Table 3, content quality (t = 2.426, p 0.000), watching designer decoration for similar projects (t = 2.294, p 0.000), clients' empowerment (t = 2.384, p 0.000), and social media influencers (t = 2.349, p 0.000) are all positively related to citizens' choice of architecture and interior design service providers. As a result, the data revealed that the analysis had a significant H1, H2, H3, and H4 support, respectively.

Table 3. Results of multiple regression analysis.

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	0.176	0.073	–	2.426	0.000
Content quality	0.179	0.064	0.168	2.426	0.000
Watching designer decoration for similar project	0.168	0.067	0.154	2.294	0.038
Clients' empowerment	0.182	0.057	0.173	2.384	0.000
Social media influencers	0.167	0.074	0.154	2.349	0.000

Notes: Dependent variable: to citizens' choice of architecture and interior design service providers; adjusted R2 = .547, F = 103.517, and sig. = 0.000

5   Discussion

5.1   Discussion of Findings

The relationship between the independent variable (content quality, watching designer decoration for similar projects, clients' empowerment, and social media influencers) and the dependent variable (citizens' choice of architecture and interior design service providers) is investigated in this study. The findings indicate that the quality of content impacts the citizens' choice of architecture and interior design service providers. This could be attributed to the fact that attracting the right audience to the website and business is not easy. Engaging them and persuading them that the product is the best solution for them is much more challenging. Without good content, it's nearly impossible. If the information is beneficial, however, the audience will be more likely to connect with the firm and subsequently buy from it. This finding is in line with prior research [11].

Besides, the findings indicated a relationship between watching designer decoration for similar projects and the citizens' choice of architecture and interior design service providers. This means that the use of social media platforms helps architects to interact with their friends and show them photographs or videos of their prior work. After that, his buddies advise their family members to hire an architect. This finding is supported by previous researches [12, 13].

In addition, the findings showed that the citizens' choice of architecture and interior design service providers is impacted by clients' empowerment. Fuchs and Schreier [18] define "empowerment" as a mechanism used by businesses to provide customers a sense of ownership over a firm's product selection process, allowing them to jointly choose the final things the company would eventually sell to the general public. Customers' control and the relationship between the firm and the customers were emphasized in the definition. This finding is supported by [14–17].

Furthermore, the findings indicated that social media influencers have an effect on the citizens' choice of architecture and interior design service providers. According to Freberg et al. [22], influencers are a new type of third-party endorser that uses blogs, tweets, and other social media to alter audience attitudes. Influencers, on the other hand, are described as "trusted personalities with large social media followings" by Carter [23], highlighting the traits of reach and effect. By characterizing an influencer as a social media user who is active and empowered, and who is listened to and seen as a reliable source by others. This finding is supported by [25–27].

5.2   Limitations and Further Research

Contextual and application limitations were among the study's empirical findings. Our findings are based on replies from Palestinian citizens' choice of architecture and interior design service providers in the Gaza Strip. As a result, it's impossible to make broad generalizations about Palestine. Despite the fact that the findings apply to rising economies with comparable cultural roots, such as Palestine, they may not be suitable for places with different cultural situations.

Future studies might re-examine the concept in different contexts or cultures, according to the researchers. Additionally, to increase knowledge of the links and mechanisms underlying the situation at hand, moderating and/or mediating elements might be included to the model.

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International Media Role in Israel-Palestine Conflict Management: Analysis of Media Practitioner Viewpoints

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Abstract. Often media and communication researchers and scholars narrow their study on the relationship between the revolution in communication and information technology which transformed media coverage and intervention in international conflicts. However, few of them look at foreign politics' influence on their national media into international conflict reports. This paper aimed to seek the influence of foreign politics on international media conflict reports. Specifically, the research looks at the direct effect of international media on conflict escalation; and the indirect effect of international media on conflict escalation through the mediation of foreign policy. The evidence of the geopolitical conflict between Israel and Palestine was used in this study, and the data were collected on a sample of 251 media practitioners operating in Israel and Palestine through an online survey. The finding revealed that the relationship between international media and conflict escalation is nonsignificant; however, the study findings show that the mediator variable "foreign politics" has a positive and significant influence on international media conflict reports. Additionally, the findings revealed that online journalism was the most used; 68.5% of the study sample; Al Jazeera was the most used among the international media, 43.4% of the study sample. Thus, the study concludes that the international media online journalism conflict report is propaganda of foreign politics, and the present and future relationship between Israel and Palestine can be shaped by Al Jazeera through its online journalism.

Keywords: International media · Foreign politics · Conflict · Online journalism

1 Introduction

With the rapid advancement of Science and Technology in the 21st century, the media's role is omnipresent for all positive and negative geographical location changes. However, it depends on how media functions in its duties and responsibilities in such a situation. Media has its potentiality either to affect any social development or to get affected by social change factors. For all types of public opinion, which impact mass media in any crisis regarding media coverage of the crisis, one must reflect how mass media can influence conflict resolution. Media has a potential role in conflict prevention, conflict management, and post-conflict reconstruction.

Harry S. Truman once said, "You can never get all the facts from just one newspaper, and unless you have all the facts, you cannot make a proper judgment about what is going on" this statement reflects the need for free access to unbiased information. Not giving people the possibility of political participation and not allowing them to express themselves freely is a significant cause of conflict. On the one hand, free, independent, and pluralistic media provide a platform for debate and different opinions. On the other hand, media can be misused for propaganda purposes, incite hatred, spread rumors, and artificially create tensions (Wolfsfeld 2004). The transmission of ideas is also not limited to conventional media such as newspapers, T.V., or radio. Arguably, the traditional media takes primacy in this. However, new technologies, the internet, and digital content should also be considered in this context (Brzykcy et al. 2007).

Additionally, Since the emergence of international media conflict correspondence, each conflict has seen as a part of innovation in the international media sphere: mobilization of entire nations through the press and censored orders (World War I), the emergence of radio and cinema to mobilize and ensure mass propaganda (World War Two), use of more sources the power of mobile video for television and an increasing number of international journalists sent to the theater of operations (Vietnam War), use of live audiovisual communication tools and the continuous appearance of world news channels with CNN (1991 Gulf War), a global media landscape, with competition between multiple channels 24-h news, cutting through various sensibilities in the conflict (the last wars in Afghanistan and Iraq). This marked evolution of the international media landscape during the twentieth century, with four main stages, has serious consequences on public perceptions of the reality of the destruction of conflict and the legitimacy of certain acts of the conflict.

While many studies have focused on the international media's potential to support democracy efforts and build sustainable peace, no similar effort has been given to analyze the role international media can play in conflict escalation. Nor has the international media's capacity to incite conflict been sufficiently analyzed, and the lessons learned. Thus, this paper aimed to investigate the role of the international media in conflict resolution using the evidence of Israeli – Palestinian geopolitical conflict; the study seeks to investigate that the media can effectively be used to fuel conflict or incite conflict.

2 Previous Research

To objectively understand the nature and the role of international media in fueling conflict or inciting violence, it is important to understand the various ways through which media influence conflict and conflict management. Boyd-Barrett et al. (2002) argued that most scholars and researchers have concentrated on media's role in economic, social, and political issues affecting states with little attention given to conflicts. Furthermore, media impact on conflict management is an emerging area understudied due to the lack of multidisciplinary models and concepts that would view the media's role in conflict escalating.

The general statistic overview of armed political conflicts provides a basic understanding of the situation today regarding destruction, loss of human lives, and suffering.

Several scholars have insisted that globalization has led to important qualitative changes in violent conflict's purposes and dynamics. Some, such as Sabaratnam (2011) argue that it is the revolution in information technology during the 1980s and 1990s that has led to a particular type of globalization, which in turn, has led to the need for a redefinition of what we think of as media and conflict.

Even though the international media can give us the intensity of the violence, where they are fought, why, how, and who does the fighting, the biggest problem of international media influence on people, ultimately determining conflict direction, most violent conflicts are asymmetric character, most of these take place within state borders, what is important to point out, particularly with the international media's role, is winning the "hearts and minds." Because a state is almost always militarily superior, non-state actors are more dependent on psychological warfare, which entails influencing a population's attitudes and perceptions through the media (Bratic 2008). Therefore, the international media dimension has become increasingly important, and it is no coincidence that the international media role emerged and has been increasing in importance since the end of the Cold War.

Unfortunately, the international media has a very complex role taken for granted by political decision-makers and the military. Statements claiming the international media's impressive effects are often heard from decision-makers. Political practitioners, and even researchers, most often assume the effect of international media in political conflicts. An example of the extent is reflected in a 1995 survey, in which 64% of American military officers still believed that media had the prime responsibility for ruining the war effort in Vietnam (Gilboa 2003). In light of this, it is surprising, and perhaps even alarming, that relatively little research and resources have been allocated to improve the understanding of the international media's role in armed conflicts and democratizing states (Gilboa 2003). In such a situation, the international media could play an invisible role in dividing the groups in society in terms of social status. The discrimination of the marginalized, ruled by the political elite, could provide a suitable ground for media to create and further both conflict facilitating and triggering factors using 'oppositional metaphors' ('us' vs. 'them' (Gunther et al. 2002). (Rieffel 2005, p. 107) added that armed conflict is undoubtedly a highly preferred field of study for assessing international media's role in our society. However, this indirect influence of international media on conflict has not been properly brought out.

Conflict, therefore, became an international media event in which foreign government and their military use to impose the information on their will (Rieffel 2005, p. 108). Rieffel (2005) added that control of the source, content censorship, and pressure on conflict journalists to direct their comments were common practices of France during the two world conflicts (Indochina and Algeria). Robinet and Gaboreau (2013) in a study on the dissemination of information by the French media about the conflicts that occurred in French-speaking countries in Africa between 1994 and 2008, examined the relationship between self-building journalists, the French government, and military leaders during the conflict. The study was grounded on ten French editors' corpus during five phases of intensification of media coverage in Rwanda (1994), Congo (1996/1997), Ivory Coast (2002/2003 and November 2004), in Chad (2008) and a dozen interviews with journalists, editors, leading reporters, and conflict photographers. Robinet describes what he calls

"co-production information" between these three entities. This study conclusively shows that, whereas in times of crisis, the intensification of media coverage is often in line with the dramatization and the increasing role of France in the context of information production, which is marked by a strong porosity from media discourse to discourse generated by the French government and military officials (F. Robinet 2013, p. 96).

Several scholars and researchers aimed at the manipulation of international media conflict report by the foreign government during periods of conflict, such as Chomsky and McChesney (2004); Rieffel (2005); Halimi et al. (2014); Ukka and Kombate (2019); Sriram and Herman (2009). Among them, Chomsky and McChesney (2004, p. 35) studied the media's role before the American military intervention in Vietnam and Iraq, denouncing American propaganda and media manipulation aimed at forcing the population to side with military intervention abroad. Alleg (2006, p. 7) also deplore the inconsistency of the mainstream media, which never ceases to justify Western intervention, then discuss errors made in the news before starting all over again while bragging about avoiding mistakes. International media ownership and political power over the media (Gingras 2012), are the two main reasons identified by Alleg (2006) why "the media have destroyed public information" in dealing with conflicts around the world in recent decades. The consistency of the position taken by most French media with its government during the conflict in the Gulf in 1991, in Serbia in 1999, in Afghanistan in 2001, and Iraq in 2003 is a perfect illustration of this situation.

This situation is no longer the only prerogative of the Western media such as BBC, CNN, France24 if one relies on the criticism voiced by Bogui and Agbobli (2017) of the hugely popular Qatar international channel Al Jazeera. In his work during what was then called the "Arab Spring," he narrows his interest in Al Jazeera's role in Qatari diplomacy, which he presents as the secular arm of United States interests in the Arab world. Al Jazeera was a powerful propaganda tool in Qatar's service to serve American interests and occupy advantageous diplomatic positions at the international level. According to this author, Al Jazeera was using images sent by citizens of conflicting countries in the Arab world to manipulate Arab and international public opinion. Several authors such as Chomsky and McChesney (2004), Alleg (2006), DiMaggio (2009) also condemn the selective sensitivity shown by the international media during periods of conflict, which most often coincides with the political will of the political elites or government of the countries in which they belong. From this, complaints about so-called crimes against humanity are often biased with varying degrees of violence, depending on the relationship between the existing regime or warring parties and major powers.

Having established the relationship between these factors such as conflict, international media, and foreign government's influence on international media conflict report, we deducted the following research hypothesis grounded on the literature and the facts in Israel and Palestine geopolitical conflict.

Hypothesis1: International media intervention in the Israel Palestine conflict positively and significantly relates to conflict escalating.

Hypothesis 2: International media intervention into Israel Palestine conflict positively and significantly relates to their national government's position.

Hypothesis 3: The influence of foreign government on international media conflict reports has a positive and significant impact on conflict escalation.

3 Methodology and Materials

3.1 The Israeli-Palestinian Conflict as the Object of Study

The territory where the Israeli-Palestinian conflict occurs integrates the register of the "elsewhere," and the conflict is eminently territorial; the inadequacy of land for two peoples entails an important interweaving of the region are real or projected. In 1948, the United Nations decided the partition of Palestine between a Jewish state and an Arab state. If in 2008, the State of Israel celebrated its sixtieth birthday, the Arab State has not yet seen the day. Today, the international community unanimously supports the creation of a Palestinian state alongside Israel. The Gaza Strip territories and the West Bank account for 22 percent of Mandatory Palestine and constitute East Jerusalem; territories claimed by the Palestinians to create their future state. However, in the West Bank, the settlements and the wall's construction, both illegal and denounced by the international community, fragment the territory uniquely. More than 450,000 settlers are currently settled in this territory or East Jerusalem, and with the various expropriation policies pursued by the Israeli government, nearly 40% of the West Bank territory is annexed (OPT 2010). The wall, which began construction in 2002, is 709 km long and largely free of the 315 km of the green line - the 1949 armistice line. Since the implementation of the Oslo Accords, the territories of the Palestinians have been divided according to three distinct statuses (zone A, B, and C), and this division creates more than 200 "territorial confetti" in the West Bank (Hobfoll et al. 2012).

The Gaza Strip, under Hamas's control since June 2007, was declared a "hostile entity" by the Israeli government in September 2007. Since then, its 1.5 million inhabitants have been blockaded. The West Bank, for its part, remains administered by the Palestinian Authority; it is the first time in the history of the Palestinian national struggle that political dissensions are thus territorialized. In parallel, the "peace process" remains current. For the layman, this complexity can quickly be confusing. From the prevailing situation in the Middle East, individuals in the world receive information only through intermediaries formed by conversations, education, literature, and the media. It is a question of analyzing the mental representations of the Israeli-Palestinian conflict seen from international media. Although it is part of larger considerations, the Israeli-Palestinian conflict is apprehended in its territorial dimension.

3.2   Research Variables

According to Dewulf et al. (2009), an independent variable is used to explain or predict the dependent variable's outcome. However, an intervening variable can influence the relationship between the independent variables and the dependent variables. In this study, the independent variable is the media coverage approach and reporting of conflict situations; the dependent variable is the reaction on media reports regarding a conflict that would assume two outcomes, i.e., escalation or de-escalation; and the intervening variable is the foreign politic effect on media reports which ultimately determine the course of the conflict.

3.3   Sample Size and Instruments for Data Collection

The research data were collected on a sample of 251 media practitioners from both countries Israel and Palestine. And to gain the external and internal validities in our analysis regarding the impact of media, it was expected that the more the sample size of media practitioners in T.V., radio, and presses is, the greater chances of reducing any potential bias in their responses. As the study population, media practitioners' including Including presses, radios, television, online journal, and related choice is because they are deemed to have a deep and adequate knowledge of the topic raised in this study.

According to Bresnahan et al. (2002), questionnaires are useful for getting an in-depth understanding of the issues under investigation rather than measuring those issues. Kothari et al. (2009) added that questionnaires give respondents ample time to give well-thought answers; besides recommending complementary methods to reveal discrepancies in data collection, a single method cannot. This study uses an online survey questionnaire to collect the data. The first part of the questionnaire was designed to obtain respondents' personal information relating to their profile; the second section was designed to obtain participants' opinions on the issue raised in this study. However, a third section was added as an open question to enable participants to afford the researchers with additional information, which they felt would help the study identify any missing subject topics, which should be considered in this study. The results of the descriptives statistics of the control variables are attached in the appendix (Table A1: descriptive statistics of the control variable).

3.4   Findings

3.4.1   Participants Category of International Mass Media Use

Participants were asked to choose the international media name and the category of mass media use. The results show in Table 1 that the online journalism is the most use by Israel and Palestine international media user as the online journalism bear the highest number of users 172 out of 251 or 68.5% of the respondents.

Consequently, the study results show that online journalism is the main source of information on Israel and Palestine's conflicts. This is due to its availability at any time, ability to reach even the most remote corners in the world, low-cost transmission, and cheap acquisition compared to other media, thereby removing the barrier of illiteracy to broadcast news, information, or propaganda. The difference is that online journalism can be interactive and include multimedia elements such as video, audio, and photos, available at any time while T.V. and radio message is fleeting.

Table 1. Category of international media use

			Media			Total
			Online journalism	Radio	TV	
Media use	BBC	Count	12	2	1	15
		% of total	4.8%	0.8%	0.4%	6.0%
	CNN	Count	3	1	0	4
		% of total	1.2%	0.4%	0.0%	1.6%
	Al Jazeera	Count	109	40	13	162
		% of total	43.4%	15.9%	5.2%	64.5%
	China daily	Count	1	3	0	4
		% of total	0.4%	1.2%	0.0%	1.6%
	Others	Count	47	14	5	66
		% of total	18.7%	5.6%	2.0%	26.3%
Total		Count	172	60	19	251
		% of total	68.5%	23.9%	7.6%	100.0%

Source: data field 2020

3.5   Construct Reliability and Validity

Item construct is said to be reliable is the its statistics value is greater than 0.7. Thus, looking at the standardized factor loading on Fig. 1 show below, all the items included in the model present a standardized factor loading greater than 0.7. The study therefore concludes that all items use in this study are reliable.

In addition, an item is said to be valid if its standardized estimate is greater than 0.5. The results show on Fig. 1 that all the standardized estimates are greater than 0.5. Consequently, the study conclude that all item used in this study are valid. Moreover, the model fit indices such as GFI: .961 > .95; CFI: .965 > .095; AGFI: .962 > .90; and RMSEA: .73 < 0.8; which indicate a good fit Smith et al. (1998).
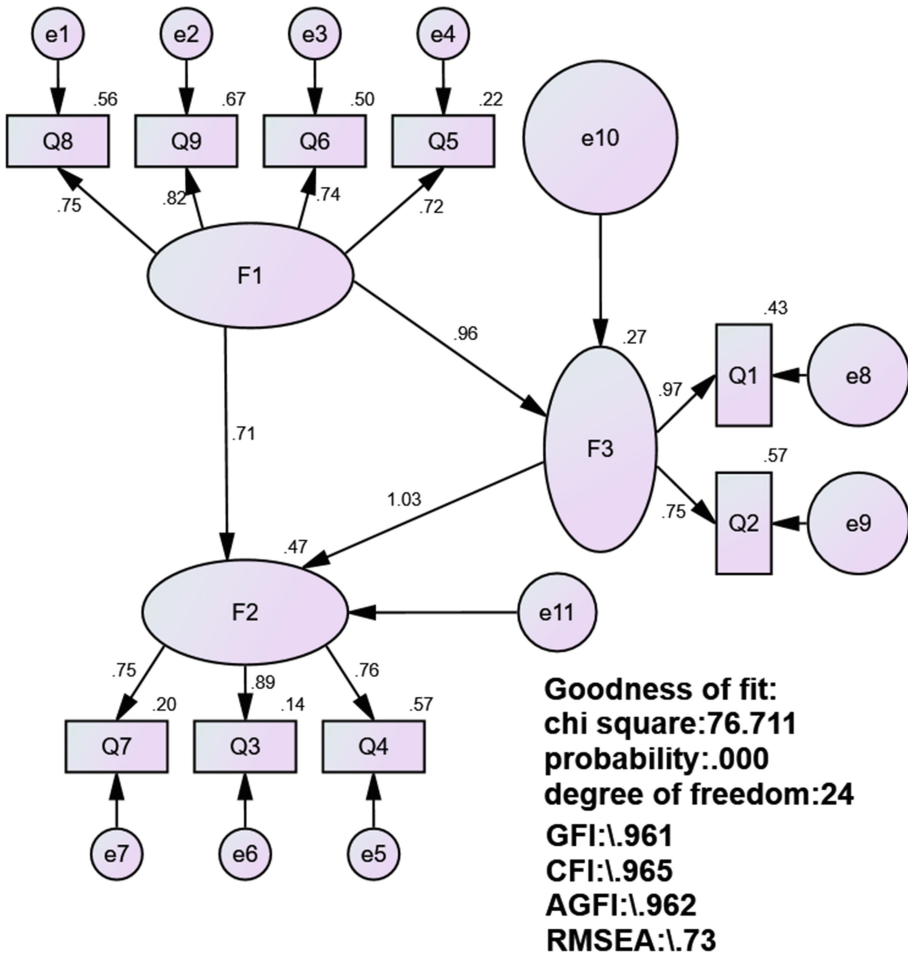
Fig. 1. Amos diagram pathway analysis with the standardized factor loading

3.6 Hypothesis Testing

A null hypothesis is said to be rejected if the critical ratio (C.R.) of the estimate defines the relationship between the two variables concerned is greater than 1.96; and if the standardized regression weight is significant at a p-value of 5% two-tailed. The results present in Table 2 below show that the critical ratio of the estimate that defines the relationship between international media (F1) and conflict (F2) is C.R.: $1.12 < 1.96$. Additionally, the standardized regression weight of the relationship between international media (F1) and conflict (F2) shown in Table A2 in the appendix is β_1: 0.252 is nonsignificant at p: $0.054 > 0.05$ at two-tailed. Consequently, the study concludes that the null hypothesis of hypothesis one, "*International media intervention in the Israel Palestine conflict have a nonsignificant relationship with conflict escalating*", is accepted, and the alternative

hypothesis "*International media intervention in the Israel Palestine conflict significantly associates to conflict escalating*" is rejected.

The results present in Table 2 below show that the critical ratio of the estimate that defines the relationship between international media (F1) and foreign politics (F3) is C.R.: 4.875 > 1.96. Additionally, the standardized regression weight of the relationship between international media (F1) and foreign politics (F3) shown in Table A2 in the appendix is β_2: 0.517 and significant at p < 5% two-tailed. Consequently, the study concludes that the null hypothesis of hypothesis two, "*International media intervention into Israel Palestine conflict is independent to their national government's position,*" is rejected, and the alternative hypothesis "*International media intervention into Israel Palestine conflict positively and significantly relates to their national government's position*" is accepted.

The results present in Table 2 below show that the critical ratio of the estimate that defines the relationship between foreign politics (F3) and conflict (F2) is C.R.: 4.212 > 1.96. Additionally, the standardized regression weight of the relationship between foreign politics (F3) and conflict (F2) shown in Table A2 in the appendix is β_3: 0.523 and significant at p < 5% two-tailed. Consequently, the study concludes that the null hypothesis of hypothesis two, "*The influence of foreign government on international media conflict reports has a positive and significant impact on conflict de-escalation,*" is rejected, and the alternative hypothesis "*The influence of foreign government on international media conflict reports has a positive and significant impact on conflict escalation*" is accepted.

Table 2. Regression weights

			Estimate	S.E	C.R	P	Label
F3	<---	F1	0.387	0.079	4.875	***	par_7
F2	<---	F3	0.641	0.152	4.212	***	par_8
F2	<---	F1	0.231	0.109	2.12	0.054	par_9

*** significant at 1%

4   Discussion and Conclusion

The study finding shows that among the 251 participants, 162 or 64.5% use Al Jazeera. The research concluded that Qatar authorities, with the other powerful countries, influence the Al Jazeera report in their intervention of the Israel and Palestine conflict. This is not the first research that concluded on Al Jazeera's role in conflict management as relying on the criticism made by Grenfell (2013) for the highly popular Qatari international channel Al Jazeera for its actions, he is called "The Arab Spring" Button. This writer is interested in the role Al Jazeera plays in Qatar diplomacy, which he presents as a secular arm of U.S. interests in the Arab world. This media will be a powerful propaganda instrument to serve Qatar's emir, who will use it to serve American interests

and occupy favorable diplomatic positions at the international level. According to this writer, Al Jazeera uses images sent to him by citizens in the conflict in the Arab world to manipulate Arab and international public opinion.

Moreover, the finding revealed that the relationship between international media and conflict escalation is nonsignificant. However, this relationship is positively and significantly influenced by the mediation effect of the variable foreign politics. These findings come in support of Archambault et al. (2009), who argued that media ownership and political media influence are the two main reasons identified by Halimi et al. (2014) to explain why "the media has overwritten public information" in dealing with various World conflicts over the last few decades. Several researchers and scholar interested in conflict management studies also argued that international media report in a conflict is the manipulation of the opinion by the governments of the so-called democratic countries during the periods of conflict with the complicity of the media (Halimi et al. 2014; R. W. McChesney and Scott 2004). Besides, Scott and McChesney (2004) denounce the American propaganda and manipulations of the media that aim to "force the population to take sides in favor of military interventions abroad." The consistency of the positions taken by most French media with those of their government during the Gulf conflict in 1991, in Serbia in 1999, in Afghanistan in 2001, and in Iraq in 2003 illustrates this situation perfectly. According to these writers, we can see that the only time the French government found itself in conflict with the United States (during the second Gulf War in 2003), the French media also had because most of them had denounced the unjust war. Besides, Gross and Thompson (2007) criticized the international media for not adequately covering the emerging conflict situation in Rwanda, resulting in the lack of immediate intervention by the international community. He argues that a more comprehensive and objective report on the Rwandan conflict could have prevented the 1994 genocide.

Some authors such as Scott and McChesney (2004), Halimi et al. (2014), and Klaehn and Mullen (2010) condemned the selective sensitivity displayed by the international media during the period of conflict, which most often coincided with the political leaders of the countries of origin. However, information control is still a major problem today in times of conflict or crisis, and the media Al Jazeera has long occupied the monopoly of information in Israel and Palestine, plays a major role in this conflict management. Yet, its control becomes an important issue for political forces. While it could greatly aid in conflict management and peacebuilding, its strength is limited because of foreign political leaders' influence in their report.

The main function of international media in cultural, ideological, or political conflicts from different eras reflects the contradiction among media scholars and researchers. The question of their true power goes beyond their simple ability to convince (to choose, to buy, to act) that define their position in our society. Whether it's their role in changing mentality or regulating the economic and political system or its function in a crisis, from real warfare to the destabilization of a community, media have a multi-faceted "force." As in the media landscape, the international media precedes the conflict report and even encourages a conflict communication mode, and they determine the target audience or what they want to see. The general principles of journalists are: "If he bleeds, he will lead." This means that violent conflict is the headline and not the news of dialogue or

cross-cultural understanding. The media focuses primarily on conflict and does not build peace. The tendency to conceal conflict and violence has changed reality and has caused many people to think that conflict is widespread and peace is not normal. This is the result of the terms of competition between the media, in particular the example in the management of the Iraq crisis by the Bush administration, it is about: communicating to convince the world, "friends" and "enemies," on its desire to arrive on the day and to declare war on Iraq (Habermas 2006).

There is no doubt that the Bush administration's communication during the Iraq crisis was already in the "war communication." Of course, the crisis is a natural tropism for the media. From experience, it translates into an increase in the audience while questionable modes of communication such as rumors, counterfeiting, or ideological poisoning resurface, harming professionals' activities—journalists and those of the media responsible for public communication, including the authorities. In the recent conflicts in Bosnia, Rwanda, Serbia, Kosovo, Ivory Coast, Iraq, and elsewhere, we have seen how "hatred" can be a driving force for communication strategies and presenting oneself under a good form or good tone (Pearce and Kendzior 2012).

In line with previous studies such as Johnson and Fahmy (2008), Ukka and Kombate (2019), and Elena (2016), international media such as CNN, BBC, and Al Jazeera intervene in conflict management according to various factors, including national interests, lack of certainty policies; this study concluded that the current and future Israeli-Palestinian conflict and peacebuilding could be frame by Al Jazeera (more than 64.5% of international media users use Al Jazeera). These findings support the finding of (Seib 2008). He concluded that the mind-to-heart fight in the Middle East did not occur in Baghdad, but events and news from Al Jazeera concluded that China's future was not developed by communist bureaucrat's blogger works quietly (Seib 2008). The latest al-Qaeda attack will occur in cells worldwide connected via the internet, not Osama bin Laden's funeral. Al Jazeera's intervention in the Israeli-Palestinian conflict reflects its impact on foreign policy and pressure on those involved in the conflict to resolve the issue.

This study's findings contribute to the literature's growth in media studies, particularly in international media tied with their political home will. It is not surprising that this study's results indicate that the relationship between the international media and conflicts is nonsignificant. This finding also highlights that the escalating conflicts cannot be explained by international media reports free of political influence. Because the stories evoked can be contradicted between media and conflict researchers.

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Predicted Role of Integrated Marketing Communication on Malaysian SME'S Business Performance

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Abstract. Volatile market conditions and resultant market fluctuations have increased the demand for SMEs to adopt a strong brand related marketing communications activity with the support of integrated marketing communication (IMC) elements. IMC elements are critical in terms of building a strong strategic presence, which brings about an improvement in the business performance of SMEs. To examine the relationship of IMC elements to business performance, a quantitative descriptive study design was followed. 384 SME entrepreneurs' responses from Klang Valley, Selangor, Malaysia were analyzed using PLS-SEM. The results indicate that all five elements of IMC performance have a direct and noteworthy effect on enhancing business performance. Moreover, a moderation result reflects a partial effect of market orientation between IMC elements and business performance. This paper presents IMC and market orientation as critical elements of the SME's business performance strategy. This study would provide significant information to marketers and Chief Marketing Officers of SME's in-service sector to adopt these vital managerial processes to enhance business performance.

Keywords: Integrated marketing communication · Market orientation · Service industry · SME · Business performance

1   Introduction

Research on Integrated Marketing Management (IMC) has been extensively researched by scholars, and it gained popularity among researchers in the early 1990's in light of the changes in the business landscape world-wide due to the impact of globalization [1]. Through their research on IMC, the scholars agree that IMC is a critical strategy that aids in the development of strategic branding and establishing strong branding for firms [2].

Research has indicated that adoption of IMC is critical among SMEs due to the current business environment. SMEs are exposed to global competitors and even with efforts from the government to support the SMEs in their respective nations, adoption of key management practices such as IMC is deemed crucial to ensure the long-term survival of SMEs [3]. This research was undertaken to analyses the significance of IMC and market orientation, with a special focus on examining its direct and indirect relationship with business performance.

2 Literature Review

2.1 IMC- Conceptual Definitions

2.1.1 Organizational Infrastructure (OI)

"Organizational infrastructure" refers to strong association within all cross functional within a firm that influences the brand, internal marketing, and co-ordination of various IMC tools [4].

2.1.2 Interactivity (I)

"Interactivity" which basically involves processes that associate customers to a firm and its brand. These processes included customer feedback management, customer relationship management (CRM), access to marketplace and maintaining balance in utilization of mass or target media [4].

2.1.3 Mission Marketing (MM)

"Mission marketing" which involves the mission statement which drives the organization activities with impact aim of achieving firm goals and objectives. These goals and objectives are achieved by driving shareholder value, customer value with development of distinct corporate culture which is imbedded in marketing communication activities and processes of the firm [4].

2.1.4 Strategic Consistency (SC)

"Strategic Consistency" which includes "the co-ordination effort all communication messages with the relevant marketing mix elements that develop and create strategic brand position (brand equity) in the minds of customers i.e., both internal and external customers." [4].

2.1.5 Planning and Evaluation (PE)

"Planning And Evaluation" related is the "consideration of all key target audiences, the creation of profitable relationships, the strategic integration of media and messages and the adoption of a zero-based approach to employing various IMC tools" [4].

3   Literature Review and Hypothesis Development

3.1   IMC Business Performance

A cross channel operation, which is fundamental to the sales growth needs a collaborative and interactive technology applications. They look up products online, go to the store for information, and buy at the store, online, or at a call center [5]. In stores and elsewhere, mobile apps give customers easy access to expert and peer reviews and user-generated content that previously only online channels provided such functionality [6]. Several studies have established there is association between IMC Performance interactivity and Business Performance [7, 8, 9]. On the other hand, [10] questioned IMC's theoretical vigor as well as its real implication for marketing and promotion thought and practice to gauge the influence of various IMC concepts. Therefore, the following hypothesis is proposed:

H1: *Overall Integrating Marketing Communication elements influence Business Performance of SMEs in retail trade.*

3.2   Organisational Structure (OI) and Business Performance

OI element in IMC Performance is vital in cross-functional management which increases primary capabilities and enhance a firm in working with external agencies. [11] established that a firm is unable to integrate externally without developing internal integration, which is crucial in IMC implementation, will impact overall performance. While some researchers have reported positive relationship [12], some other investigators have reported negative relationship organizational structure and performance [13]. Seldom such investigations have made in the SME context. Therefore, the following hypothesis is proposed:

H1a: *Integrating Marketing Communication element Organisational Structure Influence Business Performance of SMEs in retail trade.*

3.3   Interactivity (I) and Business Performance

"Interactivity" is a key component of IMC performance, pretends to set a constant dialogue between the organization and its constituencies, is contributing towards strategic branding, due to its ability in developing "relationship" between a firm's brand and customer satisfaction, facilitating better recall of the firm's brand and in turn results increase in turnover. Several studies have observed the association among IMC and sales: sales promotion and sales performance [14]. Nevertheless, such observations are less investigated to in SMEs. Therefore, the following hypothesis is proposed:

H1b: *Integrating Marketing Communication Elements Interactivity Influence Business Performance of SMEs in retail trade.*

3.4   Mission Marketing (MM) and Business Performance

Marketing is attained by a systematic practice of marketing design, beginning from the determination of corporate mission, which turns as a standard for the entire organization. [15] reflected in his research that the higher "mission marketing" efforts in a firm will allow higher integration in terms of IMC performance which in turn develops strong brands for a firm resulting in increase of business performance. Since mission marketing and its impact on SMEs performance is not often assessed in the SME context, a study needs to be done. Therefore, the following hypotheses are advanced:

H1c: *Integrating Marketing Communication Elements Mission marketing influence the Business Performance of SMEs in retail trade.*

3.5   Strategic Consistency (SC) and Business Performance

"Strategic Consistency" develop a key advantage of IMC Performance in terms of its contribution to marketing strategy and corporate branding in terms of various marketing efforts for example in terms Internet marketing and other marketing efforts which results for higher revenue for firms [16] [17]. This study assumes that there may be performance benefits a firm can develop from a certain level of strategic consistency with other aspects of its strategic posture. Therefore, the following hypotheses are advanced:

H1d: *Integrating Marketing Communication Element, Strategic Consistency influence the Business Performance of SMEs in retail trade.*

3.6   Planning and Evaluation (PE) and Business Performance

"Planning and Evaluation" element of IMC performance has a strong influence on strategic positioning of products as development of lasting product brand can be achieved by delivering value in terms of price, service and in short delivery a brand package etc. which far more superior than its competitors and "planning and evaluation" element in the IMC supports to achieve this objective by leading towards better sales and market share for firms [18]. Strategic planning is essential to ensure sustained respectable performance, and only organizations that are practicing some form of strategic planning survive [19]. Therefore, the following hypothesis is proposed:

H1e: *Integrating Marketing Communication Elements, Planning and Evaluation influence the Business Performance of SMEs in retail trade.*

3.7   Market Orientation and Business Performance

Market orientation is a commercial viewpoint that puts customers at the center of everything a company does. Market-driven companies are trying to understand the expressed potential customer desires and create great solutions to meet those needs [20]. The idea of this study is based on the scientific finding that market orientation affects performance not only directly but indirectly [21]. Virtually no studies attempted to confirm the market orientation model and its scale in an SME dominated economy. The direct impact

of market orientation on business success through employee and customer satisfaction. Therefore, the following hypotheses are advanced:

H2: *Firms perceived Market Orientation influence the Business Performance of SMEs in retail trade.*

3.8 Moderation Effect of Market Orientation on Overall IMC Business Performance

Organizations, which are engaged in ensuring all sort of customer experience and delight will lead to greater performance. Every market-oriented firm gathers all sorts of information about the products and services, and disseminate those contents, which the competitors cannot offer at all. Although studies established the association among market orientation and business performance [22], its relationship is less evaluated with IMC elements in the SME context, as moderator. Therefore, the following hypothesis is proposed:

H3: *Firms perceived Market Orientation moderates the influence the overall IMC elements in its relationship with Business Performance of SMEs retail trade.*

4   Research Methodology

4.1   Research Designs and Sampling

Research action plan is drawn in the form of research design which ensure adequate control over the variables which may restrict the validity of the observations [68]. Current research applied quantitative research design to achieve the research objectives. From the directory of SME Corporation Malaysia, it is observed that Selangor state (19.5%) having more SMEs and they are belonging to service sector. To arrive at the sample frame, the study considered cluster sampling, over random sampling. The study further considered quantitative, descriptive study design to approach each small-scale business owners, covering all districts in the Klang Valley, region of Selangor. After cluster sampling the study followed purposive sampling to identify appropriate sample size of SME business owners. The research considered PLS-SEM to analyze the data, to avoid issues related to normal distribution of data and sample size. The suggested sample size is 100–400 sample or 10 times the number of observed factors [29]. Over-all 384 SME owners were purposely selected and based on recommendation from past research scholars [30, 31]. Further the study gave due consideration to [32] table, which represents a stable sample size of 384 for less than 1 million SMEs.

4.2   Instruments and Validity and Reliability Analysis

All measurement items (48 items) have achieved stipulated Cronbach alpha level following the recommended level of 0.60 [23] (Table 1).

<div align="center">**Table 1.** Measurement of constructs</div>

No	Instruments	No of Items	Scale (Likert)	Reliability	Authors
1	Integrated marketing communication	20	7 point	.87	[24]
2	Market orientation	22	5 point	.84	[25]
3	Business performance	6	5 point	.85	[26]

4.3 Factor Analysis Based on Pilot Study

Factor analysis is used to for dropping dimensionality [27]. Exploratory factor analysis is applied once an investigator needs to determine the number of factors influencing variables and to examine which factors 'goes together' [28]. Following table provides the details of EFA (Table 2).

<div align="center">**Table 2.** Factor analysis based on pilot study</div>

	Code	1(IMC)	2(MO)	3(BP)
Integrated Marketing Communication (IMC)	I-MC - 01	0.71		
	I-MC - 02	0.72		
	I-MC - 03	0.62		
	I-MC - 04	0.70		
	I-MC - 05	0.66		
	I-MC - 06	0.70		
	I-MC - 07	0.72		
	I-MC - 08	0.66		
	I-MC - 09	0.67		
	I-MC - 10	0.62		
	I-MC - 11	0.63		
	I-MC - 12	0.72		
	I-MC - 13	0.73		
	I-MC - 14	0.71		
	I-MC - 15	0.73		
	I-MC - 16	0.64		
	I-MC - 17	0.59		
	I-MC - 18	0.58		

<div align="right">(*continued*)</div>

Table 2. (*continued*)

	Code	1(IMC)	2(MO)	3(BP)
	I-MC - 19	0.69		
	I-MC - 20	0.60		
Market Orientation (MO)	M-O 01		0.61	
	M-O 02		0.64	
	M-O 03		0.67	
	M-O 04		0.61	
	M-O 05		0.73	
	M-O 06		0.74	
	M-O 07		0.69	
	M-O 08		0.68	
	M-O 09		0.66	
	M-O 10		0.62	
	M-O 11		0.67	
	M-O 12		0.62	
	M-O 13		0.68	
	M-O 14		0.67	
	M-O 15		0.69	
	M-O 16		0.70	
	M-O 17		0.71	
	M-O 18		0.68	
	M-O 19		0.70	
	M-O 20		0.59	
	M-O 21		0.60	
	M-O 22		0.59	
Business Performance (BP)	B-P 1			0.71
	B-P 2			0.75
	B-P 3			0.70
	B-P 4			0.72
	B-P 5			0.68
	B-P 6			0.69

Kaiser-Meyer-Olkin Measure of Sampling Adequacy $= 0.903$

Approx. Chi-Square $= 1351.7$

DF $= 103$

Sig. $= 0.000$

Variance $= 70.993$

5   Findings
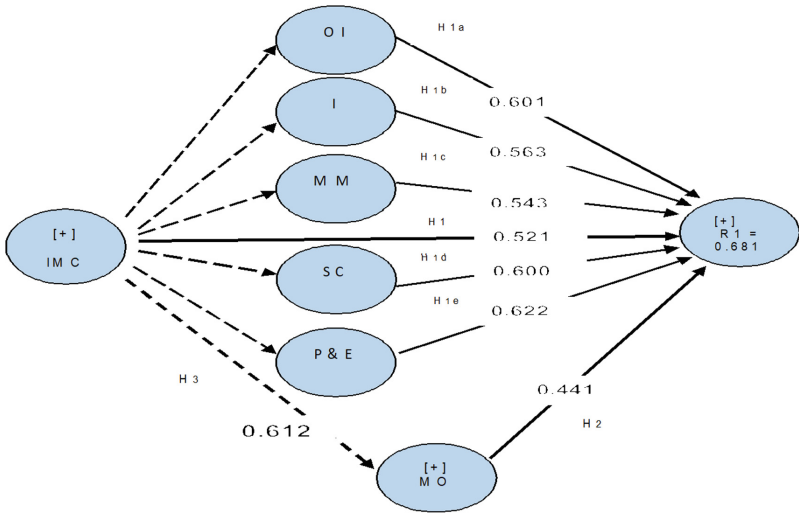
Fig. 1. Theoretical Framework over all direct effect

The result of 5000 bootstrap sample on 378 cases have made, to measure the importance of path coefficients [33] on all hypothesis generated. In addition to direct effect, the moderation effects of market orientation have also measured. Figure 1 demonstrates the estimation of the complete structural model. The effect of each construct of the exogenous factor is denoted by the standardized beta values. Any deviation in the dependent factor is explicated by one or more predictor factors, with the representation of the R square. It is proposed by [34] that the R^2 values of 0.67, 0.33, and 0.19 in PLS-SEM can be reflected as considerable, reasonable, and feeble, correspondingly.

5.1   Direct Effect

To assess the extrapolative significance of the research model, a cross authenticated redundancy measure (Q^2) was applied into [35–40]. According to [41] a research model with Q^2 statistic (s) larger than zero is reflected to have predictive significance. Moreover, a research model with greater positive Q^2 values proposes more predictive applicability. The Table 3 and 4 clearly specifies the prognostic bearing of the research frame produced in this investigation. This research has modeled 6 hypotheses comprising the direct and indirect investigation. The direct examination was associated to 7 hypotheses. The composite model grounded on overall analysis indicates that all hypotheses incorporated into the research model is well confirmed the causation.

Table 3. Hypothetical relationship – direct effect

Hypothetical relationship (direct effect)	Path coefficient	Absolute t statistic value	Value of R^2	Value of Q2
IMC-BP	0.521***	23.123	0.681	0.603
OI→BP	0.601***	19.201	0.676	0.600
I→BP	0.563***	18.821	0.632	0.599
MM→BP	0.543***	18.910	0.630	0.583
SC→BP	0.600***	19.100	0.671	0.569
P&E→BP	0.622***	20.346	0.629	0.601
MO→BP	0.441***	18.231	0.601	0.560

5.2 Indirect Effect
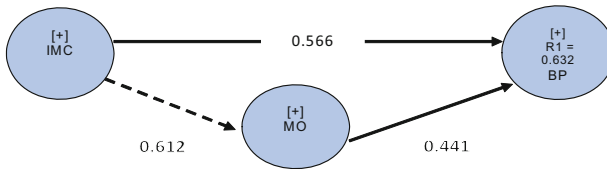
Fig. 2. Theoretical framework indirect effect

Table 4. Hypothetical relationship – moderation effect

Hypothetical Relationship (Direct Effect)	Path Coefficient	Absolute t statistic value	Value of R^2	Value of Q^2
H4: IMC → MO → BP			0.644	0.599
IMC→MO	0.612***	22.113	0.681	0.623
MO→BP	0.441***	18.231	0.601	0.560
IMC-BP	0.566***	22.123	0.681	0.603
Indirect effect (a)	0.612 x 0.441 =0.269			
Direct effect (b)	0.566***			
Total effect (a+ b) = C	0.269 + 0.566 =0.835			
VAF = a/c	0.269/0.835 = .328*100 = 32%			
Direct Effect PLB → PS without Moderation	0.521***			

Note: ***p value is significant at 1% level of significant

The indirect effect of IMC elements (i.e., 0.269, p <0.01) is also positive and significant (Table 4) with the incorporation of market orientation as a moderator between IMC elements and Business Performance. Interestingly, the relationship between Integrated

Marketing elements and Business Performance reduced but remains significant with the path coefficient of 0.566, p <0.01) with a Δ of 0.266 (see Fig. 2; β 0.835). To end with, Market Orientation association also delivers the VAF level of 32% which is satisfactory and substantial as guided by [42]. Afterwards, the market orientation designates that, in terms of moderation also keeps a substantial amount of the total effect originate from the indirect path. Furthermore, after running the blindfolding procedure [43] the Q^2 value of project teams' communication and project success factors (0.623, 0.560) are shown respectively, these are also well above zero, confirming the predictive relevance of this path model. Hence, market orientation partially mediates the relationship between IMC elements and Business Performance, which provides empirical substantiation for study hypothesis H3.

6   Discussion and Implications

The current investigation has recognized a strong and positive relationship between organisational infrastructure and business performance. One of the advantages of the IMC application is a reduction in decision-making times and sales cycles. Business operations must keep up with all of the changes that occur both internally and externally to the organization, and market interaction is critical. SME should implement communication activities that allow them to directly interact with their prospective customers and clients via personalized digital messages, allowing them to obtain better feedback, ultimately leading to improved business performance. The organization's mission statement will become a strategic tool for firms in clarifying their respective business stands and purposes for all business stakeholders. SMEs that carry out better marketing campaigns, thus reaping better business opportunities in the market. It develops a closer relationship with the customers of the firm with the brands and will bring about an increase in sales performance. Evidence indicates that organizational strategy, which involves the process of strategic thinking, planning, monitoring, evaluation, and structure issues, is becoming more important to the firm as it grows in size and in entering as well as establishing its presence in the market. Strategic consistency should be established at the functional, business, and corporate levels to integrate the strategic decisions and show its consistency in every decision at various levels. Planning and evaluation have a strong hold in floating products and services in the market as well as retailing the brand.

Best practices in making use of the best communication channels in network planning, derive from coherent organisational support that optimizes the performance. The pre-requisite of any organisation, in this context is to make a complete examination of the desires and requirements of the consumers and the actions commenced by opponents in the markets. Such a scenario will assist industries in better positioning themselves to plan communication policies that perform efficiently and ensure long-term sustainability [44].

Several studies in the past have established the relationship between market orientation and financial performance [45]. Several financial signs that include sales growth, ROI, and net profit margin as well as non-financial indicators like social performance, customer's delight, employee's delight, customer trustworthiness, customer profit, and market share [46]. All the direct and indirect hypotheses posed in the structural model

henceforth supported the association between IMC capabilities, market orientation, and business performance. Moderating assumption of this research also thus proved significant.

6.1 Practical Implications and Theoretical Implications

The result of the IMC Performance linkage to the market performance of SMEs highlighted that there is a positive relationship between IMC performance elements and IMC performance elements has a tremendous impact on senior management and business owners of SMEs in terms of managerial decision making and policies in terms of enhancement and establishment of IMC performance activities in SMEs. The SMEs' corporate image will be improved in the market because most customers would like to associate with leading firms in terms of communication. From a human resource management perspective, IMC capabilities will enhance the motivation level of workers to contribute their best to achieving their market targets. The strategic perspective of building organisational capabilities, integrating IMC capabilities is then needed to enhance the business and financial performance. Good IMC capabilities improve staff morale, especially those who undertake the responsibilities of interacting with suppliers, dealers, retailers, and customers, ensuring better efficiency and effectiveness in business conversion. Past research integrating RBV theory and elements of IMC capabilities with market orientation and business performance is less researched. The RBV [47–49] delivers a suitable context to scrutinize the possibility of IMC's influence on industry business performance. The results contribute to the application of theory, the advancement of the body of knowledge, and, finally, management decision making.

7 Conclusion, Limitations, and Future Scope of Study

Current research examined the relationship between IMC and business performance among SMEs, particularly retail traders, who account for 60% of SMEs in Malaysia's service sector. The study posed direct and indirect hypotheses by integrating the moderating variable of market orientation into its relation between IMC elements and business performance. All the hypotheses are well supported, proving the applicability of the positive findings in an SME context. Earlier adoption of integrating marketing communication elements adds value to the company's products and company equity. SME business leaders and managers should allocate better funds for integrated marketing communication that can result in better business development and performance.

The limitations of the study can be averted with in-depth qualitative research to get complimentary results, ensuring the triangulated reliability and validity of observations. Future studies also should consider samples from various locations of Malaysia to get more generalization of the findings. A multi-disciplinarity and mix mode research is also suggested to derive more practical output providing more practical implications to small business owners CEOs and CMOs of SMEs service sector.

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The Impact of Consumer Sensory Processing on Consumer Buying Behaviour: The Role of Sensory Congruence and Sensory Dominance

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Abstract. This conceptual review focuses on the importance of sensory processing in influencing consumer buying decisions. It gives an overview of sensory processing, along with the difference between sensory marketing and consumer sensory processing. In addition, it explores the relationship between the product sensory information and sensory evaluation. It provides information on the role of sensory information on sensory evaluation and consumer judgement. Moreover, the information on sensory congruence is provided to examine the multisensory congruence-effects on consumers' judgements.

Keywords: Sensory marketing · Consumer behavior · Sensory congruence

1 Introduction

This conceptual review focuses on the importance of sensory processing in influencing consumer buying decisions. It gives an overview of sensory processing, along with the difference between sensory marketing and consumer sensory processing. In addition, it explores the relationship between the product sensory information and sensory evaluation. It even provides information on the role of sensory information on sensory evaluation and consumer judgement. Moreover, the information on sensory congruence is provided to examine the multisensory congruence-effects on consumers' judgements.

The sections of the review are organised in a way that explains how sensory congruence and sensory dominance are shaped. Section sensory congruence discusses the impact of congruency versus conflict of multisensory information of products on consumer judgement. Congruency refers to the state or quality of agreeing. Multisensory semantic congruence helps to enhance product evaluation and haptic perception. Section sensory dominance covers how, in several situations in which multisensory product information is encountered by consumers, a certain type of sensory information (e.g., visual) can dominate another type of sensory information (e.g., tactile) while conducting a multisensory evaluation, compared to when multisensory information, are perceived as almost an equal relative importance. Multisensory information has an equal importance in conducting a multisensory evaluation. Finally, the conclusion section provides the overall findings of the study.

2   Sensory Congruence

Three main areas of sensory congruence are recognised in relation to consumer sensory processing. The first is semantic congruence concerning the semantic association between multisensory information of a product (Sect. 2.4.1). The second is the outcome of sensory congruence (Sect. 2.4.2). The third is the impact of individual differences on sensory congruence (Sect. 2.4.3). In sensory processing research, sensory congruence refers to the level of fit of the semantic associations between the characteristics of a stimulus. Semantic associations help to determine the sensory processing in the consumer buying behaviour.

Limited research sought to examine the multisensory congruence-effects on consumer judgements (e.g. Krishna and Morrin 2008). These studies agree on the finding that information obtained via sensory modalities both singly and via their interactions affects consumer evaluations and buying behaviour. Factors such as taste, smell, light, temperature, pressure and sound creates a long lasting impact in the minds of the consumers. These factors affect the buying decisions of the consumers.

Research in the 1980s recognises that, taste perception can be affected by more than the product's taste information. For instance, external variables, such as product shape and brand name, affect the taste perception. Yet, not until recently has sensory processing research shown that, for instance, an advertisement communicating multisensory information (visual and olfactory information) leads to improved taste perception, rather than one communicating only taste information, under the conditions of multisensory congruence or fit between multiple sensations. Similarly, research on audition (the sense of hearing), illustrates the impact of sound symbolism (the sound of the word affects the perception of the object it represents).

Many consumers make their buying decision based on sound produced from the product. For example, many products make different sounds, which determine their feature and change consumers buying decisions. The sound the food makes when bitten significantly influences taste perceptions for certain food items (e.g. potato chips, celery and crackers), influencing perceived freshness and quality. For example, when a brand name sounded congruent with expectations, they found brand evaluations to be positive. Just like, the sound of a brand name can result in certain product perceptions; language too can have its own associations. Krishna (2011), states that there are some "generalizable language-related associations in bilingual cultures that use English as the second language. Use of English in ads has come to suggest a social stereotype—a symbol of modernity, progress, sophistication and a cosmopolitan identity (e.g., in Japan, Korea, Germany, India) whereas the primary (or first) language is likely to have high levels of "belongingness" associations which connote a stronger sense of closeness and in-group associations" (p. 10).

Furthermore, scent affects a consumer's mind, influencing the actual behaviour. In this regard, three different factors of using scents have been suggested, which are the presence of a scent, its pleasantness and its fit with environmental and service elements (congruence). Congruity between scent and products enhances product evaluations; for instance, housecleaning products scented with lemon. Similarly, tactile perception is analysed by information perceived by another senses (i.e. visual evaluation), given that psychological research proposes that the perception of stimuli are must-sensorial determined and accordingly, this raises the question of how that premise is applied to consumer goods.

The congruence of impressions generated via visual and tactile evaluation shapes consumer reactions. Building on research in consumer psychology on multisensory information congruence, it is suggested that impressions inferred from package visuals and haptics, as well as the congruence of these impressions, will determine product evaluations and the overall efficacy of the product resulting from these evaluations (Krishna 2011). The elements of efficiency that have been considered in the latter study are aesthetic appeal (attractiveness) and price expectation. The higher is the integration of the stimuli, the higher is the congruence that follows. An opposite of sensory congruence is sensory conflict.

Sensory conflict, occurs when consumers express themselves; for instance, a consumer likes a product during a uni-sensory evaluation (e.g. visual evaluation), but dislikes it when using another sensory evaluation modality (e.g. tactile evaluation). For example, a consumer may get attracted towards a product based on a single factor like sound but the same consumer may change the decisions based on different factor like smell of the product. This means that the evaluative impressions developed through the sensory evaluation modalities (vision vs. touch) were incongruent. Congruence includes two elements; expectancy and relevancy. Expectancy refers to the information that conveys a direct message, whereas relevancy refers to an additional information that detracts from the theme of the message. Expectancy adds relevant information to a message to make it meaningful and useful for the study. On the other hand, relevancy distracts the attention of the reader from the message. Accordingly, the multisensory information of a product is affected by how congruent the segments of sensory information are.

3   Sensory Dominance

Sensory dominance explores several situations, in which multisensory product information is encountered by consumers, a certain type of sensory information (e.g., visual) can dominate another type of sensory information (e.g., tactile). In the area of consumer sensory processing, sensory dominance refers to "the relative importance of different sensory modalities for product experience" (Fenko, Schifferstein and Hekkert 2011, p. 34). The popular perception among consumer researchers holds that visual evaluation dominates the sensory experience, when visual and tactile evaluations are conducted simultaneously.

It is important to explain the way, in which sensory dominance works. Senses, such as smell, use more receptors and genes than vision does. Senses use the genes, which are inherent from other people like parents. The senses of people are mostly based upon their genes. Therefore, it appears that vision is not the most dominating sense as other senses also plays an important role in consumer's decision making process (Fenko, Schifferstein and Hekkert 2011). While the sense of smell uses many more receptors than vision, it appears that many of these receptors are no longer active. Although, the sense of smell was very important for humans in old era, modern humans have a relatively weak sense of smell.

However, research on sensory dominance provides conflicted results in terms of which sense dominates the other in product evaluation. Thus, based upon synthesising the earlier studies on sensory dominance, three determinants of sensory dominance are suggested in order to elucidate the situations in which sensory dominance occurs. For example, for some product categories, it is more important to use one sensory modality more than others. This is discussed in Sect. 2.5.1. However, sometimes one sensory modality is important in a certain stage (e.g., evaluation process) and becomes less important at another stage (e.g., after buying – during usage). Thus, the temporal (time-based) factor is essential in determining the sensory dominance (Sect. 2.5.2). In addition, the type of product sensory information plays a decisive role in the relative importance of sensory information and sensory evaluation modalities (Sect. 2.5.3). Finally, Sect. 2.5.4 provides information related to previous discussions and directions for future research on sensory dominance based on previous research's suggestions.

3.1   Future Research in Sensory Dominance and Sensory Congruence

It is important to provide a synthesis of previous sensory processing research. In context to this, Fig. 2 provides a detailed analysis of the study. In this synthesis, the propositions that are tested and confirmed are presented in a form of conceptual map (Fig. 8). When a product holds single/uni-sensory information (e.g., mostly based on visual information), consumers conduct a uni-sensory evaluation (e.g., visual evaluation only) in order to judge the product (P1). The outcome of this evaluation directly leads to a uni-sensory perception (e.g., visual perception – for example, a product perceived as high in newness or high in aesthetics) (P3). Under the condition of multisensory evaluation of multisensory information, two outcomes are processed at once. Accordingly, the level of congruence (high versus low) affects the overall multisensory perception (P6). For example, if the product is high in congruence, consumers will perceive the product as higher in quality (Elder, Ryan and Krishna 2010; study 2), higher in price, but less innovative. However, in some situations, some sensory information (e.g., visual) is relatively more important than others (e.g., tactile).
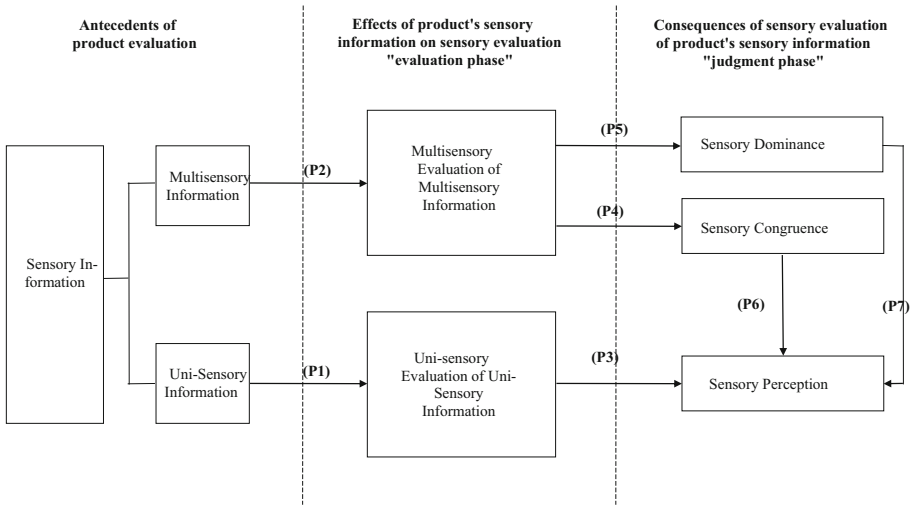
Fig. 2. Antecedents and consequences of consumer sensory processing

4   Conclusion

It is concluded from the above sections that consumers prefer to carry out an exploratory behaviour to physically interact with products via tactile evaluation to make an accurate product judgement (McCabe and Nowlis 2003). This tactile evaluation is mostly needed for products that are based on single sensory information (i.e., touch diagnostic/based on touch-related information only) (Nowlis and Shiv 2005). However, during the tactile evaluation often consumers conduct a multisensory evaluation at the point of purchase (e.g., seeing the product while touching it) (Hultén 2012). If the product is based on single sensory information, it motivates a certain sensory evaluation modality (e.g., tactile or visual evaluation) (Jin 2011; and Peck and Wiggins 2006; 2011). For multisensory information products, consumers are more motivated to conduct a multisensory evaluation (e.g., tactile and visual evaluation) in order to make an accurate product judgement (Balaji, Raghavan and Subhash 2011; and Hultén 2012).

This multisensory interaction-effect causes several outcomes related to the overall product evaluation and product judgment. Two main effects are mostly being focused on in consumer research regarding the interaction between visual and tactile information and visual and tactile evaluations. The first is whether the product's sensory information are congruent or conflicted. The more fluent the multisensory information (e.g., tactile and visual information) of the stimuli is the higher congruence follows. The second effect is whether one type of sensory information (e.g., visual) dominates the other type of sensory information (e.g., tactile) in the sensory experience versus if they are both at almost equal sensory importance (Fenko, Schifferstein and Hekkert 2011).

Additionally, the study focuses on the determinants of sensory dominance. As previous studies show conflicted results in the sensory dominance domain determining factors of sensory dominance are suggested influenced by earlier research. Thus far, three main

determinants are identified from previous literature, sensory dominance based on product category, sensory dominance between different phases of product usage, and sensory dominance depending on the type of product sensory information.

Research determining the reasons underlying the differences in importance ratings between the sensory modalities (i.e., sensory dominance) are likely to provide an interesting addition to the current literature. Furthermore, future research could focus on other situations, such as the purchase process. In addition, the current research takes one step further, by studying the role of the senses for different groups of products, such as familiar versus new products (i.e., product innovativeness). There are many research, which has focused on the macro-geometric and micro-geometric attributes (which are visual information) of packaging in people's product evaluations and purchase behaviours. The study of macro-geometric and micro-geometric attributes is beneficial for the study as it will help to conduct detailed analysis of visual information. The study of these attributes will help to understand the way, in which visual information helps to change the consumer buying behaviour or decision. As per Schifferstein (2006), future research should focus on investigating the tactile (e.g. texture) and visual information of packaging design, in order to influence consumer judgement (e.g. examining the congruency between the product's features and its tactile feedback).

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Risk-Oriented Approach to Financial Security of Motor Transport Enterprises

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Abstract. The article examines the financial security of motor transport enterprises as a set of interconnected and successive stages aimed at achieving sustainable development of the enterprise, improving the welfare of owners, and the market value of the enterprise. The application of a risk-oriented approach to the financial security of motor transport enterprises based on the synthesis of the main provisions of ISO 31000: 2018 "Risk management - Guidelines", the author's index of financial security of motor transport enterprises, and scientific concepts of risk-oriented approach to enterprise management. It is recommended to implement the risk-oriented approach to ensuring the financial security of motor transport enterprises as a set of stages: formation of the system scope, context, criteria of financial security of the motor transport enterprise; comprehensive integrated assessment of financial security of a motor transport enterprise on the basis of the financial security index; making management decisions on risk treatment of financial security; recording and reporting on financial security. The author's index of financial security of motor transport enterprises is formed by an expert method using liquidity index, financial stability index, efficiency index, business activity index, debt burden index, tax burden index. Approbation of the author's methodology for assessing the financial security of enterprises was carried out according five Ukrainian trucking companies and identified the most unstable and acceptable type of financial security, which correlates with the zone of high risk and the zone of minimum risk. The main risks to the financial security of Ukrainian trucking companies are loss of liquidity and solvency due to reduced cash and lack of working capital, low quality of payment discipline and large amounts of accounts payable and receivable, high tax burden, and inefficient tax management.

Keywords: Motor transport enterprise · Financial security · Tax burden · System analysis · Risk-oriented approach · Threats · Risks · Financial security index · Mechanism · System of financial security assessment indicators

1 Introduction

The problem of ensuring the financial security of Ukraine' motor transport enterprises is relevant to a number of conditions: firstly, the importance of motor transport enterprises

as part of the infrastructure for sustainable development of the national economy and providing quality transport services to the extent necessary for the economy; secondly, the importance of the activities of motor transport enterprises as part of the infrastructure to meet the needs of the population, including passenger transport; thirdly, instability and uncertainty of the external economic environment and increased sensitivity of motor transport enterprises to economic potential and economic activity in trade, agriculture, processing industry, construction; fourthly, a significant impact on the formation of gross value added, tax and non-tax revenues to the budget, employment, and household income.

Ensuring the financial security of motor transport enterprises is influenced by internal and external factors that can have a destructive effect on the financial condition of the enterprise, so it is advisable to implement a risk-oriented approach to the financial security of motor transport enterprises. This methodological approach is actively used in banking supervision, insurance supervision, financial monitoring, tax administration, auditing, which indicates its effectiveness and feasibility of application for enterprises.

The paper consists of literature review, research methodology, results, conclusion.

2 Literature Review

Given the urgency of ensuring the financial security of motor transport enterprises for the sustainable development of motor transport enterprises, many scholars and practitioners have devoted their work to the study of the enterprises' financial security. The issues of the internal structure of the enterprise's financial security, indicators of assessment of the enterprise's financial security, methods, and tools for ensuring the enterprise's financial security are debatable in scientific works.

The main approaches to assessing the level of the enterprise's financial security are presented in numerous publications based on the use of single financial ratios or integrated indicators. Valeriia Loiko, Daria Loiko, Denys Lekh limit the assessment of the financial security of the enterprise to three indicators (autonomy ratio, liquidity ratio, return on assets) [1]. Olha Kovalenko, Liudmyla Yashchenko use five financial indicators to assess the financial security of the enterprise [2]. However, such a list of indicators does not make it possible to comprehensively assess the financial security of the enterprise and justify appropriate measures to ensure financial security. Ernst Safargaliev, Rasulya Aetdinova, Ainaz Karimova use 9 indicators to assess the financial security of the company, grouped into four groups: property (assets) of the company, company staff, reputation, financial risks [3]. Another group of researchers in [4] to assess the financial security of the enterprise uses 13 indicators, grouped into four groups: liquidity ratios, asset management ratios, debt management ratios, profitability ratios. Nina Poyda-Nosyk, Iryna Zhuravlyova, Svitlana Lelyuk use 16 indicators to assess the financial security of the company, grouped into five groups: efficiency ratios, liquidity ratios, financial stability ratios, business activity ratios, intellectual capital ratios [5]. Methodical bases of assessment of the level of the enterprise's financial security on the basis of the integrated indicator are substantiated in the works of Larysa Dokiienko, Inna Dotsenko, Raisa Kvasnytska, Lesia Matviichuk. Yevheniia Mishchuk, Tetiana Ganushchak, and others [6–15].

Despite the differences in approaches to the tools of financial security of the enterprise, research needs to refine the theoretical and practical principles - the introduction of a risk-oriented approach to the financial security of the enterprise.

3   Research Methodology

A set of known scientific methods was used to achieve the goal of research and solve the tasks. The methodological basis of the study was the fundamental provisions of the modern theory of finance, financial management, and risk management, the work of leading domestic and foreign scientists. Achieving this goal was carried out by the following scientific methods: system analysis - to justify the system of financial ratios and build an integrated indicator of financial security of the enterprise; economic and mathematical analysis - for a comprehensive assessment of the financial security of motor transport enterprises; expert method - to determine the weights of the integrated indicator of the enterprise's financial security; graphical and tabular methods - to visualize the results of calculations. The information base of the study consisted of key provisions of the theory of finance, financial management, and risk management, as well as reporting materials of trucking companies.

4   Results

Ensuring the financial security of trucking companies is considered by the authors as a set of interrelated and successive stages aimed at achieving sustainable development of the enterprise, improving the welfare of owners, and the market value of the enterprise. The basis for ensuring the financial security of trucking companies should be the awareness of management of the threat of external and internal factors and minimizing their negative impact on the company in general and the financial condition in particular.

Complexity and systematization of financial security of motor transport enterprises are realized through the following stages:

1) development and approval by the highest governing bodies of the development strategy of the enterprise, which do not contradict the requirements of financial security of the enterprise and are aimed at achieving sustainable development of the enterprise;
2) formation of the organizational and managerial subsystem to ensure the financial security of the enterprise from the executive director, financial manager, head of the security service, etc.;
3) determination of indicators (financial ratios) of financial security of motor transport enterprises and construction of a model of an integrated indicator of financial security in compliance with the requirements of complexity and system;
4) identification of the state of the enterprise's financial security, determining the level of riskiness of the enterprise's financial condition;
5) development of measures to ensure the financial security of the enterprise and recommendations for their implementation in practice with the definition of responsible executors, deadlines, implementation tools, etc.;

6) control of compliance of the proposed measures to ensure the financial security of the enterprise's development strategy;
7) implementation of measures to ensure financial security in the process of financial and economic activities of the motor transport enterprise;
8) control over the implementation of measures to ensure the financial security of the enterprise;
9) assessment of the effectiveness of measures to ensure the financial security of the enterprise and adjust them if necessary.
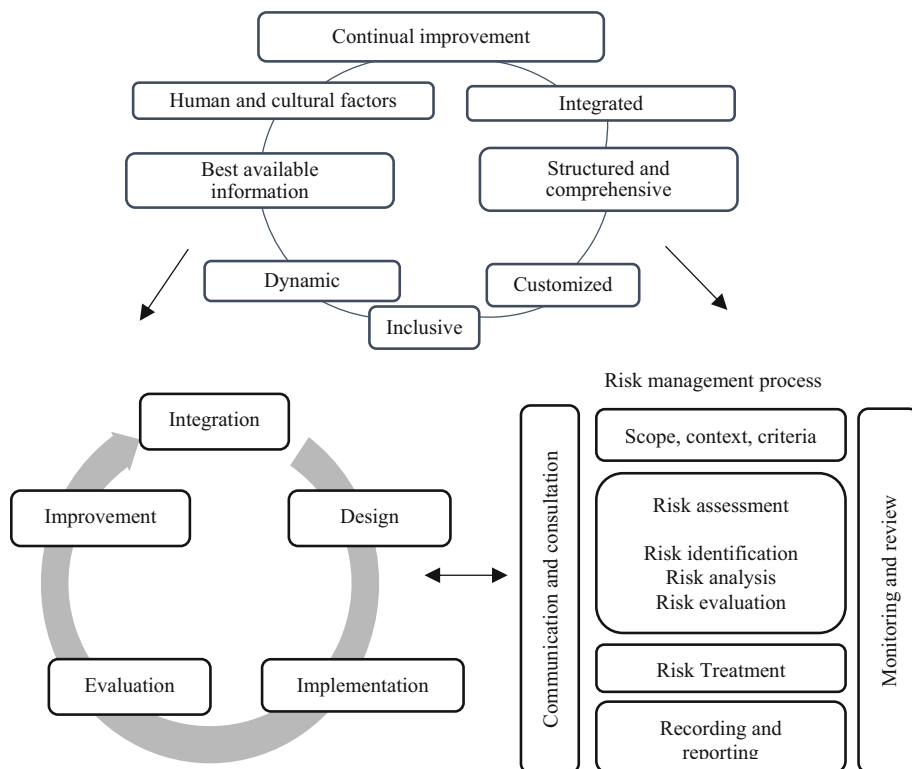
Fig. 1. Principles, framework and process of managing risk. Source: developed by the authors based on [16]

By the development of the provisions of a risk-oriented approach and the feasibility of application in ensuring the financial security of the enterprise, we propose to modify the system of financial security of the enterprise according to ISO 31000:2018 "Risk management - Guidelines" (Fig. 1).

The structure of the risk management process includes the following elements: identification, analysis, evaluation, and processing. Also an important element in the risk management system, according to ISO 31000:2018 "Risk management - Guidelines"

[16], is the monitoring and analysis of the results obtained in the previous stages of risk management, as well as documentation (registration) of all related information risk assessment procedures. The primary element of the risk-oriented approach is risk assessment, i.e. its separation in the general information flow and identification as a potentially dangerous phenomenon, as well as the search for and implementation of relevant solutions to eliminate or reduce negative consequences [17].

The basis of the risk-oriented approach to financial security is the development of indicators for assessing financial security. In our opinion, the basis for assessing the financial security of the enterprise is an integrated indicator (financial security index, I_{FS}), based on a system of individual financial indicators by groups of financial security of enterprises.

The index of financial security of motor transport enterprises (I_{FS}) is calculated by the formula:

$$I_{FS} = \sum_{i=1}^{n} b_i X_i \tag{1}$$

where: b_i – weights that determine the degree of contribution of the i-th group of indicators to the integrated index, X_i – values of the i-th group of indicators.

Using the method of expert assessments, the author's team identified six groups of financial indicators: 1) liquidity and solvency of the enterprise; 2) financial stability of the enterprise; 3) the efficiency of the enterprise; 4) business activity of the enterprise; 5) debt burden of the enterprise; 6) the tax burden of the enterprise. In parallel, experts (top managers working in leading companies in the transport industry) also determined the coefficients of weight (significance) of each group of financial indicators (b_i) to calculate the financial security index of motor transport enterprises (I_{FS}).

Authors'index of financial security of motor transport enterprises (I_{FS}):

$$I_{FS} = 0.226\, I_L + 0.262\, I_S + 0.202\, I_E + 0.131\, I_{BA} + 0.107\, I_{DB} + 0.071\, I_{TB} \tag{2}$$

where: I_L – liquidity index, I_S – financial stability index, I_E – efficiency index, I_{BA} – business activity index, I_{DB} – debt burden index, I_{TB} – tax burden index.

Synthesis of the main provisions of ISO 31000: 2018 "Risk management - Guidelines" [16], components of the index of financial security of motor transport enterprises, and scientific concepts of risk-oriented approach to enterprise management is the basis of the risk-oriented approach to the financial security of motor transport enterprises 2). Methodological and conceptual provisions of the risk-oriented approach to enterprise management are developed in the works of Elvira Danilova, Olena Herasymenko, and other researchers [18–24] (Fig. 2).

The system of indicators for assessing the financial security of motor transport enterprises should cover the optimal number of indicators:

– in the direction of liquidity and solvency of the enterprise: coverage ratio (K_1), absolute liquidity ratio (K_2), cash flow liquidity ratio (K_3);
– in the direction of financial stability of the enterprise: the coefficient of financial independence (K_4), the coefficient of long-term financial independence (K_5), the coefficient of maneuverability of working capital (K_6);
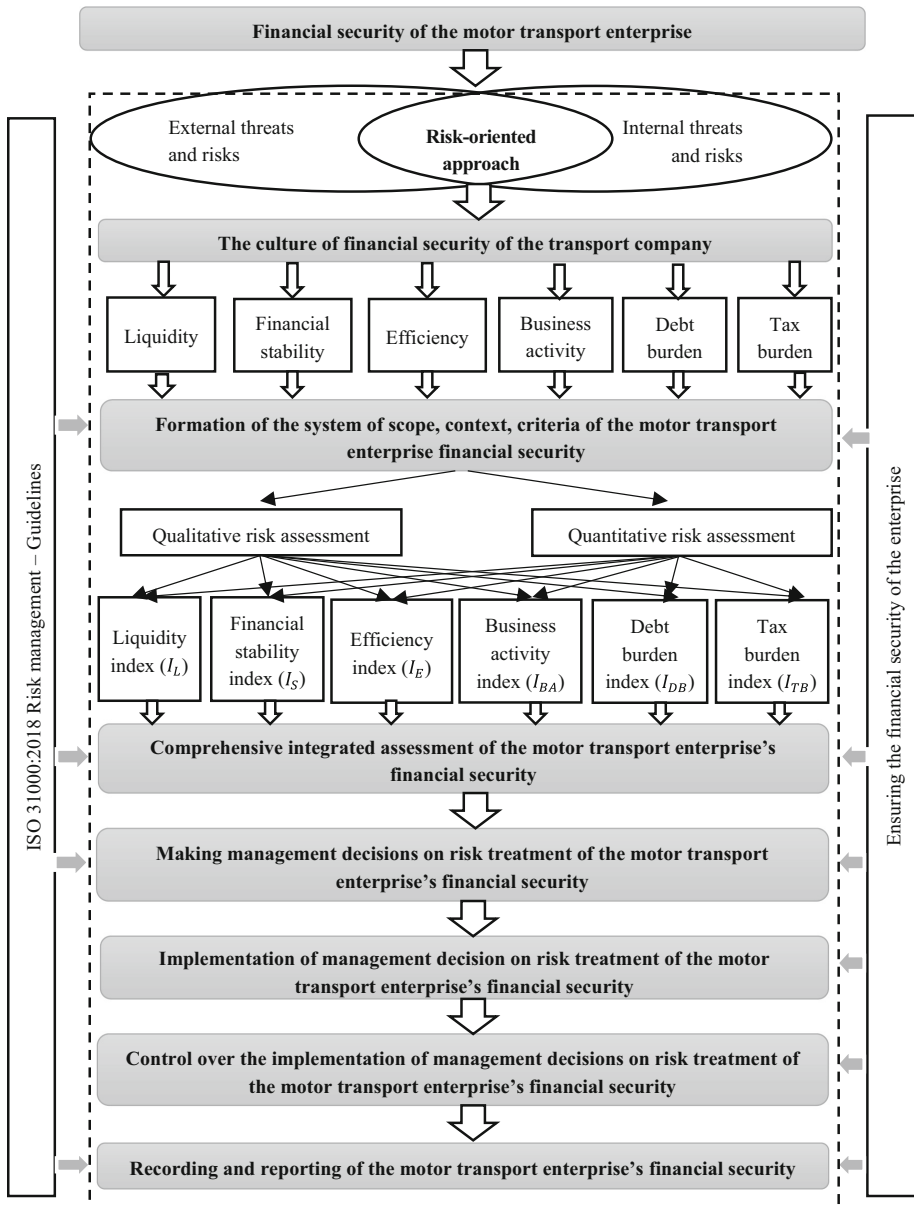
Fig. 2. Mechanism of action of risk-oriented approach to ensuring the financial security of motor transport enterprises. Source: author's development

- by area of efficiency: return on assets (K_7), return on sales (K_8), profit reinvestment ratio (K_9);
- in the direction of business activity of the enterprise: the ratio of the turnover of receivables and payables (K_{10});
- in the direction of the debt burden of the enterprise: the ratio of financial costs to operating profit (K_{11});
- in the direction of the tax burden of the enterprise: the coefficient of the tax burden of income from sales (K_{12}), the coefficient of the tax burden on income tax (K_{13}).

The proposed indicators cannot be considered exhaustive for assessing the financial security of a trucking company, but in terms of available information and the level of publicity of joint-stock companies, such a set of indicators is considered optimal for public and private joint-stock companies.

The basic financial indicators for financial security indicators of the enterprise (Fig. 3) are indicators of the statement of financial position, non-current assets, cash, and cash equivalents, receivables, current assets, equity, retained earnings, long-term liabilities, current liabilities, accounts payable), statement of financial performance (net income from sales of products, services, financial result from operating activities, financial expenses, financial result before tax, expenses from corporate income tax, net financial result) and statement of cash flows (receipts) and spending money, spending on taxes).
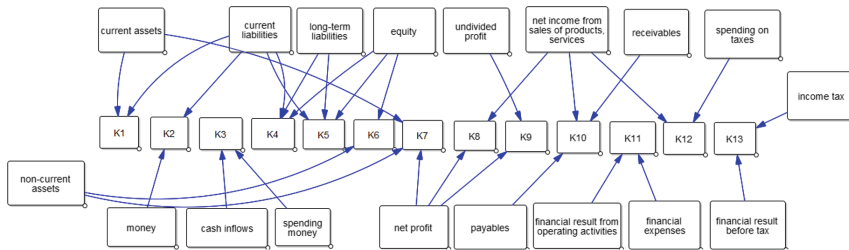
Fig. 3. Baseline indicators for assessing the financial security of motor transport enterprises. Source: author's development

Complementing the first stage of ensuring the financial security of motor transport enterprises is the assignment of critical values of financial ratios by type of security (see Table 1). Critical values of financial security indicators taking into account the peculiarities of motor transport enterprises are substantiated in the works [25, 26].

The second stage of the risk-oriented approach to financial security is risk analysis, which is based on the analysis of financial security. Approbation of the author's methodology for assessing the financial security of enterprises was carried out according to the data of five trucking companies that provide freight services: PJSC "Kyiv Production Company "Rapid" (Kyiv), PJSC "SMTE 0904" (Kyiv), PJSC "MTE 11263" (Dnipro), PJSC "Chernihiv MTE 17462" (Chernihiv), PJSC "TFP "WestUkrTrans" (Drohobych).

Table 1. Critical values of indicators of the motor transport enterprises' financial security

Risk area	Catastrophic risk zone		High risk area	Minimum risk zone	Risk-free zone
Security type	Crisis	Critical	Unstable	Allowable	Absolute
Assigned value indicator (X_i)	0	0,25	0,5	0,75	1
K_1	0–0,1	0,1–0,5	0,5–1	1–2	More 2
K_2	0	0,01–0,04	0,04–0,07	0,07–0,1	More 0,1
K_3	0–0,5	0,5–0,7	0,7–0,9	0,9–1	More 1
K_4	Less 0	0–0,2	0,2–0,4	0,4–0,5	More 0,5
K_5	Less 0	0–0,3	0,3–0,5	0,5–0,7	More 0,7
K_6	Less 0	0–0,02	0,02–0,05	0,05–0,1	More 0,1
K_7	Less 0	0–0,5	0,5–1	1–2	More 2
K_8	Less 0	0–0,5	0,5–1	1–2	More 2
K_9	0–0,5	0,5–0,7	0,7–0,9	0,9–1	1
K_{10}	0–0,5	0,5–0,7	0,7–0,8	0,8–0,9	0,9–1,1
	More 1,5	1,4–1,5	1,2–1,4	1,1–1,2	
K_{11}	Less 0	0–0,5	0,5–1,0	1,0–1,5	More 1,5 or no financial costs
K_{12}	More 33,0	25,0–33,0	19,0–25,0	18,0–19,0	Less 18,0
K_{13}	More 33,0	25,0–33,0	19,0–25,0	18,0–19,0	Less 18,0

Source: developed by the authors based on [25, 26]

According to the results of the diagnosis of the level of financial security, the motor transport enterprises in the sample have the most unstable and acceptable types of financial security, which correlates with the zone of high risk and the zone of minimal risk (Fig. 4).

The average level of financial security of motor transport enterprises is in a zone of high risk, which actualizes the application of a risk-oriented approach, and this applies primarily to PJSC "Kyiv Production Company "Rapid", PJSC "SMTE 0904", PJSC "MTE 11263", PJSC "Chernihiv MTE 17462". PJSC "TFP "WestUkrTrans" differs from other trucking companies by a high level of financial security and is in a zone of minimal risk.

The complex internal structure of the index of financial security of motor transport enterprises makes appropriate decomposition analysis in the areas of financial security.

Liquidity index of motor transport enterprises is in the zone from high risk to risk-free zone (Table 2, Fig. 5). The liquidity of motor transport enterprises in 2016 improved due to the increase in the levels of coverage ratios and absolute liquidity, which was the result of structural changes in the assets of liabilities of motor transport enterprises. This applies to PJSC "Kyiv Production Company "Rapid", PJSC "Chernihiv MTE 17462",
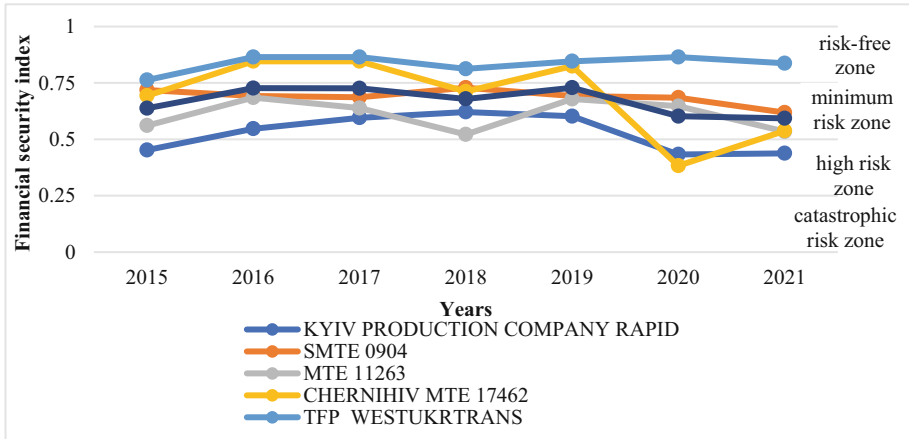
Fig. 4. Index of financial security of motor transport enterprises in 2015–2021. Source: author's development

and PJSC "TFP "WestUkrTrans". In 2017–2019, enterprises managed to maintain a sufficient level of liquidity and solvency, but in 2020–2021 there was a deterioration in the level of liquidity and solvency for most trucking companies: PJSC "Kyiv Production Company "Rapid", PJSC "SMTE 0904", PJSC "MTE 11263", PJSC "Chernihiv MTE 17462".

The financial stability index of motor transport enterprises is in the zone from high risk to risk-free zone (Table 3, Fig. 6). Absolute financial stability is determined for PJSC "TEK" "Zahidukrtrans". The financial stability of motor transport enterprises in 2016–2017 improved due to the increase in the levels of financial independence and long-term financial independence, which was the result of structural changes in liabilities and an increase in the share of the equity. At the end of 2018, PJSC "TFP "WestUkrTrans", PJSC "Chernihiv MTE 17462", PJSC "MTE 11263" had absolute financial stability and ensured the efficiency of capital formation of the enterprise. In 2019, the deterioration of financial stability in the direction of acceptable and unstable security began. The coefficient of maneuverability of working capital indicates the lack of own financial sources to finance current needs in PJSC "Kyiv Production Company "Rapid" and PJSC "Chernihiv MTE 17462".

The efficiency index makes it possible to identify the lack of effective management of assets and capital of motor transport enterprises, which poses a threat to the financial stability, liquidity, and sustainable development of enterprises as a whole (Table 4, Fig. 7). PJSC "TFP "WestUkrTrans" is in the risk-free zone according to the Efficiency index. Other motor transport enterprises were in all risk zones during the study period, including the catastrophic risk zone. The disadvantage of the Efficiency index of motor transport enterprises is the high level of fluctuation, which indicates the lack of a single trend and stable dynamics.

The business activity index of motor transport enterprises characterizes the quality of settlements with debtors and creditors. The optimal value of this ratio is a value equal to one and indicates the ability of the trucking company to lend to its customers through

Table 2. Liquidity and solvency indicators of motor transport enterprises in 2015–2021

Name of Company	Period, year						
	2015	2016	2017	2018	2019	2020	2021
Coefficient of coverage (K_1)							
Kyiv Production Company "Rapid"	1,93	2,51	1,97	1,69	1,74	0,87	0,70
SMTE 0904	3,16	2,50	2,19	1,93	2,62	2,73	2,15
MTE 11263	0,74	1,06	1,83	2,13	3,09	0,20	0,21
Chernihiv MTE 17462	1,47	1,72	3,85	2,82	1,20	0,82	0,89
TFP "WestUkrTrans"	1,47	7,40	8,42	2,26	2,99	4,13	6,71
Absolute liquidity ratio (K_2)							
Kyiv Production Company "Rapid"	0,13	0,27	0,08	0,09	0,43	0,02	0,05
SMTE 0904	0,15	0,21	0,49	0,51	0,74	0,66	0,46
MTE 11263	0,07	0,05	0,28	0,61	1,13	0,04	0,05
Chernihiv MTE 17462	0,10	0,19	0,23	0,12	0,22	0,05	0,08
TFP "WestUkrTrans"	0,06	1,25	0,33	0,14	0,10	0,18	0,45
Cash flow liquidity ratio (K_3)							
Kyiv Production Company "Rapid"	1,00	1,00	0,99	1,00	1,03	1,03	1,00
SMTE 0904	1,00	1,00	1,02	1,02	0,99	1,00	1,00
MTE 11263	1,01	0,99	1,02	1,02	1,02	1,01	0,99
Chernihiv MTE 17462	0,99	1,01	0,99	1,00	1,02	0,98	1,02
TFP "WestUkrTrans"	1,00	1,05	1,01	0,96	1,01	1,01	1,00

Source: author's development
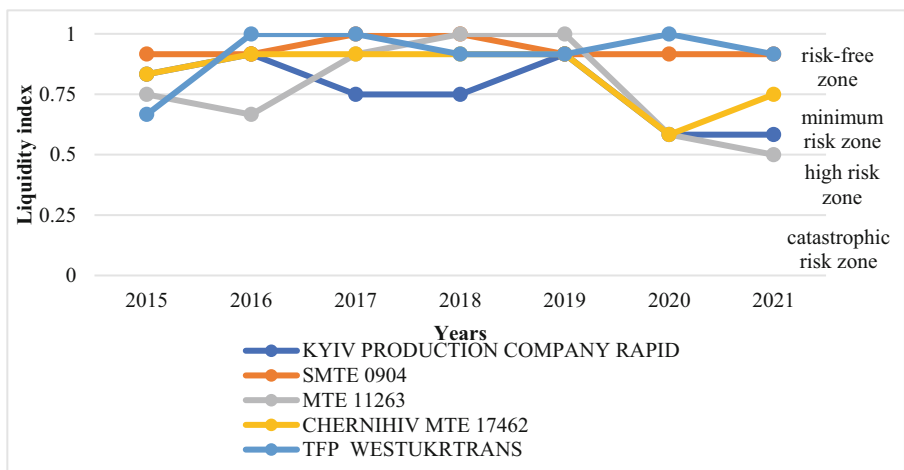
Fig. 5. Liquidity index of motor transport enterprises in 2015–2021 Source: author's development

Table 3. Indicators of financial stability of motor transport enterprises in 2015–2021

Name of Company	Period, year						
	2015	2016	2017	2018	2019	2020	2021
Coefficient of financial independence (K_1)							
Kyiv Production Company "Rapid"	0,49	0,57	0,60	0,49	0,38	0,44	0,37
SMTE 0904	0,92	0,92	0,87	0,79	0,88	0,86	0,81
MTE 11263	0,68	0,77	0,91	0,91	0,91	0,84	0,80
Chernihiv MTE 17462	0,71	0,71	0,86	0,78	0,62	0,48	0,46
TFP "WestUkrTrans"	0,72	0,91	0,95	0,84	0,87	0,85	0,90
Coefficient of long-term financial independence (K_2)							
Kyiv Production Company "Rapid"	0,82	0,84	0,72	0,73	0,78	0,67	0,66
SMTE 0904	0,92	0,92	0,87	0,79	0,88	0,86	0,81
MTE 11263	0,72	0,80	0,92	0,91	0,91	0,84	0,85
Chernihiv MTE 17462	0,71	0,72	0,86	0,78	0,62	0,48	0,46
TFP "WestUkrTrans"	0,74	0,91	0,95	0,84	0,87	0,89	0,93
Coefficient of maneuverability of working capital (K_3)							
Kyiv Production Company "Rapid"	–0,36	–0,04	0,24	–0,10	–0,62	–0,64	–1,03
SMTE 0904	0,19	0,13	0,18	0,24	0,22	0,28	0,26
MTE 11263	–0,16	–0,02	0,07	0,12	0,20	0,06	0,02
Chernihiv MTE 17462	0,18	0,28	0,44	0,51	0,11	–0,20	–0,14
TFP "WestUkrTrans"	0,18	0,62	0,35	0,23	0,30	0,35	0,43

Source: author's development
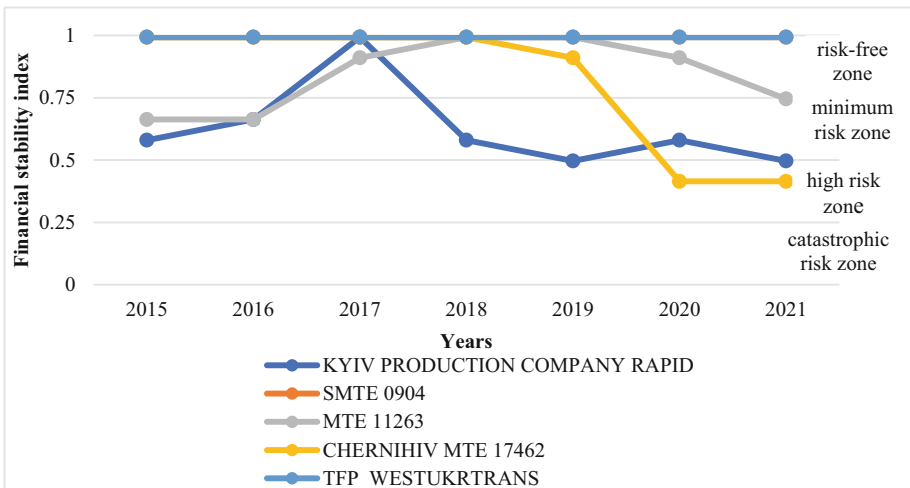
Fig. 6. Financial stability index of motor transport enterprises in 2015–2021. Source: author's development

Table 4. Indicators of profitability of the motor transport enterprises in 2015–2021

Name of Company	Period, year						
	2015	2016	2017	2018	2019	2020	2021
Return on assets (K_7)							
Kyiv Production Company "Rapid"	0,42	0,35	0,42	3,80	3,89	0,19	0,15
SMTE 0904	0,03	0,22	–0,15	0,29	0,08	2,26	– 9,31
MTE 11263	–3,95	4,18	0,32	–5,09	0,48	2,06	1,00
Chernihiv MTE 17462	–2,11	5,83	14,50	–7,34	4,12	– 25,54	0,51
TFP "WestUkrTrans"	13,75	35,04	37,48	27,43	20,25	14,62	8,27
Profitability of sales (K_8)							
Kyiv Production Company "Rapid"	0,20	0,12	0,12	1,19	1,64	0,08	0,07
SMTE 0904	0,02	0,13	–0,07	0,13	0,03	0,85	– 3,36
MTE 11263	–3,99	2,61	0,36	–4,27	0,30	1,53	0,75
Chernihiv MTE 17462	–1,06	2,41	4,50	–2,47	2,03	– 13,55	0,22
TFP "WestUkrTrans"	7,25	16,50	23,93	19,95	16,56	15,25	9,20
Profit reinvestment ratio (K_9)							
Kyiv Production Company "Rapid"	0,55	0,36	0,44	11,73	0,96	0,00	0,00
SMTE 0904	1,00	1,00	1,00	1,00	1,00	0,00	–
MTE 11263	1,00	2,46	0,15	–0,96	0,14	0,26	0,10
Chernihiv MTE 17462	1,00	1,00	23,14	1,14	1,00	–	1,00
TFP "WestUkrTrans"	1,00	1,00	1,00	0,66	1,00	1,00	1,00

Source: author's development
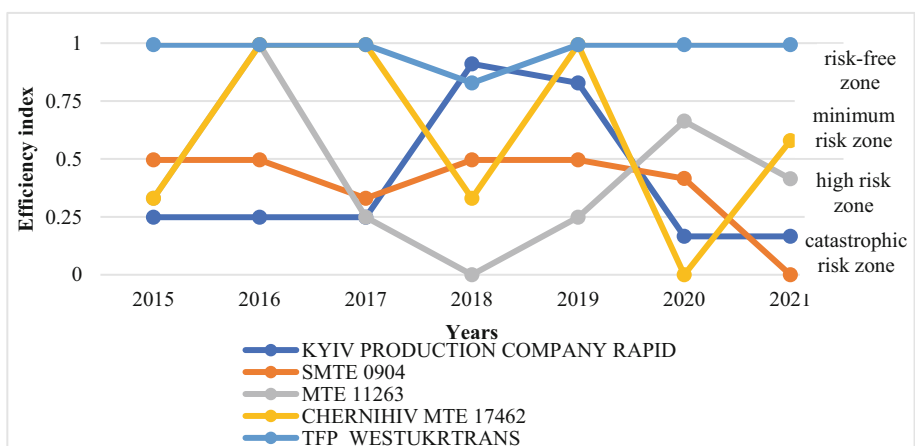
Fig. 7. Efficiency index of motor transport enterprises in 2015–2021. Source: author's development

suppliers [25]. According to Figs. 8 it is possible to note violation of payment discipline of motor transport enterprises. Calculations and analysis of financial statements indicate that in 2020–2021 the state of settlements with debtors and creditors deteriorated. PJSC "Kyiv Production Company "Rapid", PJSC "MTE 11263", PJSC "Chernihiv MTE 17462" and PJSC "TFP "WestUkrTrans" form significant amounts of receivables, which indicates the lack of effective collection of receivables.
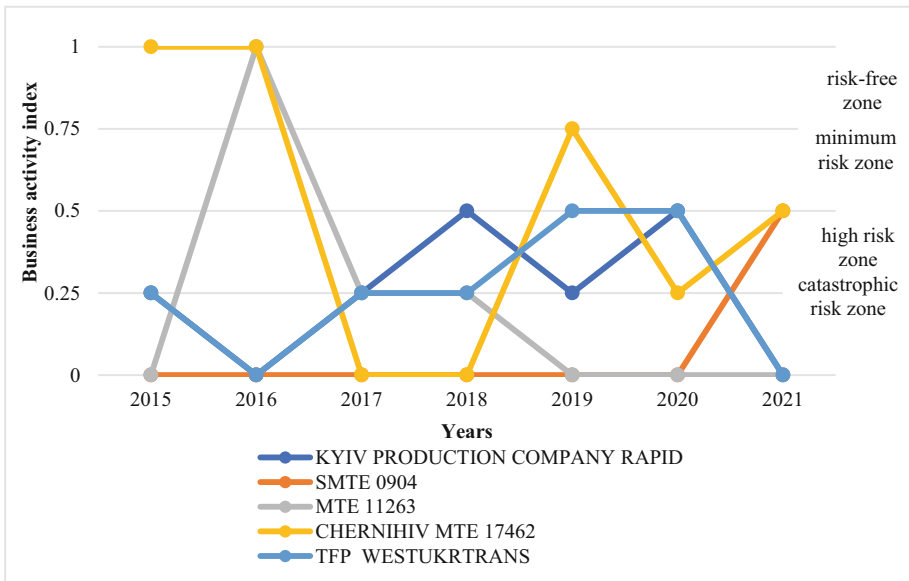
Fig. 8. Business activity index of motor transport enterprises in 2015–2021. Source: author's development

The debt burden index of motor transport enterprises indicates the potential risk of potential loss of solvency, financial stability, and deterioration of financial security due to debt burden in PJSC "Kyiv Production Company "Rapid" and PJSC "MTE 11263". By the end of 2021, the Debt burden was in a risk-free zone (Fig. 9).

The tax burden index of motor transport enterprises is determined since the tax burden on the totality of taxes paid and income tax. The highest level of the tax burden was determined for PJSC "SMTE 0904" and PJSC "Chernihiv MTE 17462", which are in the catastrophic risk zone (Table 5, Fig. 10). The coefficient of the tax burden on sales revenues for PJSC "SMTE 0904" and PJSC "Chernihiv MTE 17462" exceeds 33%. For other motor transport enterprises that were in the risk-free zone, the tax burden ratio of sales revenues did not exceed 10%. The income tax rate allows you to assess the application of tax differences and the ability to optimize income tax liabilities. Tax differences increase the tax burden for PJSC "Kyiv Production Company "Rapid", PJSC "SMTE 0904", PJSC "MTE 11263", and PJSC "TFP "WestUkrTrans".

The analysis of financial security of motor transport enterprises showed the presence of common risks of financial security:
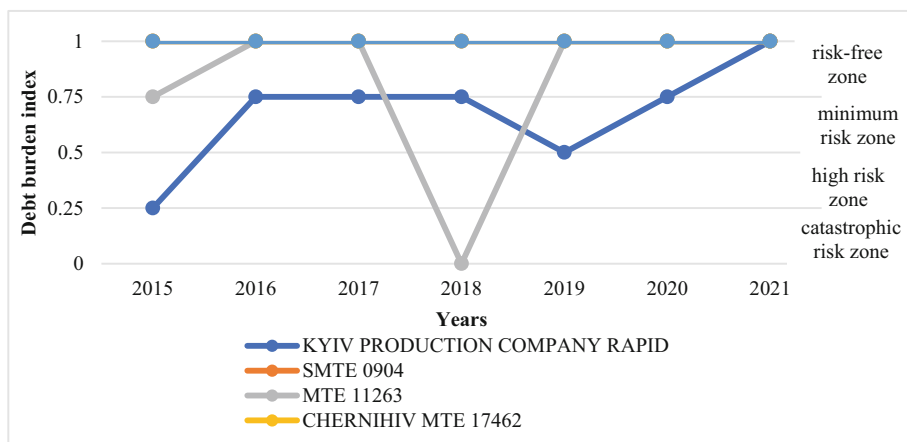
Fig. 9. Debt burden index of motor transport enterprises in 2015–2021. Source: author's development

Table 5. Indicators of the tax burden of motor transport enterprises in 2015–2021

Name of Company	Period, year						
	2015	2016	2017	2018	2019	2020	2021
Coefficient of tax burden on sales revenues (K_{12})							
Kyiv Production Company "Rapid"	3,49	3,29	4,44	4,03	5,41	5,47	6,42
SMTE 0904	32,20	39,19	31,23	40,15	44,90	31,65	32,64
MTE 11263	4,99	8,83	6,27	7,39	6,74	7,89	8,26
Chernihiv MTE 17462	12,93	10,31	16,98	28,55	27,93	43,12	35,06
TFP "WestUkrTrans"	4,15	2,93	7,07	5,19	5,47	4,98	4,09
Coefficient of tax burden on income tax (K_{13})							
Kyiv Production Company "Rapid"	100,00	100,00	150,28	35,56	30,23	36,44	59,05
SMTE 0904	0,00	21,43	21,43	17,97	20,00	21,50	–
MTE 11263	–	18,08	67,96	–	77,35	42,01	61,34
Chernihiv MTE 17462	Not a payer of income tax						
TFP "WestUkrTrans"	30,90	18,00	18,00	18,00	18,00	18,00	18,43

Source: author's development
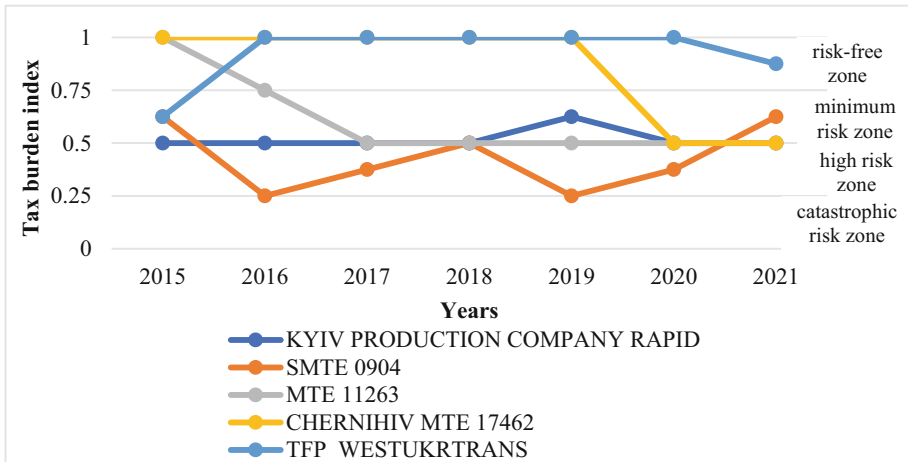
Fig. 10. Tax burden index of motor transport enterprises in 2015–2021. Source: author's development

1) loss of liquidity and solvency due to a decrease in cash,
2) loss of liquidity and solvency due to imbalance and non-synchronization of cash flows,
3) loss of financial independence and financial stability due to insufficient equity,
4) loss of financial independence, liquidity, and solvency due to lack of working capital,
5) loss of long-term financial independence due to dependence on current liabilities,
6) loss of financial independence and financial stability due to unprofitable activities,
7) unprofitable activities and lack of skills of managers to ensure profitability,
8) insufficient level of profitability for sustainable development of the enterprise,
9) low quality of payment discipline,
10) unprofitable activities of the enterprise due to financial costs,
11) loss of liquidity and solvency due to high financial costs,
12) high level of tax burden and inefficient tax management at the enterprise.

The most common risks of financial security are the risk of loss of financial independence, liquidity and solvency due to lack of working capital (relevant for PJSC "Kyiv Production Company "Rapid", PJSC "MTE 11263" and PJSC "Chernihiv MTE 17462"), low quality and pay. amounts of accounts payable and receivable (relevant for PJSC "Kyiv Production Company "Rapid", PJSC "SMTE 0904", PJSC "MTE 11263", PJSC "Chernihiv MTE 17462" and PJSC "TFP "WestUkrTrans" tax management (relevant for PJSC "Kyiv Production Company "Rapid", PJSC "SMTE 0904", PJSC "MTE 11263" and PJSC "Chernihiv MTE 17462").

5   Conclusion

The article proposes the application of a risk-oriented approach to the financial security of motor transport enterprises based on the synthesis of the main provisions of ISO

31000: 2018 "Risk management - Guidelines", components of the financial security index of motor transport enterprises, and scientific concepts of risk-oriented approach to enterprise management. It is recommended to implement the risk-oriented approach to ensuring the financial security of motor transport enterprises as a set of stages: formation of the system scope, context, criteria of financial security of the motor transport enterprise; comprehensive integrated assessment of financial security of a motor transport enterprise on the basis of the financial security index; making management decisions on risk treatment of financial security; recording and reporting on financial security.

Approbation of the author's method of assessing the financial security of enterprises was carried out according to the data of five Ukrainian motor transport enterprises. Mostly unstable and acceptable type of financial security has been identified, which correlates with the zone of high risk and the zone of minimal risk. The main risks to the financial security of Ukrainian transport companies are the loss of liquidity and solvency due to reduced cash and lack of working capital, poor quality of payment discipline and large amounts of accounts payable and receivable, high tax burden, and inefficient tax management.

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Demarketing of Cigarette Smoking in the West Bank, Palestine

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Abstract. The purpose of this study was to investigate demarketing of cigarette smoking in the West Bank, Palestine. The study focused on understanding the nature and meaning of demarketing, as well as defining the elements that influence demarketing and building a suitable model for smoking demarketing. An empirical research employing 367 questionnaires from smokers was undertaken to collect primary data. According to the findings of the study, there is a link between independent factors (product, price, place, and promotion) and the dependent variable (demarketing of cigarette smoking) for a variety of reasons that were examined throughout this study. Following that, the article finished with suggestions for future academic researches and policymakers in Palestine.

Keywords: Demarketing · Cigarette smoking · West Bank · Palestine

1 Introduction

Although marketing is frequently an important strategy for companies, 'demarketing' is a lesser-known term aimed at discouraging people from using or purchasing certain products, either because they are harmful or because consumer demand exceeds supply [1]. While the latter is crucial, the objective of demarketing is to improve society's well-being and safety by diminishing demand for a certain product due to its damaging attributes. Demarketing is becoming increasingly important in a quickly changing environment, since it is at the heart of social marketing [2]. Previous demarketing research [3, 4] has found links between consumers' affective, cognitive, and behavioral responses in a variety of contexts, including not only potentially hazardous consumption like smoking, illegal drug use, or firearms diversion (for example, [3, 5–7]), but also water and electricity consumption [8, 9].

Smoking is one of the industries at the forefront of demarketing. Smoking is one of the most serious worldwide health risks, with significant economical consequences for both developed and developing nations. According to the World Health Organization [10], there are 1.1 billion smokers worldwide, with 800 million (73%) of them living in

poor nations. Furthermore, global yearly smoking expenditures are expected to be $200 billion, with societal costs (i.e., direct health expenses and lost productivity) estimated to be $200 billion. Furthermore, around 5 million people die each year as a result of smoking throughout the world. As a result, it's critical to comprehend the high cost of smoking in order to measure its economic effects on society, people, public budget, and private sector.

Despite medical evidence that tobacco products (including smoking) cause a slew of dangerous diseases (including lung cancer, heart disease, high blood pressure, and premature aging), tobacco consumption is decreasing in most developed nations and increasing in most developing nations (including Palestine) [1]. According to the Association of Defeating Smoking and Dangerous Drugs in Gaza – Palestine, Palestine has one of the biggest smoking rates in the world. This sad reality may be linked to a variety of factors, including the Palestinian Authority's facilitation of international cigarettes into its zones, resulting in the presence of more than 60 different types of foreign cigarettes on the Palestinian marketplace. As a result, the annual number of new smokers is expected to reach 800,000. As a result, $450 million is wasted on cigarettes each year, and 4,000 people die as a result of smoking.

The remainder of the paper is organized in the following manner. Section 2 describes the conceptual framework as well as the hypotheses. The methodology is explained in Sect. 3. In Sect. 4, the study's findings are provided, followed by a discussion in Sect. 5.

2   Relationship Between the Demarketing Mix and Consumer Reaction

Under the context of demarketing, the product relates to marketing activities to diminish its sales volume. Kern [11] claims that firms strive to reduce supply lines, diminish service and productive operations as part of the demarketing approach, which encourages people to buy the products. Furthermore, satisfied consumers are known to have a good influence on profitability since they choose to acquire more units of the product and engage in long-term repurchases [12]. Dissatisfied consumers, on the other hand, diminish income through reducing purchases and product consumption [12]. Moreover, their dissatisfaction frequently leads to complaints [13] as well as negative word of mouth [14]. As a result, if customer satisfaction promotes consumption and dissatisfaction decreases it, a dissatisfied client is more likely to formulate deconsumption intents. Facilitating and encouraging the usage of alternative products is also an important part of the demarketing approach [15, 16]. It has been scientifically proven that product modulation has a favorable influence on demarketing of cigarette smoking [2]. Based on the foregoing, we propose the following hypothesis:

H1: Product modulation has a favorable impact on demarketing of cigarette smoking

Price determination might be a simple but efficient way to reduce power use. The aim of the demarketing pricing approach is to reduce present demand by raising prices [8]. Pricing has an influence on consumer attitudes and behavior [17]. Customers who

believe prices are too expensive are more likely to have a negative opinion about the product and have a poor purchasing intention [18]. Increasing prices will reduce demand in purely economic terms (e.g., [19]). Price determination in demarketing, on the other hand, is one of the most difficult procedures for decision-makers [20]. The purpose of the demarketing pricing strategy is to raise prices in order to decrease, but not destroy, product demand. As a result, we came up with the following hypothesis:

H2: Price modulation has a favorable impact on demarketing of cigarette smoking.

According to past studies, one of the most important factors of demarketing is place/location. Both the place of consumption and the place of purchase may be adjusted, and both factors can have a demarketing impact [21]. Limiting the places where a behavior may be performed, according to Ajzen [22], might operate as a barrier to encouraging the action and have a significant influence on intentions. As a result, consumption constraints are an important barrier to consumption and should have a direct influence on consumption intentions [23]. Also, purchase restrictions would have a similar effect, reducing the importance of opportunity costs (e.g., [24]). In a demarketing perspective, this means that if you spend additional time and effort seeking for a product, you'll have less time for other things like leisure, housework, or self-care [23]. As a result, we suggest the following hypothesis:

H3: Place modulation has a favorable impact on demarketing of cigarette smoking.

Promotions to persuade customers to buy products they don't use and anti-promotion tactics to rationalize consumption are part of the demarketing approach [25]. Kern [11] states that one of the key purposes of environmental marketing is to educate the public about the importance of environmental behavior and the need to conserve the environment and natural resources. Due of its direct detrimental influence on intentions, consumer promotion is important in demarketing [26, 27]. As a result, we predict the following hypothesis:

H4: Promotion modulation has a favorable impact on demarketing of cigarette smoking.

The initial construction of Kotler and Levy [28] and many researchers (such as [6, 8, 9]) was found to be useful in drawing our model. As can be seen, the model is both normative and descriptive (see Fig. 1: a diagram of demarketing model).
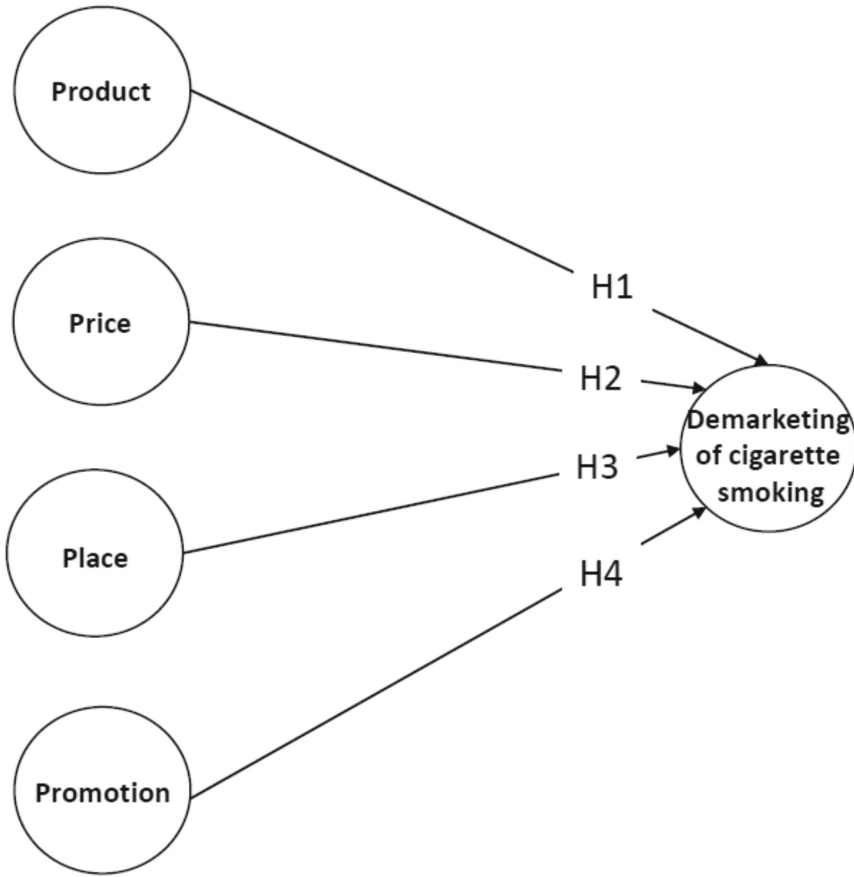
Fig. 1. The research framework

3   Methodology

3.1   Participants

As stated in Table 1, 367 respondents completed the survey and submitted it. In the table, the results of the demographic variables were shown.

Table 1. Profiles of the respondents ($n = 367$)

Variables	Groupings	No. of respondents	%
Age	30 years or less	196	53.4
	31–40 years	78	21.3

(continued)

Table 1. (*continued*)

Variables	Groupings	No. of respondents	%
	41–50 years	64	17.4
	51–60 years	22	6.0
	61 years and above	7	1.9
Gender	Male	342	93.2
	Female	25	6.8
Education level	High school or lower	112	30.5
	Diploma	48	13.1
	Bachelor	158	43.1
	Master	42	11.4
	PhD	7	1.9
Marital status	Married	191	52.0
	Single	143	39.0
	Widowed	21	5.7
	Divorced	12	3.3

3.2 Procedures

The descriptive method was used to define the current situation and respond to main difficulties about the demarketing of cigarette smoking in the West Bank, Palestine. As a consequence, the survey, which was performed using a Google form, served as the major data collection strategy for this study. The URL for the Google form was extensively shared on social media (Facebook, WhatsApp, and emails). To comply with local language restrictions, the original questionnaire was appropriately translated into Arabic. It was then reviewed and pilot tested for correctness by three native Arabic speakers. IBM SPSS software version 23 was used for statistical analysis.

3.3 Measures

The survey employed a 5-point Likert scale, with 1 indicating strong disagreement, 2 indicating disagreement, 3 indicating no opinion/neutral, 4 indicating agreement, and 5 indicating strong agreement. The survey was broken down into five sections. The product is analyzed in the first section using four questions based on Salem [2] and Raab et al. [6]. On the second section, price was assessed using four items based on Salem et al., [9], Maxwell [17], and Xia et al., [18]. The third section covers place using four items based on Shiu et al., [23], and Salem [2]. Four questions are used to evaluate promotion in the fourth section based on Yousif, [25], and Siegel and Biener, [27]. In the last section, six items were used to assess demarketing of cigarette smoking based on Shiu et al., [23], Salem et al., [9], and Siegel and Biener, [27].

4   Results

4.1   Factor Analysis

The factor analysis was checked using the KMO and Bartlett's tests to see if it was appropriate for the research. The reliability test should yield a score of at least 0.7. The Bartlett's Sphericity test results should be less than 0.05 in most cases. The KMO value of 0.746 is more than the acceptable threshold of 0.000, suggesting that this analysis is adequate for the research.

One principle factor is rotated using the varimax normalization to create the factor score coefficient matrix created by principal components analysis [29, 30, 31, 6], as shown in Table 2. The factor has a total of 22 items. According to the study, the lowest loading threshold for factor loadings on multiple scales is 0.30 [5, 32, 33, 34, 35]. Table 2 shows that all of the loadings are more than 0.30, indicating that the construct validity of the scales has been retained.

4.2   Hypotheses Testing

Multiple regression analysis was used to explore the link between the independent variables (product, price, place, and promotion) and the dependent variable (demarketing of cigarette smoking). In a multiple regression analysis, the researcher wanted to see how independent factors influenced demarketing of cigarette smoking.

According to Table 3, independent factors account for 50.4 percent of the variation in demarketing of cigarette smoking (adjusted $R2 = 0.504$). Because the F value was substantial at 0.000, the model's quality was confirmed. product ($t = 2.304$, p 0.000), price ($t = 2.176$, p 0.000), place ($t = 2.243$, p 0.000), and promotion ($t = 2.246$, p 0.000) are all positively associated to demarketing of cigarette smoking, as shown in Table 3. As a consequence, the statistics showed that the analysis had a considerable supported H1, H2, H3, and H4, respectively.

5   Discussion

5.1   Discussion of Findings

This study investigates the relationship between (product, price, place, and promotion) and the dependent variable (demarketing of cigarette smoking). The findings indicate that Product influences the demarketing of smoking by the government reducing the amount of imported tobacco products, reducing the number of cigarettes in each packet, displaying the dangers of smoking on the cigarettes packet, focusing on importing light tobacco, pressuring importers to lessen the quantity of levels of nicotine, and reducing the attractiveness of cigarettes. This finding is in line with previous studies [12–16].

Additionally, the findings showed a relationship between price and the demarketing of cigarette smoking. This link occurs because the price of cigarettes has increased, the tax on tobacco imports has increased, the trust given to distributors (wholesalers and retailers) has been revoked, and the number of licenses for importing and selling tobacco has increased. This finding is consistent with past researches [17–20].

Table 2. Reliability and factor loading of the constructs.

Construct	Item	MV	SD	FL	Cronbach's α
Product	1	3.43	0.92	.721	.748
	2	3.35	0.86	.736	
	3	359	0.94	.745	
	4	3.72	0.98	.757	
Price	1	3.49	0.84	.756	.762
	2	3.57	0.86	.745	
	3	3.24	0.95	.761	
	4	3.36	0.84	.727	
Place	1	3.69	0.86	.722	.743
	2	3.56	0.87	.764	
	3	3.31	0.82	.745	
	4	3.54	0.92	.719	
Promotion	1	3.45	0.85	.746	0.738
	2	3.26	0.82	.718	
	3	3.54	0.89	.713	
	4	3.58	0.94	.754	
Demarketing of cigarette smoking	1	3.54	0.93	.757	.776
	2	3.67	0.86	.743	
	3	3.59	0.83	.764	
	4	3.63	0.94	.738	
	5	3.58	0.81	.749	
	6	3.73	0.92	.753	

Table 3. Results of multiple regression analysis.

Model	Unstandardized coefficients		Standardized Coefficients	T	Sig.
	B	Std. error	Beta		
(Constant)	0.189	0.061		2.383	0.000
Product	0.187	0.052	0.172	2.304	0.000
Price	0.153	0.051	0.146	2.176	0.038
Place	0.167	0.049	0.143	2.243	0.000
Promotion	0.174	0.053	0.157	2.286	0.000

Notes: Dependent variable: demarketing of cigarette smoking; adjusted R2 = .504, F = 106.843, and sig. = 0.000

The findings also identify that smoking demarketing is influenced by legislation and other constraints. The organizations ban its employees from smoking cigarettes during work hours, prevent tobacco smoking in public locations, and designate remote places as places where tobacco smoking is permitted by reducing and limiting the number of places where tobacco is marketed. To put it another way, diminishing consumption places, reducing distribution areas, and making it more difficult to buy cigarettes all contribute to the demarketing of cigarettes. This finding is supported by Shiu et al., [23], and Salem [2].

Furthermore, the findings show that Promotion has an impact on the demarketing of smoking by preventing promotional programs for tobacco use, rising and expanding anti-promotion campaigns (such as pamphlets highlighting the dangers of cigarette smoking), and creating promotional strategies (prizes and valuable gifts) by the government and related organizations for people who quit smoking. This finding is supported by Yousif, [25], and Siegel and Biener, [27].

5.2   Limitations and Further Research

The study's empirical findings included contextual and applicability restrictions. Our conclusions are based on responses from smokers in the West Bank. As a result, broad generalizations across Palestine are difficult. Even though the findings apply to emerging economies with similar cultural backgrounds, such as Palestine, they may not be appropriate for regions with diverse cultural circumstances.

The researcher suggests that the model could be re-examined in other situations or cultures as part of future studies. Furthermore, moderating and/or mediating factors might be included to the model to improve understanding of the relationships and mechanisms underlying the problem at hand. Furthermore, future studies should involve both smokers and nonsmokers.

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Smart Technology and Waste Management, a Review on Current and Potential Applications in Malaysia

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Abstract. Continuous population growth in Malaysia has drastically increased solid waste production to a new challenging level, raising the need for new and efficient solid waste management solutions. With the advent of artificial intelligence and the internet of things (IoT) into the smart city concept, traditional solid waste management can be upgraded to a cost-efficient, and real-time smart solid waste management (SSWM).

Malaysia sets the plan for its most developed state, Selangor, to be a smart state by 2025. SSWM is one of 12 domains drafted to achieve this goal. Considering the perquisites of SSWM, this study aims to provide a general overview of various methods available in the literature, and a comparative assessment is made in terms of IoT focused elements, including identification, sensing, communication, and computation from the perspective of time, cost and efficiency. Finally, the challenges in implementing SSWM in Malaysia are explored.

Keywords: Smart Waste Management · Smart Cities · Smart Selangor

1 Introduction

In this modern era, the pervasiveness of urban culture advances modern lifestyle and the growing usage of single-use products, have drastically increased the volume of municipal solid waste (MSW) globally. It was reported that 20 years ago, each person out of the then estimated 2.9 billion urban residents generates about 0.64 kg of waste (0.68 billion tons per year). In 2012, this number significantly increased to 1.2 kg per person generated by 3 billion urban residents (1.3 billion tons per year). Further alarming forecasting predicted that by 2025 aggregate MSW per person could exceed 2.2 billion tons with estimated 4.3 billion residents (Hoornweg et al. 2012).

This situation calls for the implementation of advanced waste management concepts and practices to manage the enormous amount of generated waste. The current conventional practice of waste management involving static containers and human-operated vehicles is insufficient to cope with the current waste generation rate, especially in developing countries where source separation is not a common practice yet. Hence, it is crucial

to manage the monetization, collection, and decomposition of solid waste efficiently to optimize the collection, cost-effectiveness, eco-friendliness, and sustainability.

The present technological advancement in the era of the fourth industrial revolution enables swift and seamless communication irrespective of geographical location. This revolution introduced new technical infrastructure and innovative methods such as the Internet of Things (IoT), blockchain, and Cyber-Physical Systems (CPS), where the physical world is connected via the internet (Allam and Dhunny 2019; Khaitan and McCalley 2014). The current technological advancement also enables the introduction of the Smart City (SC) concept, whereby smart solid waste management (SSWM) presents the opportunity to manage the deficiencies in existing waste management systems using smart technologies.

Given its benefits, various studies have explored this issue (Ahad et al. 2020; Kang et al. 2019; Pardini et al. 2019; Rybnytska et al. 2018), but to the best of our knowledge, no prior study has discussed the potentials of comprehensive smart waste management (SWM) system in Malaysia. Therefore, this study aims to bridge the gap in the current SSWM literature by providing a quick review of SSWM applications and its potentials in the Malaysian context. After reviewing existing literatures, this paper provides an overview on Waste Management in Malaysia, followed by a discussion on smart waste management applications, emphasizing on the Malaysian literatures. The proceeding sections discuss the challenges of implementing SSWM and provide future guidance for the advancement of SSWM while highlighting the existing gaps in Malaysia. This study also aims to inspire stakeholders in Malaysia to develop a new SSWM-based model tailored to the waste management needs of specific localities.

2 Background of Waste Management in Malaysia

Similar to many developing countries, Malaysia experiences rapid urban migration when the rural population seeks better facilities and a modern lifestyle following urbanization and development. Unfortunately, this transition has significantly contributed to the volume of generated waste (JPSPN 2013), which are mainly by-products of consuming readymade food items, household appliances, discarded furniture, construction debris, and scrap metals. The National Department of Solid Waste Management in Malaysia (JPSN) conducted a national survey in 18 Local Authorities (LAs) across Malaysia in 2013. The national survey results in Fig. 1 indicate that the largest component in the national waste composition is food waste, constituting around 44.5%, followed by plastics 13.2%, diapers 12.1% and paper 8.5%.

In 2012, Malaysian individuals discarded an average of 1.0 kg to 1.2 kg of waste per day (Budhiarta et al. 2012). However, recent studies present a significant increase in the rate of generated waste, increasing from 1.1 kg to over 2.0 kg per day in some instances (M. A. Kamaruddin et al. 2017). Meanwhile, the rate of waste generation in 2012 was 33,130 tons/day, which has surged by 90% over the last decade, an alarming situation for the country. This situation creates environmental and public health threats such as climate change, declining water quality, and landfill overcapacity.

Handling waste generation has become an obstinate problem for the Malaysian government, and they have developed various strategies and policies to overcome these
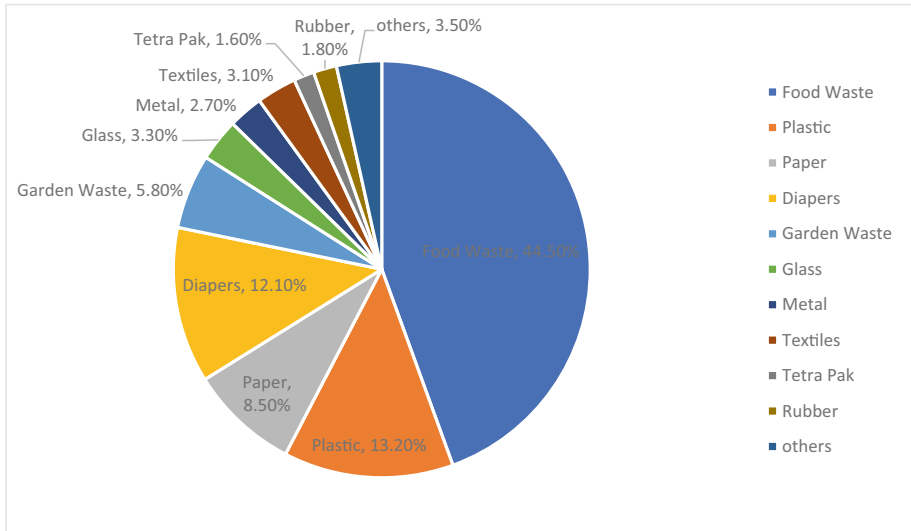
Fig. 1. Waste composition of Malaysian households. *Source:* JPSPN (2013).

challenges (Yusof et al. 2016). Due to its importance and urgency, researches related to appropriate and efficient waste handling strategies have received growing attention in Malaysia, and this study complements the current body of literature.

3 Background on IoT-Based Smart Waste Management

The growing population rate of cities has complicated the daily task of waste collection for municipal bodies (Camero and Alba 2019). Multiple solutions have been proposed to overcome waste management issues, and new technologies such as the IoT play a vital role in providing sustainable solutions to promote clean and sustainable Smart Cities (Shamsuzzoha et al. 2021). This section reviews previous works and studies on smart waste monitoring and management system, emphasizing on the current SSWM practice in Malaysia.

In general, the most common technologies utilized in SSWM can be summarized into for basic categories; a) global positioning based spatial techniques used in SWM to monitor the location of waste containers and collect vehicles (Yusof et al. 2018); b) Radio Frequency Identification (RFID) based identification technologies installed in the waste containers to identify the location and time the waste is collected (Hannan et al. 2011); c) systems based on data acquisition to observe the current status, mainly comprising multiple sensors including an image sensor, distance sensor or volumetric sensors (Omara et al. 2018) and; d) data communication system installed for the efficient communication and analysis of the collected data (Madureira and Dias-Ferreira 2019). A summary of the most common technology used in literature before IoT is presented in Table 1. It is also worth to mention that the advent of the fifth-generation (5G) technology and the digital industrial revolution will enable faster communication to incorporate

technologies such as the IoT to the physical world and allows for smoother development of smart and sustainable cities concept (Skouby and Lynggaard 2014). Figure 2 illustrates the SSWM system based on IoT in Smart Cities. The basic SSWM system includes smart waste containers, smart collection trucks (method), and a centralized Smart waste management system.

The trend towards applying SSWM is still in the early stages. Nevertheless, IoT-enabled waste trucks and sensor-enabled smart bins are gaining popularity worldwide, including in Malaysia (Kang et al. 2020). Thanks to the remarkable revolution in the industry which has drastically reduced the cost of sensor equipment and communication technologies. In the last few years, wireless sensor networks (WSN) have been widely deployed in several applications, mainly in remote monitoring purposes. This situation enables the eradication of the extensive web of wires, which significantly reduces the cost while extending network coverage with environmentally-friendly options (Mamun et al. 2016). The preference was also given to WSN due to the convenience and effectiveness of implementing IoT technology in waste management systems, which could be utilized to design a compact SSWM solution (Balandin et al. 2015; Kummitha and Crutzen 2017).

Table 1. A summary of common technology used for smart waste management (before IoT)

References	Technology used	Function
Nielsen et al. (2010)	Global Positioning System (GPS) and RFID-based route optimization	Optimizing waste collecting vehicles and automation of billing
Arebey et al. (2010)	Collection Monitoring Technology, RFID	Monitoring of collection vehicles and waste bins
Greengard (2010)	Reduced landfill space with barcode technology	Analyzing the waste path in real-time
Maruca et al. 2011	Risk management based on barcode technology	Identification and separation of banned materials in the waste
Glouche and Couderc (2013)	Storing and recycling based on RFID	Processing of waste items for sorting and recycling effectively
Gnoni et al. (2013)	Efficient billing based on RFID	Optimizing waste collection and weighing for automated billing purposes
McLeod et al. (2013, 2014)	Infrared sensor for scheduling of collection	Incorporating effective scheduling for the collection of waste
Catania and Ventura (2014)	Bin status monitoring with proximity and weight sensors	Analyzing bin status to optimize waste collection
Wagland et al. (2012)	Solid waste sorting with a digital camera (Image-based sorting)	Estimating composition of waste through image processing
Arebey et al. (2010)	Collection monitoring with the help of a camera	Analyzing bin status with a camera to improve waste collection

Hence, the use of sensor based waste containers was widely investigated by several studies, showing promising results with significant improvement in waste collection efficiency (Madureira and Dias-Ferreira 2019). Sensor-enabled smart bins are gaining popularity as they allow to performs several tasks at once. Mainly, they have been utilized to monitor the filling level and volume in waste containers, and to notify waste collectors on locations and filling status. A further advantage of such instant updates is to allow waste trucks to choose the best path for waste collection and move only towards the filled waste bins. This to achieve efficient routing techniques considering the least delay scenario, thus providing the infrastructure of effective route optimization. Such route optimization will also significantly contribute in time and cost saving, as well as lower air and noise pollution rates (Faye et al. 2019; Vairam et al. 2020; Zeb et al. 2019). Some studies have delved deeper into data collection in comparison to others where they equipped with RAFID readers, designed to collect data from tags located on the products to be disposed of. These data allow identifying differently disposed off product and specify the accurate waste bin for disposal. As well accurate waste truck based on waste type and quality (Abdullah et al. 2018; Yigitcanlar et al. 2019).
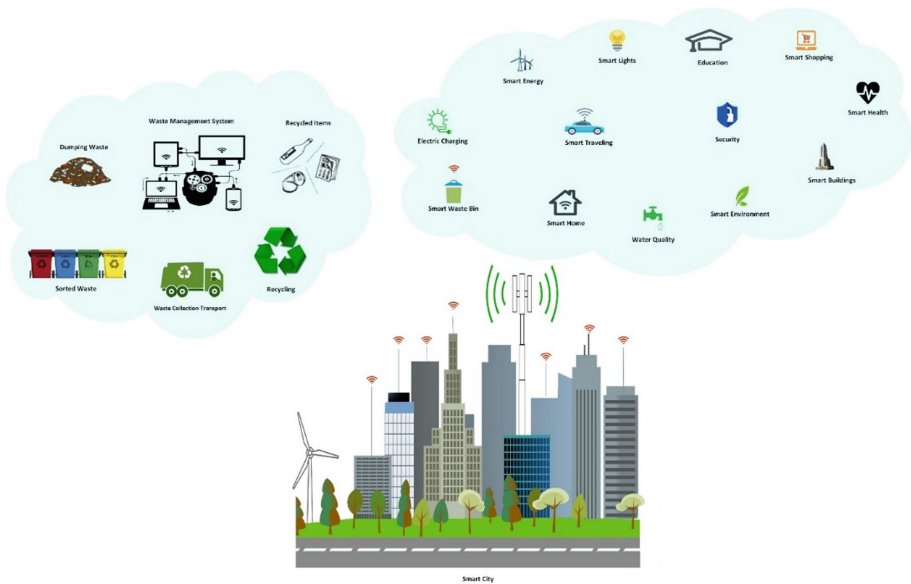
Fig. 2. IoT-based smart cities with smart solid waste management (SSWM) system

3.1 Current Smart Waste Practice in Malaysia

In Malaysia, SSWM is not a novel concept. In fact, the Malaysian government announced the adoption of the Smart City concept (11th Malaysian plan, 2016–2020) in Greater Kuala Lumpur, Iskandar Malaysia in Johor, followed by smart programs such as Smart Selangor and Putrajaya Smart City (Kassim 2016). One of the objectives of integrating

technology and the Smart City concept is to enhance cities' municipality tasks ranging from smart solutions to cost-effective SWM (Begawan et al. 2019). Additionally, one of the earliest studies conducted by Malaysia's Ministry of Science and Technology Innovation (MOSTI) is evident in its assignment of the National Space Agency to develop Smart Waste Management System (SWMS) as part of the Spatial Smart City Service Delivery Engine (SSCSDE) Project (Omar et al. 2016). The proposed SWMS involves the city's local municipal council, the waste collection contractors, and consumers. The local council is responsible for adding, registering, viewing data from the sensors, updating assigned contractors, ensuring that the collection is carried out as scheduled, and responding to consumer complaints. The SWMS was piloted in several areas in Sepang and Hulu Langat Selangor and researchers in Malaysia have later adopted the same solutions.

Based on the current literature, there are few proposals and even attempts to implement SSWM techniques in several locations in Malaysia. For instance, Muniandy et al. (2018) explained that SWMS operates using IoT to enable the system to monitor the bins in real-time. On another note, Jayaraman et al. (2019) and Kang et al. (2019) proposed a smart waste method for electronic and electrical waste (e-waste) management and electronic equipment (EEE) waste. Kang et al. (2019) presented a promising attempt for a smart e-waste solution system in Malaysia, in which smart electronic waste boxes were installed in defined locations, and a mobile application was developed to facilitate the operation. Once the individual decides to discard e-waste, the mobile app will recommend the nearest discharge location with GPS and Google Map application. When the individual reaches the waste collection point, they must scan a quick response (QR) Code via the application and take a photo of the disposed of e-waste. Finally, they will be rewarded with rewards points according to the type of discarded items, which are later redeemed with certain offers. In addition, the mobile application provides information on the location of e-waste bins and their gauge level. Similarly, the number of e-waste boxes are fortified with ultrasonic sensors and wireless connection to share information with a centralized database server. When e-waste boxes reach the threshold level, an automatic email is sent to the waste collection company. This method allows collecting e-waste with maximum efficiency within time and fuel optimization.

In a related effort, Harith et al. (2020) presented route optimization for waste management in Malaysia by implementing Dijkstra's algorithm whereby real-life parameters, including bin status, road congestion status, and optimal distances, are considered in estimating the link cost. The proposed routing protocol is more cost-effective and environmentally friendly than the conventional protocol. In another study, solid waste collection route optimization was integrated based on GIS-ArcView, in which five routes were selected from different areas in Ipoh city, Malaysia, mainly to reduce the length of routes and time consumed (Malakahmad et al. 2014). The results indicated that the proposed route optimization technique was effective in reducing the length by 22% and time-saving.

In addition, few smart waste-related applications are available in Malaysia, usually targeting certain types of waste or limited to specific geographical locations. For instance, *iClean Selangor*, and *iOWT*. The *iClean Selangor* is a successful application used by Kumpulan Darul Ehsan Waste Management Sdn. Bhd. (KDEBWM) from July

1st, 2016, which helped resolve issues caused by overflowing domestic bins. The *iClean Selangor* application was made accessible to the public since users can download it from Google Play Store. After registering, users can update the contractors by sending images of uncollected wastes to the command center for further action. The waste collection personnel will be alerted using a special application for collection purposes (Kamaruddin and Omar 2011; MBI 2016). Meanwhile, other publicly accessible App, *iOWT*, is operated by iCYCLE Malaysia to encourage residents to practice source separation of their waste. The application allows the users to sell their sorted waste to interested parties using the application and iCYCLE bins.

3.2 Smart Selangor

In this particular study, it is noteworthy to mention the *Smart Selangor* vision, introduced during Selangor Smart City International Conference in 2016. The purpose of this transformation is to develop technological-based facilities and infrastructure to improve the state's economic growth, sustainability, and the people of Selangor's life quality (MBI 2016). The smart concept could propel the state's business environment to a higher level, creating employment for the people of Selangor and better income for the younger generation (SSDU 2016). The Smart Selangor master blueprint has four elements: Smart Waste Management, Smart Digital Infrastructure, Smart Governance, and Smart Education (Ngah 2018). These elements were further expanded into 12 domains drafted based on the government's interaction with Selangor state citizens, including the SWM (MBI 2016; SSDU 2016).

4   Implementation Challenges in Malaysia

Numerous information and communication technologies have been integrated to develop SSWM while empowering the vision of Smart Cities, in which many studies have employed the SSWM system considering its importance. Since SSWM is still a developing research area, current work and publications could fill the research gap for future SSWM system implementation in Malaysia. Moreover, analyzing different proposed studies in terms of limitations and acknowledging the proposed system's capability could define the optimum boundaries for further SSWM developments and improvements. Some of the challenging factors in implementing SSWM in Malaysia are discussed below.

4.1 Incomplete System Design

Most studies have not considered a complete practical implementation of SSWM, which involves multiple aspects, thus demonstrating the incomplete model of SSWM in studies or publications. Studies based on identification technologies focus on tracking and identifying the tracks and vehicles but failed to provide a reliable solution for the monetization of bin level status or challenges associated with spatial technologies. While another type of technology discussed in literature involves spatial technologies primarily based on the collection, classification, and demonstration of the spatial information

regarding routes, vehicles, and status but unable to provide the active status of bins. On a similar note, data acquisition-oriented studies offer the solution for data collection and bin monitoring strategies but are incapable of segregating spatial-based information. Therefore, there should be a proper design integrating all the crucial aspects for practical implementation, including cost, robustness, reliability, complexity, and environmental aspects, which is achievable by overcoming the gaps with the integration of smart and updated technologies. (Aazam et al. 2016; Hisham Che Soh et al. 2019; Mustafa and Azir 2017; Omar et al. 2016; Wahab et al. 2014; N. M. Yusof et al. 2018).

Most importantly, all current studies are focusing on the smart collection practice once waste been placed in trash bins, without paying the necessary attention on the waste generation stage, which involve households participating in smart waste management practice of smart recycling and waste separation. This an extreme important element which will change the way we look into waste management.

4.2   Limited Data Availability

The unavailability of reliable data to deploy the SSWM system in Malaysia is one of the main hindrances in attaining effective planning and designing. Literature has proven that the proposed system usually incorporates statistical analysis and survey-oriented data at various stages of waste management, including generation, collection, and recycling waste (Hannan et al. 2011).

Although it was not clearly reported, it was noticeable from the literature that in most experiments, the data on bin level were insufficient, or the weight of the waste were measured physically by the weighing tool after collection. This implies that the weight, volume, and waste condition are not auto-updated, which would be a great advantage if it was. Despite this situation, it can be achieved by integrating technologies for extracting data, including the camera, temperature sensors, ultrasonic sensors, and humidity sensors. In contrast, RFID technology is integrated to identify the trash bin.

In addition, further improvements should be considered by utilizing the current AI technology and analyze data collected from sensors to; (a) predict the fill patterns based on previous consumption behavior and upcoming events; (b) optimize drivers' schedules and routes, as well as safety precautions, and; (c) minimize unnecessary expenditures.

4.3   Cost-Related Challenges

It should be noted that most studies incorporate GPRS or GSM-based technologies for long-haul data communication, which may result in extensive operational cost, while some studies integrated GPRS for individual bins, creating additional cost (Faccio et al. 2011). In addition, up until today, smart waste types of equipment are treated as luxury items. Hence, they are overpriced due to the current targeted consumers. Hence, there is an urgent need for proper economic valuation studies to evaluate the smart waste management method. To the best of our knowledge, there is no such study published in this area.

4.4 Absence of Waste Segregation

Several studies have overlooked the integration of segregation facility at the source, increasing the operational cost each time the waste is dispatched. Integrating segregation at the source could initiate and assist effective recycling and allow separating hazardous and non-hazardous waste to be handled effectively, achievable by incorporating technology such as RFID or barcodes to classify waste. Limited studies have employed segregation as they have many issues, including requiring extra space. An adaptable design that could detect and separate the categories of waste along with extra bins, and time regulation for the dispatch of waste for effective waste management (Zsigraiova et al. 2013).

4.5 Dynamic Routing and Scheduling

The integration of dynamic routing and scheduling in SSWM can improve collection efficiency, reduce operational cost and environmental pollution. These improvements can be achieved through the extracted real-time bin level information, which defines optimal routes. However, limited studies have implemented dynamic scheduling since most of the system failed to deliver active or real-time status of the trash bin (Arebey et al. 2012). Hence, there is a need to integrate an effective system that conveys the bin's active status and an optimized algorithm based on these statuses. These algorithm models should be tested on simulation before implementation, which could increase computational complexity when considering a practical scenario for simulation.

5 Conclusion and Future Directions

Globally, waste generation is estimated to increase by 70% in 2050; hence we are confident to say that waste is piling up (Schrader-King and Liu 2018). In this context, several studies on IoT-enabled smart solid waste management techniques have been successfully implemented and showing promising outcomes in smart cities from around the world, including Singapore, Barcelona, San Francisco, Seoul, and Seattle (Networks 2018). Despite this success, future directions need to be considered by developing countries such as Malaysia to implement SSWM systems successfully:

a. The growing population rate has created higher demands for the implementation of SSWM in the city. Moreover, the transfusion into SSWM methods could cost more due to the required investment in new smart infrastructures. However, these costs will eventually be minimized as these infrastructures will be essential for many other services in the SC.
b. Most current smart waste bins rely on electrical sources. Future directions should replace these with renewable energy through photovoltaic (PV) panels, especially the public bins.
c. Behavioral-related studies are essential in understanding household's behavior toward different types of waste management (Tucker and Speirs 2003). Hence, encouraging smart solid waste management-related studies will be a critical step in this transformation journey.

Finally, there are other constraints found to affect the transformation to smart cities. These include a lack of understanding of how and where to start, over-reliant on legacy systems, and finally missing leadership supports (Araral 2020).

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Securing a Question-Based Multi-factor Authentication System Using LSB Steganography Technique

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Abstract. User authentication is a vital security requirement for most service systems". Text-based password is commonly used to authenticate the identity of users in most computer systems. The use of a strong password makes it difficult for the user to remember it. Therefore, the password should be saved on an external disk or written on a memo that can be referred to when the user forgets it.

Graphical password is one of the authentication solutions used to solve this problem in order to help the user remember the password without it being discovered or broken by password hackers or attackers.

This paper proposes a question-based authentication system, which has benefits over both text and graphics passwords along with the use of steganography. The combination of steganography and graphical authentication protects sensitive data exchanged between the user and the server and reduces the risk of passwords being exposed. In the experiment, the peak signal-to-noise ratio and average squared error parameters were calculated to test the effectiveness of the steganography method in the graphical password.

Keywords: Security · Authentication · Graphical password · Steganography

1 Introduction

Authentication is a basic security requirement that determines who is allowed to access resources within the system. Most information systems rely on a text password to authenticate a user's identity despite the security and usability problems they have [1]. Hackers can guess or crack weak or short passwords using a variety of password-cracking techniques, such as brute-force and dictionary attacks [2]. Passwords need to be strong and sufficiently long to avoid security threats. This will make them hard to guess or crack. However, it is impossible to remember all strong passwords. In this case, the user is forced to save passwords on external disks or write them down on a note for reference every time he logs in to the system. As a human can remember visual information better than text strings, graphical passwords have been suggested to overcome text-based problems.

A graphical password is an authentication method that uses images and drawings in place of letters, numbers, and symbols [3]. A recognition-based technique is one of the most prominent methods used to generate graphical passwords. The user at the registration stage chooses a specific image from a set of images given. Then during the authentication process, the user has to recognize the choice he made among a set of candidate images [4]. In terms of security, recognition-based passwords contain a small password space that makes them vulnerable to brute force attacks [5]. Furthermore, the use of graphical authentication in the online environment poses many security challenges due to numerous web-based vulnerabilities [6, 7]. For example, an attacker might be able to intercept passwords as they travel over the Internet to the remote server.

Steganography technology can be used to hide a confidential text or an image inside a non-confidential image to avoid revealing confidential data during transmission over the Internet [8]. The most common technique used in this field is Least Significant Bit (LSB). In this type of steganography, confidential data is embedded in the less significant bits of the cover image [9]. The use of steganography can also be combined with any of the strong encryption techniques as an additional step to protect data in transit [10]. The combination of a graphical password, cryptography, and steganography is essential to create an adequate and secure authentication method.

This paper aims to develop a graphical authentication method, which incorporates both text-based and graphical passwords besides the Least Significant Bit (LSB) steganography technique. The proposed multi-factor password increases the security between the user and remote server over the Internet. The authentication system is based on a secret question and its key answer in addition to a graphical password. An authentication process requires the user to reply to some correlated challenges to access the resources.

The rest of the paper is structured as follows. An overview of recent research literature is presented in Sect. 2. Section 3 demonstrates the design of the proposed system in both registration and authentication stages. Section 4 analyzes the security and usability aspects of the proposed method. Finally, Sect. 5 shows and discusses the experimental results of the authentication system.

2   Literature Review

Several different authentication systems have been proposed in recent years. In the beginning, we will review some of the research that contributes to the development of graphical passwords, and then others that use steganography techniques in authentication systems.

Pogale and Deepak in [6], propose an authentication approach to popularize the idea of a text password to increase the security level. They have developed a Graphical Password Authentication System (GPAS), which is similar to the PassPoint system and it conveys user information during the authentication phase graphically. Users select and answer a set of questions that the server presents during the registration phase. Then, the authentication server displays the images as a challenge in the authentication process and users must choose the correct image to answer the given question.

The graphical recall-based authentication scheme in [7] entails three levels of verification. In order to enhance the security of PassGo method, the authors added secret questions, answers, and background images to the proposed scheme. The user first must answer a secret question, followed by inserting a background image behind the grid. The user then creates a password by connecting straight lines to create a shape.

In [8], A. Khan et al. proposed a swipe-based scheme called graphical random authentication technique (gRAT). It emphasizes both graphical user authentication and password usability simultaneously. Users select their passwords from a 3 × 3 images grid and then swipe the images to generate the graphical password. gRAT generates a random set of images in the authentication process, in which the user has to draw the corresponding patterns in the same order.

The method proposed in [9] incorporates security attributes and usability of both recognition-based and recall-based algorithms to overcome drawbacks. The proposed scheme is similar to Pass-Face algorithm in which users are required to choose decoy images displayed on a screen to register and verify their identity. In the next step, the alphanumeric characters should be entered in the same order as the images selected in the registration step. Another authentication method has been proposed in [10]. This authentication scheme combines security aspects of Pass-Points and Press Touch Codes. In contrast, the hybrid graphical authentication scheme in [11] combines recognition and recall-based features. The registration process allows users to set text-based usernames and passwords, and they based on the objects displayed can select graphical passwords. A stylus must then be used to draw objects on the screen using a touch-screen. In the authentication stage, users enter their usernames, text passwords, and graphical passwords similarly as they registered in the registration phase.

Anitha et al. in [12] have proposed the authentication system, which combines cued click point method with steganography to encourage users to select more random click points that would make the graphical password more difficult to be guessed. The steganography is utilized in this scheme to improve security by hiding text passwords within the selected image.

The efficiency of the Passpoint-based graphical password has been improved in [13]. The graphical password points are encrypted and then hidden by one of the steganography techniques. Thereafter, the encryption key is stored in a database server. Images stored on the server can be decrypted using this secret key. The use of tabular steganography improves database security and reduces the amount of storage required.

A secure authentication scheme using visual cryptography and stenography techniques has been presented in [14]. In the beginning, the user must choose one cover image and then creates a private question and answer. A steganography technique is used to hide the answer in the cover image. Subsequently, the server generates two shares of the selected cover image using the visual cryptography technique. The first share is sent to the user and the other share is kept on the server. In the authentication phase, the user has to enter his username, password, and share. User and server shares reveal the cover secret image and are used to get the hidden answer to answer the secret question.

In [15], the authors developed an image and area selection scheme. The image zoom factor is used as a security key by comparing the pixel values of selected areas in an enlarged image. To improve security on platforms, the proposed scheme combines image and area authentication. It provides one-to-one authentication for low-resource embedded devices with low memory usage.

3   Proposed Method

The proposed multi-factor authentication system provides an additional layer of security for remote communication between users and service provider servers. The system includes a secret question, graphic password, and key answer. During the authentication process, the user has to respond to some interrelated challenges to complete the authentication process successfully. First, the user must register in the system so that he can later access the services provided after successfully passing and implementing the successive authentication steps.

At the registration stage, once the user creates an account, a random dynamic string (salt) is generated in the user's profile in order to protect the stored hash code from dictionary attacks. Then, a random list of various questions is displayed with a grid display of all the images associated with these questions within the list. The user chooses one secret question and selects the appropriate picture that helps the user answer that question. Once the appropriate image is selected, the secret question is hidden inside the image after it is encrypted with one of the strong encryption methods. Finally, the user is asked to answer the question by entering a text answer in the displayed field, where the answer is hashed using one of the hashing algorithms after the salt is added to it, and then the hash result is stored in the user's file in the database. Figure 1 shows the successive registration steps that the user must follow to register his/her hybrid password.
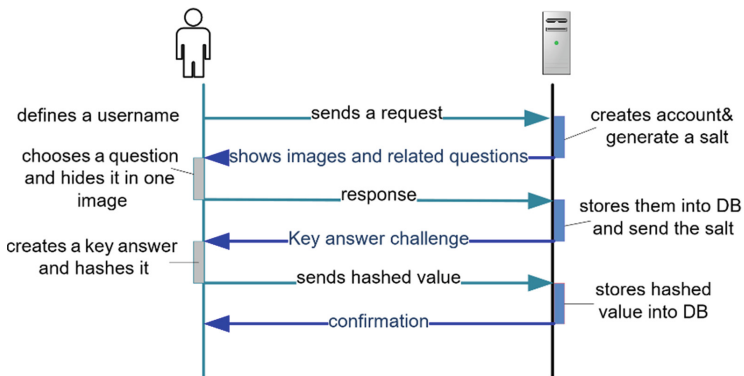
Fig. 1. Sequence diagram of the registration stage

To validate the user's identity, the user must successfully pass all challenges encountered during the authentication process.

Initially, the user has to type the username to get a grid of various images, which includes the image that the user has chosen during the registration process. The user must select the correct image to show the question hidden within it. This image enables the user to remember the answer to the secret question, which the user must type to answer the question. When the user enters the key answer, the salt value stored in the user's account is added to calculate a new hash, and then it is compared to the value stored in the database to verify the identity of the legitimate user.

Figure 2 shows the authentication steps that a user must follow to access services within the system.
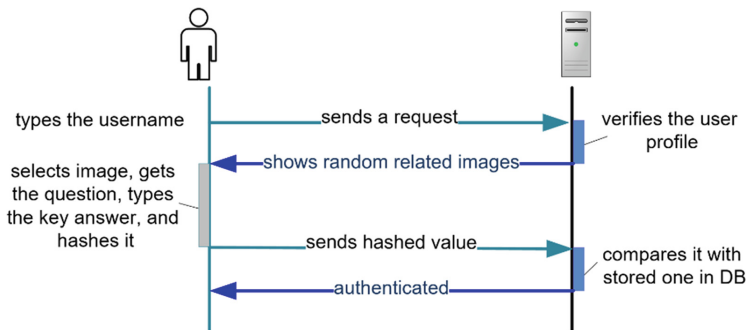
Fig. 2. Sequence diagram of the authentication stage

4   Security Analysis

The security of the proposed method and the strength of the graphical password can be checked based on the measurement of entropy and password space. Password security features depend on the following main challenges that are choosing the secret question, choosing the appropriate picture to answer this question, and finally determining the key answer to answer the question.

4.1 Entropy Calculation

Password entropy helps to determine the strength of the password and its resistance to brute force attacks. It estimates the number of attempts an attacker can make to guess the password. According to the proposed method, the entropy first is represented by selecting a question from the list stored in the database as computed in Eq. 1.

$$E(Q) = - \sum_{i=1}^{m} p(q_i) log_2 p(q_i) \tag{1}$$

where Q – the number of questions in the database, m – the list of random questions in every round, and $p(q_i)$ – the probability of selecting question i from the list.

The entropy of guessing the proper image from the grid shown to the user when he communicates with the system is calculated by Eq. 2, where S – set of images in the database, n – the number of random images in the grid, and $p(g_i)$ – the probability of selecting image i in the given grid.

$$E(S) = - \sum_{i=1}^{n} p(g_i) log_2 p(g_i) \tag{2}$$

Finally, the entropy of the key answer can be calculated using Eq. 3, where P – the pool of unique characters used in the text-based answer, and l – the length of text.

$$E(A) = \log_2 \left(P^l \right) \tag{3}$$

4.2 Password Space

The password space contributes to secure authentication methods. It is referred to as the size of the composite keys applied to authentication systems so that users can choose one password from a pool of possible passwords. The password space for the proposed system can be calculated as follows. The password space of given questions in the list is calculated using Eq. 4.

$$Q_s = \sum_{i=1}^{q} T^q \tag{4}$$

where, q – the number of random questions in the list, T – the total number of secret questions in the database. While the password space of the image grid equals G^n where G – the total number of available images in the system, n – the number of images in the grid. Whereas the password space of the key answer equals 95^l, where, l – the length of answer text.

5   Results and Discussion

In this paper, we will evaluate the effectiveness of the proposed system by hiding the secret question inside the graphical password., the mean square error (MSE) and peak signal-to-noise (PSNR) parameters are used for this. MSE measures the cumulative squared error between the cover and stego images, while PSNR represents the peak error. The MSE value has a direct relationship to the error. The lower the MSE value, the lower the error. The PSNR standard is commonly used as an initial image quality check by measuring the difference between cover images and the stego images used. The PSNR value can be determined by first calculating the mean square error using Eq. 5, where m is the number of rows and n is the number of columns in the image.

$$MSE = \frac{1}{m.n} \sum_{x=0}^{m} \sum_{y=0}^{n} \left[I_1(x, y) - I_2(x, y) \right]^2 \tag{5}$$

Equation 6 calculates the PSNR value of the cover and stego images used, where r –the maximum pixel intensity between the cover and stego images.

$$PSNR = 10 \log_{10} \left(\frac{r^2}{MSE} \right) \tag{6}$$

The proposed authentication system was implemented using the Python programming language in addition to the MySQL database to store images, questions, and user data on the Linux server.

We prepared 80 different images categorized by themes where all the images were cropped and modified with Adobe Photoshop to be the same size dimensions 100×100

Table 1. Questions and images of the experimental study

Original image	Question	Stego image
	What type of coffee do you prefer to drink in the morning?	
	Which of the proposed countries would you never go to?	
	Which pet do you not accept at home?	
	The nature of which country is the most beautiful for you?	

pixels. Several images are displayed at a time randomly on a 4×4 grid. Besides, 30 questions have been prepared so that the images used are an answer to those questions. These images help the user to remember the answer to the question so that he can write the key answer at the last stage.

In this experiment, we chose four random images to answer the questions as shown in Table 1, where we hid the selected question after encryption inside the image using the LSB algorithm.

Figure 3 shows the PSNR and MSE results of the images used in the experiment as samples. In the image, the values of the images are very close, although they differ in color and quality, the small size of the hidden text does not affect the original images used in the experiment. Figure 4 illustrates the variations between the original and stego image after hiding the encrypted question inside it.
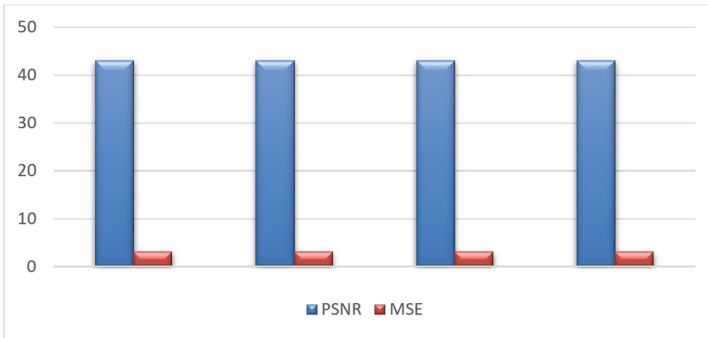
Fig. 3. The relationship between PSNR and MSE of the samples
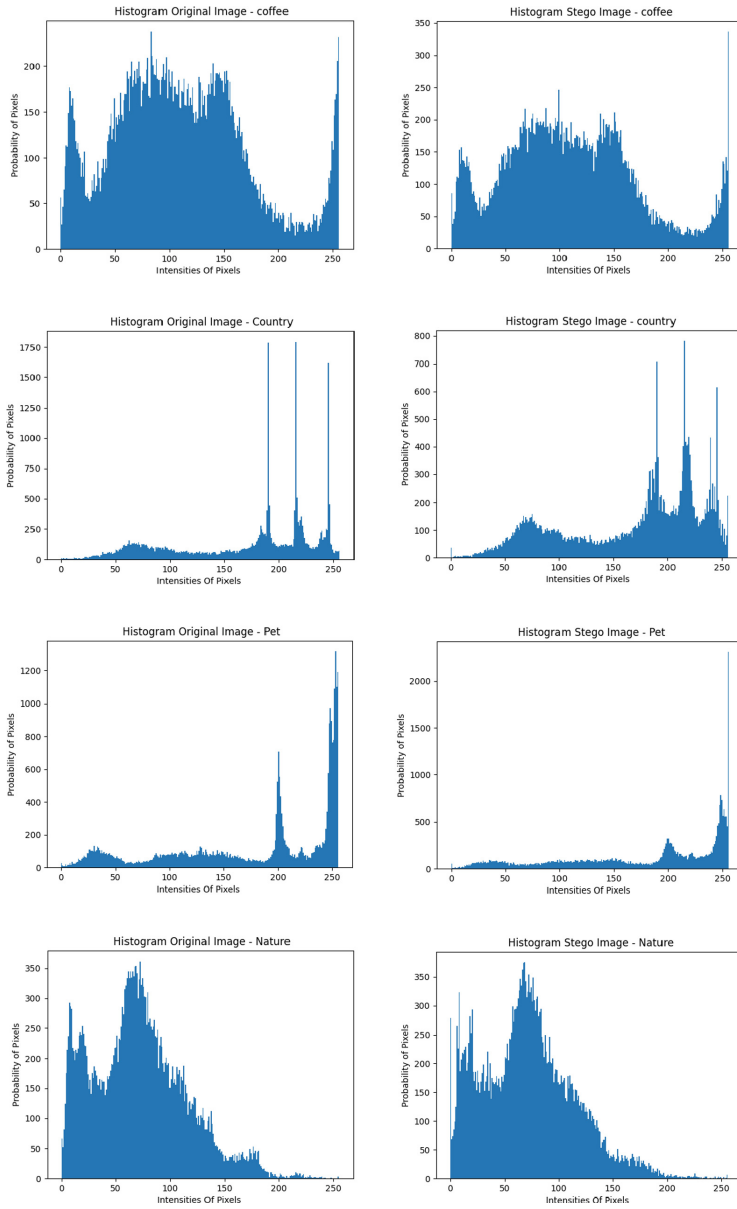
Fig. 4. Histogram of stego image after steganography.

6   Conclusion and Future Work

This paper presents a hybrid steganography-based authentication solution that integrates both text-based and graphical passwords. LSB steganography provides an additional layer of security for remote systems to provide a more secure and convenient environment.

In the proposed system, users can easily remember their text passwords without having to record them on paper or external memory. The primary security features underlying the proposed system were analyzed according to common security measurement aspects such as password space and entropy challenge. Moreover, The effectiveness of steganography was evaluated using the PSNR and MSE. parameters. The experimental results showed that the PSNR and MSE values were stable between the different images although the transcripts stored in each image were different.

The proposed graphical password has some limitations, as it requires more storage space in order to store the key answer in a separate image for each user. Also during the authentication stage, shoulder surfing could compromise graphical passwords when the user types the answer key.

It is necessary to conduct further research to address the limitations of the proposed system. The next step should be to explore effective ways to integrate graphical passwords without compromising image quality. Besides improving the performance of the system, other critical aspects like ease of use and security will be considered as well.

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Fear and Panic Buying Behavior Associated with the Outbreak of COVID-19 Pandemic in Palestine

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Abstract. This research aims at empirically investigating the effect of fear accompanied with the outbreak of COVID-19 on the emerging panic buying behavior in Palestine. Fear dimensions are assumed as reasons for the emergence of panic buying behavior, and include fear of infection, fear of food scarcity, fear of job loss, and fear of crime. This study included an online survey of a convenience sample of 367 reached through electronically administered questionnaire using e-mail and social media platforms. The research hypotheses were tested using multiple linear regression. The results show that the fear of infection, fear of food scarcity, fear of job loss, and fear of crime are predicting higher scores of panic buying behavior. The research findings contribute to existing knowledge on panic buying behavior as the research is uniquely theorizing and testing the mechanisms, by which such psychological dimensions of fear, worked in explaining buyer panic behavior during the early stages of COVID-19 pandemic; where prior research is lacking. Furthermore, this research represents a core point of intersection between two different, yet interdependent disciplines - consumer behavior and psychology. The current research conceptual model uses psychological construct (fear) to explain consumer behavior construct (panic buying). This study provides valuable information and insights on implementing appropriate policies and strategies to mitigate public fear and curb panic buying during pandemic times.

Keywords: COVID-19 · Fear of infection · Fear of food scarcity · Fear of job loss · Fear of crime · Panic buying behavior

1 Introduction

On March 11, 2020, coronavirus disease (COVID-19) was declared a pandemic by the World Health Organization [41]. It was evident, especially at the early days of COVID-19 pandemic, how people's consumption patterns changed toward satisfying these basic needs, which reflected the state of "fear". This type of fear resulted in totally different consumption behaviors compared to the time before the outbreak of the pandemic, as evident by people buying and hoarding food in large quantities, security services and products, telecommunication service, internet, online shopping, and sanitizers [2, 39].

Therefore, the coronavirus pandemic created "economic anxiety" [17], and constitutes the antecedent sum of fear that has various consequences. Panic buying occurs when fear influences people toward buying more things than they usually do [23]. Therefore, panic buying phenomenon is significantly tied to the emergence of COVID-19 pandemic [30], and is still spreading around countries causing stockouts and supply chain disruptions [43]. Consequently, panic buying has received much attention from academics and the retail industry [43]. However, research efforts of this emerging behavior are still limited especially psychological based research [5]. The emotion of fear, in general is still very underexposed in literature [17]. In particular, panic buying, is a relatively new area in consumer buying behavior that needs further investigation [43] where such behavior is complicated by emotional and social influences [22, 38].

Hence, current understanding of panic buying triggered by the COVID-19 pandemic is quite limited [43]. Thus, investigating antecedents of panic buying would empirically further the knowledge on the topic and allow public policy makers and retailers to effectively address the key precedents of this behavior [43].

The purpose of this research is to empirically test the effect of COVID 19 dimensions of fear on the emerging panic buying behavior in Palestine. This would contribute to literature on effects of consumption under fear, as well as provide practical implications for marketers and public policy makers.

The next part of the paper discusses the research pertinent literature and theoretical framework. The third part narrates the methodology of the research. The final part presents results of data analysis, discussion, and implications for marketing and public policy makers.

2 Literature Review and Theoretical Framework

Fear is strongly affecting human behavior, especially during the troubled times [23]. During many crises, over-buying of necessities has been observed, and sometimes leading to scarcity of basic goods [5]. The Great Lockdown associated with the COVID-19 pandemic came with an unpredictable level of economic uncertainty [37]. This situation created a unique emotional distress found to be associated with buyer panic behavior. Such feelings of anxiety and fear drove people to buy in large quantities [20], and had intensified impulse buying patterns [1].

The following section, based on previous studies and relevant literature, discusses and theorizes the different types of fears individuals' perceive constituting the dimensions of fear of COVID-19 pandemic as these fears are triggering panic buying behavior. As they appear in the research conceptual framework presented in Fig. 1.

2.1 Fear of Food Scarcity

Food security refers to the accessibility and availability of healthy food to all people at all times [8]. However, as the COVID-19 pandemic situation makes people feel uncertain about the future developments of the pandemic, purchasing as many basic goods as possible is a way to relief their fears [10]. Panic buying behavior can occur and be
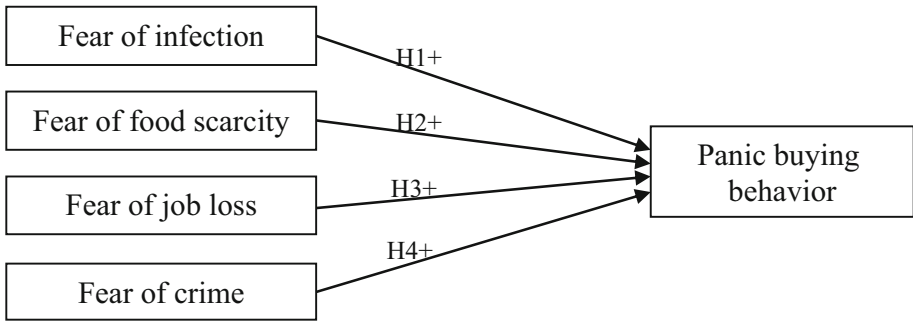
Fig. 1. Research model and hypotheses

increased as a result of news in the mass media about the potential food scarcity [10]. Accordingly, the first hypothesis can be concluded as follows:

H1. Fear of food scarcity will be positively correlated with panic buying behavior during the early stages of the COVID-19 pandemic.

2.2 Fear of Infection

Health anxiety created by the spread of COVID-19 is a predictive of increased fear of the virus [26, 27]. Particularly, danger and contamination are identified, among others, as a factor of stress and anxiety symptoms relating to the COVID-19 [36]. Therefore, the COVID-19 pandemic had increased buyers anxiety levels and had widely triggered panic buying behavior [21]. Thus, the second hypothesis can be developed as follows:

H2. Fear of infection of corona virus will be positively correlated with panic buying behavior during the early stages of the COVID-19 pandemic.

2.3 Fear of Job Loss

Typically, fear of losing a job refers to the anxiety and tension that an individual feels due to the possibility that he may lose his\her current job [7]. However, some of the recent empirical research indicates that the spread of COVID-19 the is getting workforce more concerned about their future careers [25].

There are many consequences of fear of job loss in literature. Fear, as such, causes anxiety and negatively affects the workers and their dependents [7]. In addition, by consequence, their buying behavior [32]. Thus, panic buying behavior is not simply driven by economic considerations, rather, it is driven by fear. Thus, the following hypothesis is formulated as follows:

H3. Fear of job loss will be positively correlated with panic buying behavior during the early stages of the COVID-19 pandemic.

2.4 Fear of Crime

Fear of social insecurity includes a wide range of perceptions in areas such as social disorder, police ability to enforce the law, risk of victimization, personal harm and

property theft [31]. However, the potential consequences of fear include behavioral changes [28]. With the outbreak of COVID 19, fear of contagion has been associated with "dysfunctional fear", this, by contrast, involves people worrying about crime and low levels of life quality [35]. Such fears could fuel anxiety-driven panic buying behaviors. Thus, the following hypothesis can be formulated:

H4. Fear of crime will be positively correlated with the panic buying behavior during the early stages of the COVID-19 pandemic.

3   Methods

3.1   Sample and Sample Size Determination

Sample elements were reached through electronically administered questionnaire using e-mail and social networking sites. In total, 367 respondents took part in the online survey. The minimal sample size of this study was calculated using the priori power calculation. This analysis calculates the required sample size considering some expected size effect, alpha, and power [16]. The priori power calculation calculated the minimal sample size as 33 respondents to give satisfactorily statistical power (0.80) to detect small sized correlation coefficients (0.20). (see https://www.sample-size.net/correlation-sample-size/).

However, that number of respondents represents the final sample participants who actually filled out the questionnaire completely and with no missing values. Thus, the sample type is a convenience sample. However, the majority of the research sample consisted of males (59.4%), with a vast majority older than 34 (74.1%) years of age, and most participants belong to the average monthly income category ranging from 1000 to 1500 JD (39%). (see Table 1 for the full demographic profile of the sample).

3.2   Measures

For all of the study variables paricipants were asked to provide their level of agreement on a 5-point Likert scale (1 = "Strongly disagree", 5 = "Strongly agree"). The scale items are summarized in Table 2. All of the statements, items of the research variables, and constructs were identified and adapted based on the relevant literature. Some adaptations have been made on the scale items making it more relevant to the early stages of the outbreak of COVID 19.

Table 1. Respondents demographics

Sample demographics	Frequency	Percentage	Cumulative (%)
Gender			
Male	218	59.4	59.4
Female	149	40.6	100
Age			
Under 24 years of age	52	14.2	14.2
25–34 years	76	20.7	34.9
35–49 years	144	39.2	74.1
Over 50 years of age	95	25.9	100
Average monthly income			
Less than 500 JD	64	17.4	17.4
500–1000 JD	106	28.9	46.3
1000–1500 JD	143	39	85.3
More than1500 JD	54	14.7	100
Education			
High school	73	19.9	19.9
Vocational diploma	66	18	37.9
Four-year college	123	33.5	71.4
Post-graduate	41	11.2	82.6
Other	64	17.4	100
Employment			
Full-time	209	56.9	56.9
Part-time	104	28.3	85.3
Other	54	14.7	100
Place of residence			
City center or near it	244	66.5	66.5
Rural	123	33.5	100

Notes: n = 367

4   Results

4.1   Scale Reliability and Factor Analysis

The scale's reliability was assessed by internal consistency reliability through Cronbach's Alpha test (see Table 2). Cronbach's alpha for the study variables is ranging from 0.711 to 0.852. Therefore, the scale of measurement is reliably internally consistent and can be accepted as an alpha of 0.7 [14, 33].

Table 2. Variables and measurements

Variables	Measures	Adapted from
Panic buying behavior (α = 0.797)	1. I bought goods to stock at my home	[23]
	2. I preferred to buy in big quantities of products before they run out from the market	
	3. I bought more things than I usually do	
	4. I was feeling that stoking a good amount of products at my home relieves my anxiety	
	5. My buying habits were reflecting my feeling of uncertainty	
Fear of infection (α = 0.852)	1. The outbreak of COVID-19 was making me very worry	[27]
	2. I was committing to the preventive measures to avoid infection (e.g., washing hands, social distancing)	
	3. I was always following news updates about the virus	
	4. I stocked up on supplies to face the uncertainties accompanied with the coronavirus	
	5. I was convinced that coronavirus is more dangerous than the seasonal flu	
	6. I felt that the health authorities cannot contain the virus	
	7. I was worried that my family or friends will catch the virus	
	8. I was more careful than many people to not become infected	
Fear of food scarcity (α = 0.776)	1. I was afraid that my food would run out	[12]
	2. I was worried I wouldn't have money to get more food	
	3. I couldn't afford to feed myself or family because I didn't have enough money	

(*continued*)

Table 2. (*continued*)

Variables	Measures	Adapted from
	4. I relied on only a cheap and simple food	
Fear of job loss ($\alpha = 0.729$)	1. I felt uncertain about the future of my career	[3, 9, 29]
	2. I worried about the continuation of my current work	
	3. I was afraid of losing my job	
	4. I was afraid of being fired	
Fear of crime ($\alpha = 0.711$)	1. I was afraid of being attacked on the street by a beggar	
	2. I was afraid of being conned, or swindled out of my money	
	3. I was afraid of having someone break into my home while I'm away	
	4. I was afraid of having someone break into my home while I'm there	
	5. I was worried of having my car or property stolen	
	6. I was worried of having my property damaged by vandals	
	7. I was afraid of being attacked by someone with a weapon	
	8. I was afraid of being attacked or mugged on the street	
	9. I was afraid of being murdered	
	10. I was afraid of being raped or sexually assaulted	

A factor analysis was employed to assess the construct validity of the measures. The decision was based on the results of the sufficiency and suitability test of data for the execution of factor analysis of the research constructs. Therefore, KMO and Bartlett's Test of Sphericity was conducted for the research constructs. "Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy values above 0.60 or 60 per cent show that EFA can be used" [13: 499]. The results showed that the KMO was 0.805 which is middling [18], or good [15], while Bartlett's Test of Sphericity is statistically significant at $p = 0.000$; smaller than significance level 0.05, with an approximate Chi-Square value of 3770.550, and a degree of freedom of 300 indicating that correlation matrix possesses significant information. Accordingly, the factor analysis with principal-component factoring methods was conducted (see Table 3). The primary factor loadings of items was acceptable as the KMO value is greater than 0.5 [14]. Three items were excluded from the scale as they were loaded on more than one dimension at once. Accordingly, factor analysis was repeated, and four factors were identified as having eigenvalues greater than 1. The results explained 54.482 percent of the independent variables, implying a satisfactory degree of construct validity.

Table 3. Factor analysis

	Fear of infection (FI)	Fear of food scarcity (FFS)	Fear of job loss (FJL)	*Fear of crime* (FC)
FI1	0.607			
FI2	0.759			
FI3	0.775			
FI4	0.749			
FI5	0.802			
FI6	0.763			
FI7	0.568			
FI8	0.582			
FFS1		0.851		
FFS2		0.859		
FFS3		0.693		
FFS4		0.680		
FJL1			0.6570	
FJL2			0.763	
FJL3			0.768	
FJL4			0.782	
FC1				0.746

(*continued*)

Table 3. (*continued*)

	Fear of infection (FI)	Fear of food scarcity (FFS)	Fear of job loss (FJL)	*Fear of crime* (FC)
FC2				0.753
FC3				0.515
FC4				0.783
FC5				0.573
FC6				0.632
Eigenvalue	6.151	2.695	1.837	1.302
Variance	27.690	40.212	48.564	54.482

4.2 Univariate Analyses

Mean values, standard deviations and the Pearson correlation coefficients for the research variables are calculated and presented in Table 4. The results show that mean scores of all variables ranged from 3.196 to 3.964 indicating that respondents are strongly perceiving the different aspects of fear as well as panic buying involvement associated with the outbreak of COVID-19 pandemic. Fear of infection yielded the highest mean (3.964), followed by panic buying (3.665), fear of job loss (3.611), fear of food scarcity (3.464), while the least was fear of crime (3.196). Bivariate correlation analysis (a two-tail test at 0.01 significance level) reveals that there are positive relationships among the research variables.

Table 4. Means, standard deviations and pearson correlation coefficient matrix.

Variables	Mean (n = 367)	SD	PB	FI	FFS	FJL	FC
PB	3.665	0.910	1				
FI	3.964	0.934	0.634[**]	1			
FFS	3.464	1.079	0.677[**]	0.631[**]	1		
FJL	3.611	1.065	0.449[**]	0.378[**]	0.432[**]	1	
FC	3.196	0.942	0.183[**]	0.101	0.170[**]	0.086	1

Note: Correlation is significant at the 0.01 level (2-tailed).[**]

Furthermore, it can be concluded that the research variables are favorably consistent with the research theoretical base.

4.3 Regression Analysis Results

To test which predictors are uniquely explaining the panic buying, all predictors (Fear of infection, fear of food scarcity, fear of job loss, and fear of crime) were included into the

regression model. As shown in Table 5, the model explains 55.3% ($R^2 = 55.3$ percent) of the variance in the panic buying behavior (F $= 111.740$; $p = 0.000$ ($p < 0.05$)).

Table 5. Model summary of multiple regression analysis

Model	R	R^2	Adjusted R^2	SE of the estimate
1	0.743	0.553	0.548	0.613
F $= 111.740$; $p = 0.000$ ($p < 0.05$)				

Notes: Predictors: (constant), FI, FFS, FJL, FC; dependent variable – PBB; let Y – panic buying behavior (PBB);
X – fear of infection (FI), fear of job loss (FJL), fear of food scarcity (FFS), *and fear of crime* (FC).

Table 6 shows the results of regression analysis and the associated collinearity statistics. Beta values for standardized variables as well as B weights (coefficients) for unstandaridzed variables are included in the table. Multicollinearity for the regression technique was assessed the variance inflation factors (VIFs) were computed for each predictor in the model to assess whether multicollinearity exists in the research sample. However, VIF statistics were less than the cutoff value of 10, and the tolerance statistics were all well above 0.2; therefore, the data are free from multicollinearity [14].

Table 6. Results of multiple linear regression analysis for linking dimensions of fear of COVID-19 and panic buying behavior

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	0.511	0.179		2.848	0.005		
	FI	0.314	0.045	0.319	6.958	0.000	0.588	1.700
	FFS	0.336	0.040	0.399	8.400	0.000	0.549	1.822
	FJL	0.128	0.034	0.150	3.808	0.000	0.795	1.258
	FC	0.068	0.034	0.070	1.974	0.049	0.971	1.030

a. Dependent Variable: Panic buying behavior

Based on the results of regression analysis, *p*-value of the fear of infection about ($p = 0.001$) is less than $\alpha = 0.05$. Therefore, the first hypothesis is supported in that buyer panic buying behavior is significantly affected fear of infection. Fear of job loss is significantly increasing buyer panic behavior ($p = 0.000$, ≤ 0.05). Thus, the second hypothesis is supported. Fear of food scarcity is also found to be significantly increasing buyer panic behavior ($p = 0.031$, ≤ 0.05). Therefore, the third hypothesis is supported. Lastly, fear of crime is also found significantly affecting buyer panic behavior ($p = 0.000$, ≤ 0.05). Table 7 summarizes results of multiple regression for the research hypotheses.

Table 7. Results of the hypotheses tested

Hypothesis	Description	Outcome
H1 ($p < 0.05$)	H1. Fear of infection of corona virus will be positively correlated with the panic buying behavior during the early stages of the COVID-19 pandemic	Supported
H2 ($p < 0.05$)	H2. Fear of job loss will be positively correlated with the panic buying behavior during the early stages of the COVID-19 pandemic	Supported
H3 ($p < 0.05$)	H3. Fear of food scarcity will be positively correlated with the panic buying behavior during the early stages of the COVID-19 pandemic	Supported
H4 ($p < 0.05$)	H4. Fear of crime will be positively correlated with the panic buying behavior during the early stages of the COVID-19 pandemic	Supported

5   Discussion

The research found that the most common fear dimension of the coronavirus predicting panic buying behavior is fear of infection. Respondents' concerns were for their health, families and friends. Such fears are expressed in terms of precautions taken by participants to prevent infection, following all news updates regarding the virus. This confirms that concerns about one's health is a unique component of the fear of the coronavirus [27], which consists well with previous research findings in the 2009–2010 Swine flu pandemic [40].

Fear of food scarcity is also found to be among the major constituents of fear of the coronavirus and positively affecting panic buying behavior. Therefore, fear of food scarcity was common among people everywhere, this was revealed through the long lines of people waiting to purchase, as well as, the empty shelves in grocery stores in many countries during the same period. This result also suggests that people's fear of food scarcity led them to buy in larger quantities, in anticipation of coming shortage due to increased demand, expected prolonged lockdown, and interruptions of logistic systems. People were trying to relive their risk perceptions with buying beyond their current needs and out of their buying habits. Such buying behavior represents a means for reducing perceived risk, in that when the people are aware of shortages, they start to engage in panic buying and stock large quantities to overcome their fears of future food scarcity [4]. This confirms that panic buying is a human instinctive reaction caused by the fear of running out of supplies [42].

The research results also revealed that fear of job loss was among the constituents of the fear of the coronavirus that was significantly affecting panic buying behavior. Along with outbreak of COVID-19, it was revealed that people experienced more distress and fear especially the lower income people [19]. However, at the aggregate level, survey data show the association between unemployment-related fears and changes and the shifts in consumer behavior. For example, *"In April 2020, the unemployment rate in*

USA reached 14.8%—the highest rate observed since data collection began in 1948. In July 2021, unemployment remained higher (5.4%) than it had been in February 2020 (3.5%)" [11: 2]. This huge unemployment rate has been associated with uupreceded increase in consumers' demand on food products. This shift in consumer behavior is consistent with consumption patterns that buyers had exhibited during similar economic crisis and demonstrating how consumers manage to survive [24], as they are trying to reduce perceived risks and uncertainties by buying more products and panic buying in general [43].

Lastly, the research results have shown that respondents had a fear of concerns about crimes at the early stages of COVID-19, even when he reported fear of crime was to a lesser extent compared with the other reported concerns (fear of infection, food scarcity, and job loss). This reflects the coherent nature of Palestinian society and the emotional solidarity between people in crises, though some types of fear are existent and reflecting true concerns, especially fears related property theft, sabotage as well as fear of being cheated or conned. Fear of crime, though weakly reported in the current research, and hitherto weakly associated with panic buying according to the current research findings, safety goes beyond staying home to keep protected from infection it can also keep people safe from any sort of criminal actions usually associate with crisis and difficult times such as wars. The expected "social unrest" which usually accompanies radical changes in societies, such as pandemics, wars, and political coups, increase people's fear of crimes, leading people to stay home for longer periods, to keep safe, and reduce uncertainty, and thus buy in large quantities overstock food and non-food products. The mechanism by which fear of crime and panic buying are associated can be explained in that that the fear of crime causes tension, anxiety and other psychological consequences for individuals [34] and, it leads to prejudice and segregation at the society level making this insecurity one of the major concerns for public policy makers now [6].

5.1 Conclusion and Implications

This study provides some practical implications for health policy makers, and marketers on appropriate policies and strategies to mitigate public fear and curb panic buying during pandemic times. It should be noted that fears of COVID-19 were neither totally realistic nor exaggerated. Actually they were both. Therefore, it can be concluded that social networking sites contributed to the commotion during the early stages of the pandemic through posting unverified information. As some evidences show that *"having high exposure to COVID-19 information on social media were associated with a higher risk perception for COVID-19"* [44: 1]. Fear appeals by health authorities and journalists should be carefully managed so as not to amplify public panic beyond the normal levels, while policymakers cannot fully control the content or the effect of social media, they can counter these unverified news and posts by fostering public trust, keeping them timely informed with latest developments, news, preventive measures, open communication channels. As well as targeting these social media platforms with accurate and timely information regarding COVID-19. Furthermore, rumors and misinformation should also be countered immediately.

Other public policy areas are important as well, based on the research findings, fear was not limited to the fear of infection, rather it included fear of crime, therefore, police

deployment should aim not only on forcing the lockdown but also to create the feeling of publics security as pandemics are usually associated with some possibility of social unrest. Ministry of economic assuring publics of the stream of food and functioning logistical systems. The challenge is not in whether the policymaker do or don't do, rather the challenge was how to effectively communicate with the public's to mitigate their fears and curb panic buying. For example, effectively communicating the availability of food products, rather than the scarcity can mitigate the fear of food scarcity and panic buying subsequently. On the side of marketing and retailing in particular, where as marketing practices are supposed to be reflective to public policy actions and programs, however, during the early stages of the pandemic some infringements were noticed including over-raising prices of grocery products and other products such as sanitizers and masks which were madly priced, inflating information about upcoming shortages of product to benefit from the peak demand and higher prices. However, ethics should be the limit of the market mechanisms, so, instead of aiming at maximizing profits, and they even should not stand still either, they should see these circumstances as an opportunity to grow customer base, build relationships, reputation, as many local and international organizations did indeed, as they generously decreased prices, donated to vulnerable people, and launching social responsibility initiatives.

5.2 Contribution to Knowledge

This research represents a core point of intersection between two different, yet interdependent disciplines', consumer behavior and psychology. That is, the current research conceptual model uses psychological construct (fear) to explain consumer behavior construct (panic buying).

5.3 Limitations and Future Research Directions

Data were collected through subjective measures representing online consumers points of view. Therefore, future research work is suggested to employ a field or laboratory experimental designs. On the other hand, while fear and panic buying are complex and multidimensional constructs, further research is suggested to add more predictors' to the research model.

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The Impact of National Defense Law Related to (COVID-19)'s Lockdown on Businesses' Cash Flows & Liquidity (Jordan Case)

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Abstract. The world has been hit with several crises during the last decade and still suffering from emerged Corona Virus pandemic economic crisis. Jordanian firms, like other firms around the world faced a financial crisis due to decrease in consumers' demand and obstacles with shipping goods around the world. The current study examines the impact of the Jordanian national defense law in providing a financial protection for firms during the pandemic. Also, we study the behavior of consumers and business owners using an online interview. The results show that business owners are more likely to keep using the same prices before the quarantine period and consumers are more likely to have a buying panic, which, in return, have a positive impact on cash flow. In addition, the study proposed an equation that would guide business owners in calculating the shortage of cash flow and liquidity (SCFL) during crisis periods that similar to that of the quarantine period of COVID-19.,The study provides recommendation to that governmental authorities on enactment of more regulations and policies that provide guidance on how to deal future economic crisis which should provide protection for the local economy and assist firms in getting the financial support they need go through future crisis.

Keywords: Corona Virus (COVID-19) · Quarantine · Lockdown · National defense law · Cash flows · Liquidity · Jordan

1 Introduction and Theoretical Base

The liquidity has a high level of importance depending on the cash and cash equivalents in addition to short-term investments, which is the most important for every entity to enhance the ability to pay its obligations in due time [5]. In develop countries natural disasters cause the loss of cash as a current asset and cause immediate financial hardship [19].

All types of financial statements and financial data users consider the ratios related to liquidity and cash flow to measure the management of current assets and liabilities [4].

For example banks sector in Bangladesh had lower liquidity ratios and poor financial health within Covid-19 pandemic leaded the banks to use aggressive lending practices [11].

Therefore, the cash flow from operations is significant in explaining the variation of current and quick ratio, but it is not significant in explaining the variation in the cash conversion cycle [17] and therefore [7] advised firms to have loans for mitigating negative sides of liquidity risks during Covid-19 pandemic.

Humankind have known disasters since his existence on earth, earthquakes, tsunamis, volcanic eruptions, mass movement, climate-related events (mainly floods and storms) [18] and finally viruses which killed millions such as "Spanish Flu" in 1918 pandemic lunched worldwide [10].

Recently, humankind has faced a new virus type, where the World Health Organization (WHO) [21] announced that coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus (COVID-19).

The (COVID-19) pandemic has a unique global impact based on terms of speed, size, and scope of policy response which lead to new policies of monetary, fiscal, and prudential policies [3]; however, they emphasized that this polices impact seems to be as truce, which means there should be more analysis of the pandemic's economic impact.

The pandemic has a negative but short-term impact of the on stock markets [20]. This virus freezes most of the business activities within countries adopting policies of social and physical distancing and self-quarantines to respond to this virus.

National security has a high priority, depending on the cost-benefit analysis [12]. Thus, this study attempted to provide some advice to fight this accumulative problem and negative cash flow and liquidity circumstances that are faced by business units within the quarantine period and formed an equation that could be used to estimate the shortage of needed cash flow.

The quarantine period to combat the negative effects of the coronavirus (COVID-19) freezes the cash money to be exchanged and then stops the main factor of giving markets a life.

According to the [14] report on the impact of COVID-19 on Jordanian families, and from 12,084 respondents, only 6.8% of the respondents said that they are still working as in the period before the implementation of the lockdown procedures. More than half of the respondents (58.6%) of those who were working before the crisis indicated that they had lost their entire income, while 17.1% of them indicated that their income was "much less" and 9.4% of them said that their income was "slightly less", and only 11.3% said that their income was not affected by the crisis.

This may indicate how local Jordanians were negatively affected by lockdown related to Corona Virus (COVID-19) and forced many business owners to finish working contracts for their employees or finish their entire businesses.

1.1 Corona Virus (COVID-19)

Viruses are small obligate intracellular parasites [9]. Corona virus is a type of virus with many different kinds, a newly identified type called COVID-19 that appeared in Wu-han, a city in China, in December 2019 and can spread from person to person. It is diagnosed

with a laboratory test without a vaccine [18]. Governments around the world respond to COVID-19 with two scenarios as follows:

1.1.1   First scenario.

Targeted herd immunity, which means simply within the absence of a vaccination for a novel infectious disease, one tries to flatten the incidence curve to such an extent that the daily number of cases that require medical assistance is kept below the capacity of the health care system [2]. Some countries have adopted this policy as a response to the Covid-19 such as the UK government [6].

1.1.2   Second Scenario.

Social and physical distancing and self-quarantine, which Jordan government adopted as a response to the Covid-19 and declared the National Defense Law.

1.2   Cash Flow and Liquidity within Quarantine Period

Similar to the flow of blood inside the human body, the markets need cash flow to stay operating. Cash flow management is one of the most important instruments for monitoring and controlling the normal functioning of firms. Corona Virus (COVID-19) spread globally and forced many countries to activate quarantine [15]; the immediate challenge affected and harmed cash flow and liquidity inside organizations. Credit analysts and other users of accounting data involved in the evaluation of a firm's financial position are often concerned with both the measurement of current liquidity. Cash flow and liquidity are the key factors for giving organizations a market value, and investors have increasingly responded to free cash flow surprises over time [1]. The Central Jordanian Bank [23] and other commercial and Islamic banks in Jordan agreed to delay loan payments for the current quarantine period. In addition, under the national defense law, the government decreases social security subscription and half salaries will be paid within the quarantine period. In addition, this law required a lessor to drop their claims or delay within the quarantine period. In addition, governmental agencies attempt to increase the infusion of cash to support market cash flow. The International Monetary Fund (IMF) [24] has called on policymakers to implement procedures that lead to a reduction in economic repercussions resulting from the COVID-19, such as subsidizing wages, lowering taxes, and decreasing interest rates as per [11] on the IMF website.

2   Methodology

The study depends on narrative analysis and qualitative content analysis of Jordanian defense law, in addition to random interviews with consumers and business owners in Jordan. We conducted 400 interviews with different consumer and business owners to examine the behavior of those groups during the Corona Virus the COVID-19 quarantine period. Moreover, we attempt to build a model that could be used to estimate the shortage in cash flows during financial distress periods where the cash flow of many sectors and industries within the quarantine period is frozen, and cash is held in the hands of individuals or in their bank accounts during the emergency period.

3   Results

Based on the analysis conducted on the national defense law and interviews performed online with interviewees in Jordan society samples consisting of customers and business owners, many scenarios came up as follows:

3.1   Impact of Jordan's National Defense Law on Cash Flow

The National Defense Law shall be passed in case of emergency that would threaten national security or public safety in all parts of the Jordanian kingdom or in a region

Table 1. Jordanian defense law issued related to Covid-19 and the positive/negative impact on businesses' cash flows

Defense law no	Content	(P) Positive or (N) Negative impact on cash flow
(1)	New instructions related to social security subscriptions with fewer rates (75% of the insured's wages). In addition, the possibility of instalment amount for old age insurance up to 31 Dec 2023 without any additional interest or fees	P
(4)	Establish governmental "National Fund" for receiving donations for fighting pandemic of Corona Virus (COVID-19)	N (but deductible for tax issues)
(5)	Considering the lockdown periods as uncountable periods for delivering tax declarations (No charging for delay fees)	P
(6)	Limitation of employees numbers inside business units buildings with possibility of baying 50% of salaries with considering minimum wage regulations	P
(9)	Business units could request unemployment allowance from social security corporation for their employees have 12 monthly subscriptions	P
(13)	Lockdown times which depend on the pandemic status inside the country (Jordan)	N

Source: Prepared by authors depending on Jordanian National Defense Law [16]

due to war, disturbances, armed internal strife, public disasters, or the spread of a pest or epidemic [22].

Table 1 summarizes the defense law issued in Jordan and the positive or negative impacts on businesses' cash flows:

In addition, the Jordan Central Bank announced many instructions related to the COVID-19 pandemic, especially freezing due to bank instalments and unbalanced check claims. However, all business owners responded negatively regarding lockdown variable times within the COVID-19 healthy status in Jordan (Fig. 1).
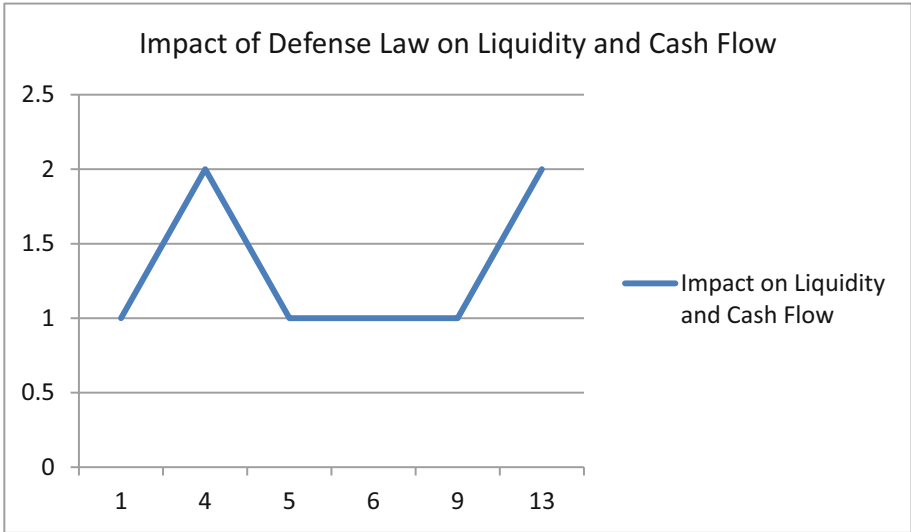
Fig. 1. Defense law impact on liquidity and cash flow (P = 1, N = 2)

3.2 Suggested Equation for Cash Flow Calculation

This suggested equation will help business units to calculate the shortage of cash flow and liquidity (SCFL) that may be affected by the quarantine period related to the Corona Virus (COVID-19): Current Cash Balance (CCB) + Cash Convertible Assets (CCA) + Governmental Cash Support (GCS) + Decrease in Operational Expenses (DOE) (e.g. Electricity, Water, Cleaning, Stationary, Communication, and Internet Expenses) + Decrease in Salaries Expenses (DSE) (including the decrease in social security subscription) + Freeze Due of Bank Instalments (FDBI) + Extra Cash Received within Buying Panic Period (ECRBP) – Cash Losses within Quarantine Off Working Times (CLQOWT) – Donations for National Fund (DNF).

$$SCFL = \left\{ \sum (CCB, CCA, GCS, DOE, DSE, FDBI, ECRBP) \right\} - (CLQOWT) - (DNF)$$

3.3 Depreciation Expense and Corona Virus (COVID-19) Quarantine Period

The calculation of depreciation expense depends on the methods illustrated within the IFRS on a yearly basis.

Within the Coronavirus (COVID-19) quarantine period may need to take into consideration the change of calculation here, where depreciable assets are not under use for most of the year period as before.

Thus, active usage time-base calculation may be more accurate in setting up the balance of depreciation expenses within the quarantine period. Consider the freeze-time impact on such assets.

However, depreciation expenses do not affect cash flow and liquidity inside business units. Therefore, it is important to look for such an account balance from a new point of view within such circumstances.

4 Conclusions Summary and Recommendations

During the quarantine period, consumers tend to buy in a greedy way (buying panic), which may positively support the markets' cash flow and liquidity. Business owners tend to keep using the same prices before the quarantine period. Additionally, business owners should take into account the calculation of depreciation during the quarantine period, where depreciable assets are not under use as before the COVID-19 pandemic. Moreover, the study proposed an equation for business units to calculate the shortage in cash balance and recommended that governmental agencies need to set up cash infusion policies and reduce interest rates to enhance the cash availability in the markets. As [8] concluded that it is plausible to expect that the aftermath of Corona Virus (Covid-19) has the potential to cause widespread economic disruption, and the lockdown period can be disastrous for all economies if they cross their sustainability threshold level. Moreover, some business unit owners in Jordan, especially in hypermarkets and malls, mentioned that paying by using credit cards has a high level of prevalence during the coronavirus (Covid-19) pandemic, where the profit margin was negatively affected by credit card commissions. As well, the necessitate appearing here for government of taking into consideration the cost/benefit analysis as revealed by [13] discussed earlier. This leads to recommend for finding alternative paying option that decrease or eliminate such kind of commissions on one hand, on other hand the central bank of Jordan may issue new regulations related to reduce the percent of credit cards commissions. Therefore, establishing government sponsored payment channels such as eFAWATEERcom may be a suitable alternative for business unit owners where such commissions are lower.

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Artificial Intelligence AI, TechManagement, Entrepreneurship and Economics Development

Adoption of Cryptocurrency Investment: Malaysian Context

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Abstract. The adoption of cryptocurrency in Malaysia in general, as well as by investors, is still in its early adopter phase. Malaysia's 12th Plan has highlighted the importance of digitalization adoption as Malaysia aspires to be the ASEAN leader in digitalization. Due to the increasing relevance and popularity of cryptocurrencies around the world, it is vital to investigate the factors that influence Malaysian investors' desire to invest in them. The purpose of this study is to determine the factors that drive cryptocurrency investment among Malaysian retail investors. The research model integrates diffusion of innovation factors (compatibility, relative advantage, trialability, ease of use (complexity), and observability) and consumer behavior theory, focusing on the perception of retail investors (perceived risk and perceived value). Demographic factors are also included as control variables to understand retail investors' decisions to invest in cryptocurrencies. This research was conducted using a quantitative approach, and a total of 304 Malaysian retail investors were collected using respondent-driven sampling. The collected data was analysed using Smart PLS Structural Equation Modelling (PLS-SEM). The findings indicate compatibility, trialability, ease of use (complexity), observability, and perceived value have an influence on the intention to invest in cryptocurrency. Meanwhile, relative advantage and perceived risk are not supported. Control variables are also found to be insignificant. This research is vital for analysing and gaining an insight into Malaysian retail investors' underlying motives for cryptocurrency investment, which will aid in the formulation of a regulatory framework.

Keywords: Malaysia · Retail investors · Cryptocurrency · Investment

1 Introduction

The fintech revolution has had a significant influence on how individuals, organizations, and industries operate. "Fintech" refers to an innovative system that uses technology in the design and delivery of financial services to make them widely accessible to the general public (Gomber et al. 2018). A notable example of fintech is cryptocurrency, which may drastically alter financial markets, business models, and the global economic system. Business and the market would be very uncertain due to the pandemic (COVID-19) and the development and implementation of fintech. The financial services industry

is undergoing a significant revolution in financial history, with information technology playing a key role.

Consequently, other countries in the region are also causing tension over innovative financial products and services. Malaysia's 11th National Plan highlighted areas where adaptation and response times have been deemed slow in light of major global developments, such as the rapid advancement of digital innovation and technology, as well as changes in consumer demand, which threaten to undermine the financial sector's overall competitiveness. Malaysia, in general, is lagging behind and is still in the early adopter stage when it comes to cryptocurrency investment. Adoption among Malaysian investors, in particular, is still in its infancy (Yeong et al. 2019). Hence, there is a gap between the adoption of innovation of cryptocurrency as an investment product in Malaysia in comparison to other countries.

As Malaysia competes with other nations in the area of innovative financial products and services, it is critical to understand the factors that influence investors to invest in cryptocurrencies. The objective of this research is to examine the factors that influence the adoption of cryptocurrency investment among Malaysian retail investors. Therefore, this study aims to contribute to the literature on the adoption and buying intention theory by employing two theories: diffusion of innovation factors and consumer behavior theory, focusing on the perception of retail investors (perceived risk and perceived value). The research findings indicate five out of seven factors are found to have an influence on cryptocurrency investment. The findings are expected to assist financial institutions to have a better understanding of their clients' investing decision-making processes. This research also intends to help regulators formulate policies and financial services improve services associated with investment products. The study is structured as follows. This section will begin with an introduction to cryptocurrencies and then proceed to a review of the literature. Next comes the implementation of a research methodology. It will be followed by a discussion and the results. Lastly, the conclusion of the study.

2 Literature Review

Several studies have shown that cryptocurrencies have found their place in the modern digital world, and cryptocurrency will certainly be a part of almost every investor's portfolio in the coming years (Gupta et al. 2020). Most cryptocurrencies have a higher potential daily return compared to traditional investment instruments such as bonds, stocks, and shares (Lee et al. 2018). Interestingly, cryptocurrency returns are highly uncorrelated with all traditional asset classes, which brings significant diversification benefits in contrast to their original function as a form of cash (Inci & Lagasse 2019). This pandemic is a very good illustration of systematic risk, or un-diversifiable risk, that is experienced in the capital markets where diversification is unable to eliminate the risk encountered during this period. This could be an ideal option for investors looking to diversify their portfolio into cryptocurrencies, as bitcoin prices have been steadily rising and have remained a reliable store of value throughout the pandemic (COVID-19) and in order to recover from the bearish capital market (Marobhe 2021). Cryptocurrency is gaining popularity globally, to the point that some nations have begun to accept and regulate it, while others have completely banned its use (Global Legal Research Center

2018). Nonetheless, numerous developed nations, including the United States, South Korea, Japan, Singapore, Germany, Australia, and Canada, have financial institutions and investment banks engaged in cryptocurrency. In 2017, the Middle East and North Africa (MENA) countries were expected to account for 4% of global cryptocurrency exchanges, while Gulf investors were expected to account for 1.5% of cryptocurrency value (Zhang et al. 2017). Cryptocurrency trading has spread to various nations, including Bahrain and the UAE, due to the significant rise in the valuation of cryptocurrencies and their decentralized key features (Zhang et al. 2017). According to Hasan & Othman (2020), GCC banks could either explore cryptocurrencies as an alternative investment asset or integrate blockchain technology into their operating systems to provide low transaction costs, high security, and quick settlement. However, the Gulf States discourage cryptocurrency adoption due to significant unpredictability, lack of knowledge, and lack of regulation.

This study uses two theories: diffusion of innovation and consumer behavior theory. The diffusion of innovation theory, defined by Rogers (1983) as "the process by which an innovation is communicated through certain channels over time among the members of a social society" (p.5). The decision and the perception of the people in a society to embrace innovation depend on five distinct elements, namely, compatibility, relative advantage, trialability, ease of use (complexity), and observability (Rogers, 1983). Consumer behavior is the analysis of people, groups, and organizations, as well as the processes by which they select, secure, utilize, and dispose of items and services (Gabbot 2008). Consumer behavior may provide new insights into factors influencing retail investors' options of investment products to achieve their aims. By emphasizing investment risk and value.

Compatibility is defined as "*the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters*" (Rogers 2003, p. 15*).* A study on the adoption of bitcoin transaction services compatibility was presented as a strong antecedent of users' intention to use the services (Yoo et al. 2020). Fast liquidation and settlement, accuracy, and not relying on third parties are some of the appealing features that allow it to be a compatible innovation. In this context, compatibility refers to how compatible cryptocurrency investments are aligned with retail investors' investing experience and expectations. Hypothesis being formed: *H1: Compatibility has a positive influence on cryptocurrency adoption.*

Relative advantage is defined as "*the degree to which an innovation is perceived as being better than the idea it supersedes*" (Rogers 2003, p. 229). Relative advantage is frequently quantified in terms of economic or reputational advantages. The bigger the relative advantage, the more rapidly an innovation will be adopted. According to Rogers (2003) and Arts et al. (2011), out of all the innovative features, the relative advantage is the most influential on adoption. Consequently, investors are expected to benefit from efficiency, economic benefit, and status enhancement. In this study, relative advantage means that cryptocurrency has an advantage compared to other investment products available in the market. The following hypothesis is developed: *H2: Relative advantage has a positive influence on cryptocurrency adoption.*

Ease of use (complexity) is defined as *"the degree to which an innovation is perceived as relatively difficult to understand and use"* (Rogers, 2003, p. 15). Users prefer and embrace technology that is simple to understand and use, but cryptocurrencies often face resistance to adoption since people experience difficulties understanding and using the technology. Cryptocurrency programmers are aware of these issues and are working to provide novel interfaces to increase speed and adoption (Everette 2017). This research reverses code complexity to ease of use. Ease of use is included to understand how easy it is to use a cryptocurrency platform in Malaysia. Hypothesis being formed: *H3: Ease of use (complexity) has a positive influence on cryptocurrency adoption.*

Trialability is defined as "*the degree to which an innovation may be experimented with on a limited basis*" (Rogers 2003, p. 16). Based on their meta-analysis, Arts et al. (2011) trialability was discovered to have a small and significant influence on adoption. Rogers (2003) implies that adoption is expected to be positively influenced by trialability where it allows a potential adopter to embrace the benefits of innovation more effectively. Trialability is used in this study to refer to retail investors' willingness to experiment and invest in cryptocurrency investments. Hypothesis being formed: *H4: Trialability has a positive influence on cryptocurrency adoption.*

Observability is defined as "*the degree to which the results of an innovation are visible to others*" (Rogers 2003, p. 16). Observability refers to the degree to which one can observe and comprehend the effects of an innovation prior to its full adoption. As a result, observing the impact of the innovation on other users might lessen uncertainty and increase and facilitate adoption in society (Rogers 2003). In the case of cryptocurrencies, the availability of visible results is important to encourage adoption and is believed to have a positive effect on adoption (Moore and Benbasat 1991) In this study, observability refers to whether the surroundings influence retail investors to invest in cryptocurrencies. Hypothesis being formed: *H5: Observability has a positive influence on cryptocurrency adoption.*

Perceived Risk is defined as "*consumers' perception of the degree of uncertainty and possibly undesirable consequences of using or buying a product from a behavioral research perspective*" (Faqih 2016). According to Featherman and Pavlou (2003), perceived risk may be used to predict technological adoption. Perceived risk is employed to understand the perception of risk by retail investors associated with cryptocurrency investment. Cryptocurrencies are considered an emerging fintech with potential risk. Hypothesis being formed: *H6: Perceived risk has a negative influence on cryptocurrency adoption.*

Perceived Value is used to measure an investment's efficiency and return on investment. According to Zeithaml (1998), "perceived value" is an evaluation of potential benefits or losses from using a certain product or service. Given that perceived value is a multi-dimensional concept, consumers' belief that blockchain would offer more value might theoretically increase their desire to engage in blockchain-related behavior. Perceived value is employed to understand the perception of value by retail investors associated with adopting cryptocurrency investment. *H7: Perceived value has a positive influence on cryptocurrency adoption.*

3   Methodology

In this research, a quantitative approach will be used, and a survey questionnaire has been developed. This study focuses on Malaysian retail investors. The dependent variable in this study is "adoption", and the independent variables used in this research are from the diffusion of innovation theory and consumer behavior theory, which include compatibility, relative advantage, trialability, ease of use (complexity), observability, perceived risk, and perceived value. When measuring complexity, ease of use can be utilized. However, complexity must be reverse-coded as ease of use (Arts et al. 2011). Therefore, this research has reversed coded complexity into ease of use. For the control variables, five demographic factors were analysed: age, gender, income, education, and investment experience. G*Power was used to calculate a sample size of a minimum of 184 respondents. Out of the 320 questionnaires that have been distributed, only 304 questionnaires have been completely filled up. To evaluate the constructs of the independent variables, most items were derived from Moore and Bensabat (1991). The questionnaire is divided into 11 sections. Section 1 is the introduction of the research, and the objective of the research is stated to the respondent before answering the survey. Section 2 requires the consent of the respondent to answer the survey questionnaire, and Sect. 3 deals with the respondents' demographic information. Section 4 focuses on the respondent's investment knowledge and experience. Section 5–11 includes questions on the seven main factors highlighted earlier. A five-point Likert scale is employed to identify respondents' levels of agreement or disagreement with the statements that measure each construct, with values ranging from 1 to 5, with 1 representing "strongly disagree" and 5 representing "strongly agree". The measurement model was adopted and modified by Hoens (2019) and adapted by Moore and Bensabat (1991).

4   Data Analysis

Table 1 displays the demographic profile of the respondents where gender, age, education, income, industry, and investment experience were analysed.

The study demonstrates that males constituted the vast majority of those who answered the questionnaire, (79%) compared to females only holding (21%). Most males adopt cryptocurrency as an investment vehicle. Most of the respondents were male adopters, who held the highest (63%) response rate, followed by (16%) of males who claimed to have no experience in investing in cryptocurrency. A majority of the respondents have been investing in cryptocurrency. Most of the respondents are between the ages of [25 to 34], (23%), meaning millennials are the primary target for cryptocurrency investment. Most of the respondents have (40%) have a bachelor's degree, %). Only a very small number of the respondents have no education, consisting of only (1%). There, is a significant difference found between gender, age, and education as the chi-square test of independence shows that the p-value is below 0.05. Most of the respondents have an income of between [RM2001 to RM4000], (22%), followed by respondents having an income of [RM4001 to RM6000] (20%), and lastly, [below RM2000], (22%). Lastly, the majority of retail investors who have experience [more than 3 years] consists of (38%). Few respondents claim to have investment experience [less than 1 year], (27%). There

Table 1. Demographic profile of the respondent.

Respondent profile (retail investors):		Total respondent	304	Adopters		Non adopters		Chi-square	Result
		Frequency	(%)	Frequency	(%)	Frequency	(%)		
Gender	Male	240	79%	192	63%	48	16%	$X^2 =$ 21.24408, df (1), p-value = 0.00000	Significant
	Female	64	21%	33	11%	31	10%		
Age	18−24	32	11%	33	11%	15	5%	$X^2 =$ 20.71875, df (4) p-value = 0.00036	Significant
	25−34	71	23%	79	26%	17	6%		
	35−44	51	17%	53	17%	7	2%		
	45−54	48	16%	36	12%	24	8%		
	55 +	38	13%	24	8%	16	5%		
Education	Bachelor's Degree	123	40%	90	30%	34	11%	$X^2 =$ 18.64861, df (6), p-value = 0.00480	Significant
	Diploma	73	24%	58	19%	15	5%		
	Master Degree	57	19%	41	13%	16	5%		
	High school	28	9%	25	8%	3	1%		
	Doctoral Degree	11	4%	4	1%	7	2%		
	Professional Degree	9	3%	7	2%	2	1%		
	No education	2	1%	0	0%	2	1%		
Income	Below RM2,000	59	19%	42	14%	17	6%	$X^2 =$ 2.71652, df (5), p-value = 0.74359	Not significant
	RM2,001-RM4,000	68	22%	50	16%	18	6%		
	RM4,001-RM6,000	60	20%	49	16%	11	4%		
	RM6,001-RM8,000	30	10%	21	7%	9	3%		
	RM8,001-RM10,000	28	9%	22	7%	7	2%		
	Above RM10,000	58	19%	41	13%	17	6%		
Investment Experience	More than 3 years	128	38%	98	32%	30	10%	$X^2 =$ 3.10072, df (2), p-value = 0.21217	Not significant
	1–3 years	95	35%	73	24%	22	7%		
	Less than 1 year	81	27%	54	18%	27	9%		

is no significant difference found between income, and investment experience, in the adoption of cryptocurrency investment, as chi-square test of independence shows that the p-value is above 0.05. Table 2 presents an investor's investment profile where years of investment experience, portfolio allocation, depth of knowledge of cryptocurrency, and cryptocurrency investment are further discussed.

The majority of respondents have prior experience of investing in cryptocurrencies, with a total of (74.01%). (25.99%) claimed that they had no experience in cryptocurrency investment. In terms of portfolio allocation, the majority of the respondents, (61.18%) allocated between 0%−20%. About (4.93%) allocating between 81%−100%, of their investment portfolio. When asked regarding their knowledge of cryptocurrency,

Table 2. Investor's investment profile.

	Investor's investment portfolio	No of respondent	%
Years of investment experience	I have never invested in cryptocurrencies	79	25.99%
	Have invested in cryptocurrency	225	74.01%
	· Less than a year	85	27.96%
	· From 1 to 2 years	40	13.16%
	· From 2 to 3 years	34	11.18%
	· More than 3 years	66	21.71%
Portfolio allocation	0%−20%	186	61.18%
	21%−40%	61	20.07%
	41%−60%	29	9.54%
	61%−80%	13	4.28%
	81%−100%	15	4.93%
Depth in knowledge of cryptocurrency	A moderate amount	142	46.71%
	A little	69	22.70%
	None at all	33	10.86%
	A lot	37	12.17%
	A great deal	23	7.57%

(46.71%) claimed to have a moderate amount of knowledge of cryptocurrency. In contrast, only a small number of respondents, (7.57%) claimed to have a great deal of knowledge about cryptocurrency.

4.1 Measurement Model

SEM-PLS is used to analyse the relationship between the dependent and independent variables. Reflective measurement models are used to construct all of the variables. Since latent constructs exist independently of the measures used, variance in item measurements is explained by variations in the constructs. In this study, the endogenous variables are represented by adoption, and the exogenous variables are represented by compatibility, relative advantage, ease of use (complexity), trialability, observability, perceived risk, and perceived value. All seven latent variables have a reflective measurement model. The demographic factors are age, gender, experience, education, and income, and they represent the control variables. Upon collecting data and ensuring its reliability and validity, various statistical analyses are conducted. The purpose of establishing reliability and validity is to guarantee that the data is sound and reliable, as well as that the results are valid. To assure the instrument's efficiency and quality, evidence

of validity and reliability is essential. Table 3 displays the summary of the results of the assessments.

Table 3. Summary of the results of the assessments

Construct	Composite Reliability (CR)	Average Variance Extracted (AVE)	Discriminant Validity	VIF
ADOPTION	0.941	0.799	Established	N/A
COMPATIBILITY	0.969	0.887	Established	3.403
COMPLEXITY	0.93	0.816	Established after deleting COMPL1	4.34
OBSERVABILITY	0.916	0.784	Established	2.787
PERCEIVED RISK	0.891	0.733	Established	1.102
PERCEIVED VALUE	0.948	0.785	Established	4.467
RELATIVE ADVANTAGE	0.955	0.809	Established	4.817
TRIALABILITY	0.926	0.806	Established after deleting TRI3	3.285
AGE	1	1	Established	1.414
EDUCATION	1	1	Established	1.187
INVESTMENT EXPERIENCE	1	1	Established	1.425
GENDER	1	1	Established	1.172
INCOME	1	1	Established	1.515

The reflective measurement models are examined first. Prior to that, the indicator reliability, internal consistency reliability, convergent validity, discriminant validity, and collinearity are evaluated. The "outer loading" of each indicator is checked for each item. All the outer loading readings for this construct are greater than 0.708, where the indicator's variance can be explained by at least 50%. Next, internal consistency and reliability are evaluated by measuring composite reliability, where it should be equal to or greater than 0.70, and higher values indicate higher reliability. The composite reliability values are all above 0.80. Convergent validity is assessed by measuring the average variance extracted (AVE). The AVE values for all constructs in this study are above 0.7, which is greater than 0.5, where the variance can explain at least 50% of the constructs. The Fornell-Larcker Criterion, Cross Loading, Heterotrait Monotrait (HTMT) Ratio, and HTMT inference are used to assess discriminant validity. Discriminant validity for all models is established after deleting two items: COMPL1, and TRI3. There are no substantial collinearity issues between the constructs and the indicators found as the
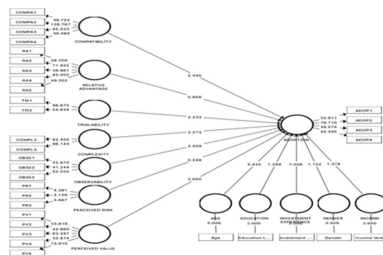
Fig. 1. Structural model of the factors impacting the adoption of cryptocurrency.

Variance Inflation Factor (VIF) on all constructs is below 5. Once the discriminant validity has been established and no collinearity issues have been found. This study continues with the structural model presented in (Fig. 1).

(Fig. 1) displays the structural model of the factors impacting the adoption of cryptocurrency. The Bootstrap method with 5000 subsample settings is being used. The path coefficient, where the p-value is below 0.05 and the t-value is above 1.96, is measured to evaluate if the hypotheses formed to assess the relationship between the factors and the adoption of cryptocurrency. Table 4 presents the results of path coefficient analysis.

Table 4. Path coefficient analysis and assessing structural model.

Hypotheses	Relationships	T-value	P-value	Decision	F^2	R^2	Q^2	SRMR
H1	COMPATIBILITY -> ADOPTION	2.445	0.015	Supported	0.035	0.666	0.479	0.031
H2	RELATIVE ADVANTAGE -> ADOPTION	0.858	0.391	Not supported	0.004			
H3	COMPLEXITY -> ADOPTION	2.273	0.023	Supported	0.024			
H4	TRIALABILITY -> ADOPTION	2.233	0.026	Supported	0.031			
H5	OBSERVABILITY -> ADOPTION	2.459	0.014	Supported	0.022			
H6	PERCEIVED RISK -> ADOPTION	0.249	0.803	Not supported	0			
H7	PERCEIVED VALUE -> ADOPTION	2	0.046	Supported	0.02			
H8	AGE -> ADOPTION	0.435	0.663	Not supported	0.001			
H9	EDUCATION -> ADOPTION	1.294	0.196	Not supported	0.007			
H10	INVESTMENT EXPERIENCE -> ADOPTION	1.006	0.314	Not supported	0.004			
H11	GENDER -> ADOPTION	1.152	0.249	Not supported	0.004			
H12	INCOME -> ADOPTION	1.378	0.168	Not supported	0.009			

The findings show all the factors were found to be significant except for relative advantage and perceived risk. Furthermore, all of the control variables for demographic factors were found to be insignificant. The analysis continues with the assessment of the structural model: effect size (F^2), coefficient of determination (R^2), predictive relevance (Q^2), and lastly, SRMR. It is found that the effect size (F^2) is small (less than 0.1) for all the relationships studied, except perceived risk, which is found to have no effect size. All the control variables have small effect sizes. The coefficient of determination (R^2) for this model is 0.666, which is above average, indicating that the latent variables or factors are able to explain Malaysian retail investors' adoption of cryptocurrency investment by 66.6%. The predictive relevance (Q^2) for this model is 0.479, which is large, thereby indicating a high predictive accuracy, thus showing support for the predictive relevance of the model pertaining to endogenous latent variables. SRMR in this study is 0.031, which is considered a good fit as the value is below 0.08.

5   Conclusion

Results show that compatibility, trialability, ease of use (complexity), observability, and perceived value are significant factors towards the investment of cryptocurrency adoption among retail investors in Malaysia. The finding shows most of the respondents were male adopters, and most of them were Millennian. Aside from that, most of

the retail investors claimed to have only moderate knowledge of cryptocurrencies but indeed invested in them. This could be attributed to retail investors' lack of financial and investment knowledge when compared to institutional investors. The hypothesis of relative advantage and perceived risk were found to be insignificant in the intention of adopting cryptocurrency as an investment. This shows that Malaysian retail investors do not perceive cryptocurrencies to have a competitive advantage over traditional financial assets. This may be due to a lack of regulatory involvement and government recognition of cryptocurrency investment. Besides that, Malaysian retail investors perceive investment value as compared to risk. This might be because retail investors were intrigued by the prospect of earning a high rate of return while neglecting the risk associated with cryptocurrency. As a result, financial services firms and regulators should foster to increase retail investors' financial literacy in order to help them make sound investment decisions. This is to protect investors from becoming victims of cybercrime, which potentially hinders the financial services industry's digitalization. Additionally, all the five-control variables were found to be insignificant with the adoption of cryptocurrency as an investment. This study contributes to the knowledge of diffusion of innovation and consumer behaviour theories by giving new insight into the uptake of cryptocurrency adoption in Malaysia. The findings show a growing trend toward investments that correspond with retail investors' values and principles. Understanding the factors influencing cryptocurrency adoption as an investment product in Malaysia would assist drive fintech digitalization. A better digital infrastructure and services will assist Malaysia to achieve its 12th Malaysian Plan.

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A Study on the Potential for Medical Tourism with Reference to the Select Private Hospitals in Coimbatore City, India

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Abstract. Tourism industry is the major contributor of the economic development of every nation. In recent years tourism in India has exploded at a very high speed. India has flourished in becoming the most favored place amongst local and foreign travelers. Tourism industry in India is the major contributor for the GDP of the economy, which induces medical tourism which is of recent origin. In recent years India has become a preferred medical tourism destination as high-quality treatment is provided at very low cost as compared to other countries.

Tamil Nadu is one among the states in India where one can take the advantage of all-inclusive packages. There are numerous world class amenities available in the hospitals of Tamil Nadu which are well equipped with the newest testing services. Coimbatore is Tamil Nadu's second largest city located in the foothills of the Nilgiris, is the top revenue earner for the state next to Chennai, with respect to engineering, textile and automotive industries. In the recent years, hospital industry in Coimbatore district is scaling its heights to international standards. In this context, the present study is developed to analyse the potential for medical tourism with reference to the quality of health care services offered by the select private hospitals in Coimbatore city.

Keywords: Tourism · Medical tourism · India · Quality health care services

1 Introduction

Medical tourism is regarded as travelling from the place of residence to the place of destination at which health, clinical or surgical treatment is offered or executed and which includes more than one night away from the state or country of residence. Globalization and technological development have created a platform for medical tourism industry even in India.

Tourism industry is the main contributor for the economic development of every nation. In the most recent years tourism industry in India has shot up at a great speed. India has flourished in becoming the most favored place amongst local and foreign travelers. Tourism industry in India is the major contributor for the GDP of the economy, which

induces medical tourism which is of recent origin. In recent years India has become a preferred medical tourism destination as high-quality treatment is provided at very low cost as compared to other economies.

India's medical tourism division has attracted remarkable studies in the recent years and the anticipations of the public have increased greatly. The patients anticipate qualitatively superior and well-timed services from the hospitals. There is a mounting need for medical tourism to please the patients from all over the world. Hence, the assessment of patient satisfaction has become need of the hour. Medical tourism is cherished globally and especially developing economy like India is not an exception to it. Service quality plays a significant role in creating and upholding satisfying association with the customers. It has been considered as an essential indicator of patient satisfaction. However, the previous researchers could not find much work on this medical tourism and quality healthcare services offered by the private hospitals of Coimbatore city in Tamil Nadu, India. The current study is an effort to bridge this gap.

Tamil Nadu is one among the states in India where one can get the advantage all-inclusive packages. There are several world class amenities available in the hospitals of Tamil Nadu which are well-equipped with the newest diagnosing facilities. The physician, nurses and other paramedical workforce working in the hospitals are all committed, well qualified and skilled. There are several private hospitals that are all skillfully run, providing treatment at a very reasonable cost. It has been witnessed that the cost of treatment is about one/tenth of the cost of a similar treatment offered at advanced nations. Cardiac treatment, cosmetic surgery, kidney transplant and dialysis and eye care treatments are available at all the hospitals in Tamil Nadu and at a very reasonable charges.

Coimbatore, Tamil Nadu's second largest city situated at the foothills of the Nilgiris, is the highest revenue seeker for the state after Chennai, with engineering, textile and other locomotive industries. In the recent years, hospital sector in Coimbatore district is scaling its heights to international standards. The city has numerous hospitals, apart from the Government owned hospitals there are several multi-facility hospitals functioning in the city. The region's health division is rated as the best in terms of employing government- sponsored health programmes. Also, quite a few rare surgical treatments have been undertaken in the city. In this context, a study is felt necessary to analyse the potential for medical tourism in Coimbatore city with reference to the quality of health care services offered by the private hospitals in Coimbatore city.

2   Statement of the problem

Health care facilities plays a vital position among other services owing to the high risk associated with the nature of services provided. Though a large number of public and private hospitals are functioning globally, it has been found that most of the government owned health centers are unable to provide quality services to the patients. Moreover, the private hospitals are also unable to fulfill the necessities of the patients to a certain level. The main issue faced by the hospitals is that they are unable to offer quality health care services based on the requirements and expectations of the patients. One of the most

important issue they face is lack of adequate and well-timed medical treatment to the patients. Few other issues faced are non-availability of medical facility, inadequacy of experienced and competent doctors, nurses and other employees.

This has made the people to migrate from different parts of the world for want of quality health care services. In this current scenario medical tourism has become the need of the hour. Therefore, the present study has made an attempt to find out the potential for health and wellness tourism provided by the private hospitals in Coimbatore city in India.

3 Objectives of the study

- To analyze the potential for medical tourism in Coimbatore city with reference to the quality health care services provided by the hospital.
- To analyze the level of satisfaction perceived by the respondents with respect to the quality of health care services offered by the leading private hospitals in Coimbatore city.

4 Research Methodology

4.1 Area of Study

The study has been conducted in the Coimbatore district of Tamilnadu state well-known for its agricultural and industrial advancement. Well-known hospitals in Coimbatore also provides exclusive treatments at reasonable costs, drawing the attention of patients not only from the neighboring districts but also from other states in India and other parts of the world.

4.2 Sources of data

The present study is empirical in nature constructed based on the primary data collected from the inpatients of the select private hospitals in Coimbatore city. For the purpose of data collection, a self-addressed questionnaire has been prepared to cover the inpatients of selected 5 private hospitals located in Coimbatore city. The secondary data has been sourced from various health reports, magazines, journals, and also from other e-resources. Data collected has been organized and the appropriate statistical tools have been applied to analyse the data and suitable interpretations were provided to validate the results.

4.3 Sampling Design

Private multi-specialty hospitals, having a bed strength of 500 have been considered for the study. Five such hospitals located in Coimbatore city have been considered for the study namely Kovai Medical Center and Hospitals, K.G Hospital, PSG Hospitals, Sri Ramakrishna Hospital and Arvind Eye hospital, from these hospitals 200 inpatients have been identified for the study. The patients who have been capable and agreeable to respond to the study have been identified and the questionnaire has been distributed to them. The period of the study has been fixed for six months from April 2019 to August 2019.

5   Review of Literature

Sanjay.S. Kaptar and Vinita Pimpale (2015) their article on "Medical tourism", has stated that India has remarkable stock of intellectual capital in health and well-being. World class medical facilities and heart transplantation surgeries are available in India. Accreditation of hospital, quality of services offered, health insurance etc., are some of the issues faced. The researchers have opined that if the hospitals in India concentrate more on quality medical care rather than quantitative services they can easily able to achieve greater heights. The study has also suggested that the hospitals in India should diverge their concentration from image building and promoting their services to value added services such as improving their quality in treatment, creating awareness about their performances and enhancing patient loyalty.

M. Meleigy (2017) in his news article titled "Medical visas mark growth of Indian medical tourism", he discusses that Indian medical tourism sector is a great source of foreign exchange. There is no pressure put on the government to find out the ways to make the sector benefit the public health care services. The study has documented India's effort to fuel medical tourism since 2002. India not only hosts medical tourists from developed countries, such as the United Kingdom and United States, but also from its neighborhood countries such as China, Bangladesh and Pakistan, offering medical services including joint replacement, heart surgery and complete health care services. The article has highlighted the gap between facilities concerned with medical tourism in the urban areas of the country and those that care to the health requirements of the average rural Indian population.

N. M. Vijay (2017) his article on "Medical tourism "subsidizing health care for developed countries", has studied about the influence of medical tourism in India. The study has referred medical tourism as the practice where people from wealthy nations will travel to developing countries to avail medical facilities at a reasonable cost. The study has focused on the influence of medical tourism on the residents' access to health care facilities. The study has argued that due to the prosperity in medical tourism sector the private hospitals are in need of more of human resources. The paper has also highlighted various other problems that have been intensified due to medical tourism. Exorbitant rate of medical waste is being dumped into the rivers and seas due to lack of proper waste management system and accountability of private hospitals in the country. It has been concluded that instead of promoting medical tourism the government should emphasis on the efforts of safeguarding the basic health care needs of all the citizens of the country.

6   Analysis and Interpretation

6.1   Reason for selecting the hospital in Coimbatore city

Table 1 describes the distribution of respondents based on the priority given by them in selecting the hospital in Coimbatore city.

Table 1. Kendall's co-efficient of concordance. Reasons for selecting the hospitals in Coimbatore city

Particulars		Rank 1	Rank2	Rank3	Rank4	Rank5	Rank6	TOTAL
Family doctors' advice	No	34	5	12	5	8	17	81
	%	42	6.2	14.8	6.2	9.9	21.0	100.0
Reputation of the physicians working	No	8	28	9	15	18	3	81
	%	9.9	34.6	11.1	18.5	22.2	3.7	100.0
Reputation of the hospital	No	11	15	29	18	5	3	81
	%	13.6	18.5	35.8	22.2	6.2	3.7	100.0
Lower charges compared to other hospital	No	4	9	17	22	15	14	81
	%	4.9	7.1	21	27.2	18.5	17.3	100.0
More facilities and better care are available	No	10	17	10	10	30	4	81
	%	12.3	21	12.3	12.3	37	4.9	100.0
Recommendations of other patients	No	14	7	4	11	5	40	81
	%	17.3	8.6	4.9	13.6	6.2	49.4	100.0

Table 2. Ranks

Particulars	Mean rank
Family doctors' advice	2.99
Reputation of the physician's working	3.20
Reputation of the hospital	3.00
Lower charges compared to other hospital	3.95
More facilities and better care are available	3.56
Recommendations of other patients	4.31
Kendall's W	.084

Table 3. Descriptive statistics for the level of satisfaction for infrastructural facilities

Infrastructural facilities	No	Minimum	Maximum	Mean	St. Deviation
Availability of rooms	200	2.00	5.00	4.2500	.6927
Cleanliness of the floors	200	2.00	5.00	4.3100	.6974
Sanitation facilities in the hospital	200	1.00	5.00	4.2400	.7106
Hygienic conditions of the rooms	200	2.00	5.00	4.2600	.6817
Ventilation of the rooms	200	2.00	5.00	4.2250	.7049
Drinking water facilitates	200	2.00	5.00	4.2650	.7796
Provision in rooms	200	2.00	5.00	4.1650	.7487
Provisions for security	200	2.00	5.00	4.2150	.6937

ANOVA
Hypothesis

There is no significant difference among the age group of the respondents and their level of satisfaction on the infrastructural facilities provided by the hospitals in Coimbatore city.

Table 4. Age group and infrastructural facilities

Particulars	Infrastructural facilities-satisfaction score			
	Mean	S.D	No.	
Age	1–10 years	36.67	3.27	6
	10–20 years	34.25	4.13	20
	20–30 years	33.06	5.01	71
	30–40 years	34.95	4.62	37
	40–60 years	33.79	4.32	47
	Above 60 years	34.37	4.49	19
TOTAL		33.93	4.63	200

Table 5. ANOVA for infrastructural facility – satisfaction score

Particulars	Sum of squares	Df	Mean square	F	Sig
Between groups	143.977	5	28.795	1.355	NS
Within groups	4123.043	194	21.253		
Total	4267.020	199			

7 Findings of the study

- Percentage analysis has revealed that majority of the respondents have been male between the age group of 20–30 years, have been Indians, graduates, doing business with a monthly income of Rs.20,000 to 40,000, having a family size of 4 to 5 members.
- Most 25% of the respondents have been influenced by their family members in selecting this hospital in Coimbatore city.
- Most 43.5% of the respondents were aware of this hospital through their friends and relatives.
- Most 46.5% of the respondents have selected the hospital in Coimbatore city since it is near to their state or district.
- Majority 88.2% of the respondents have been satisfied with the services offered by the select hospitals in Coimbatore city.
- Majority 79.9% of the respondents have been willing to recommend as good treatment is being provided by the hospitals at Coimbatore city.

- Most 42.1% of the respondents have given top priorities to high hospital charges for not taking treatment in their own city/state or country.
- Most 45.7% of the respondents have given top priority for lack of transparency as the major payment problem faced by them in the hospital for undergoing the treatment.
- Kendall's co-efficient of concordance in (Table 1) & (Table 2) have shown that there is less similarity among the respondents in assigning the ranks for the reasons for selecting private hospitals in Coimbatore city.
- Descriptive statistics presented in (Table 3) has described that majority of the respondents have been highly satisfied towards the infrastructural facilities provided by the hospitals in Coimbatore city.
- From the ANOVA results (Table 4) & (Table 5) it has been found that there is no significant difference among the age group and the satisfaction score of the respondents on the infrastructural facilitates offered by the private hospitals in Coimbatore city.

8   Suggestions

- The waiting time in the hospitals can be reduced, by simplifying the procedures and formalities for registration.
- New technology can be introduced and more of specialist doctors can be appointed in the hospitals to improve the medical tourism in Coimbatore city.
- Infrastructural facilitates in the hospitals can be enhanced for attracting more of medical tourists in Coimbatore city.

9   Conclusion

The research study has been attempted to analyze the potential for medical tourism in Coimbatore city with reference to the quality of health care services provided by the private hospitals. It is clearly evident form the study that providing better health care facilities and customer satisfaction will attract lot of patients outside Coimbatore and from outside India, which in turn will contribute to the development of Coimbatore city as one of the medical centers in the world. So, it is the duty of all the hospitals and government to pay more attention to bring world health standards in the hospitals in Coimbatore city.

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Supply Chain Resilience: Exploring the Research Trends Through a Bibliometric Approach

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Abstract. The incessant logistic restrictions due to the pandemic crisis have caused a great impact on the performance of the stakeholders in the supply chain. Thus, the field of supply chain resilience (SCR) has received increasing attention on minimizing the impact and improving the supply chain management system to sustain during a difficult situation. This paper explores the trends and performance of research on SCR within 10 years (2012 to 2021) using bibliometric analysis based on the dataset from the Scopus database. The evaluation of the performance of publication on SCR was analysed using Harzing's platform, while the mapping of the bibliometric network was visualized using VOSviewer. The results of bibliometric analysis based on 405 publications show significant growth in the number of publications in the research domain of SCR from 2012–2021, with three topics that are persistent across the 10-year study period, namely risk management, sustainability, and agile management system. This paper hopes to contribute as a point of reference on the extant and emergent topics and methodology decisions for future studies on supply chain resilience, especially during an uncertain situation.

Keywords: Supply chain resilience (SCR) · Bibliometric analysis · Covid-19 pandemic · Harzing's · VOSviewer

1 Introduction

1.1 Background to the Study

The Covid-19 pandemic has caused supply chain disruptions in several key economic sectors, due to operation and logistic restrictions. Many extant studies on the impact of the pandemic on business sectors showed that supply chain [16, 18], production [17, 22], and marketing [4, 22] are the most impacted business function of a business organization. Scholars in the supply chain suggest two important factors that always have

been neglected in the channel system, i.e., environmental uncertainty [1] and a resilient channel system [19]. With the increasing occurrence of uncertain risks like disease spread crisis, natural disaster, and economic crisis, business sectors need to consider a resilient supply chain for their business continuity. Many scholars viewed the adoption of an agile and robust supply chain management as the most promising strategy for a business organization to be more resilient in a time of crisis [3, 9]. Notwithstanding, it is still unknown to what extent supply chain resilience (SCR) has been embraced by scholars in supply chain management studies before and after the pandemic. Therefore, tracking the evolution of research publications on SCR studies is essential to understand the emergent research focus in the field for future research opportunities. This paper aims to answer the research questions as follows: -

Research Question 1. What is the trend and performance of research output relating to SCR before and during the pandemic era?

Research Question 2. What insights can be obtained from published articles on SCR through co-occurrence author keywords?

This paper is organized as follows. In the preceding section, a review of the bibliometric analysis literature and previous studies on SCR-related papers is presented. The methods used in this study are then discussed. The analysis and findings section follows, which summarises the data obtained from the Google Scholar and Scopus databases. The conclusion then discusses the summary, limitations, and future research recommendations.

1.2 Literature Reviews

Supply Chain Resilience. A supply chain is a channel where goods or services flow from the producers to final consumers, which is developed by a variety of participating intermediaries that channel a commodity for use or consumption accessible [5]. Studies on supply chain management have been deliberately researched from the perspective of technology and engineering [13] by focusing on designing and programming the logistic system. In supply chain resilience studies, the research domain has been significant among business and management scholars [12] when a resilient supply chain is becoming important by business organisations, resulting from the increasing occurrence of uncertain risks like disease spread crisis, natural disaster, and economic crisis. Extant literature suggests a resilient supply chain should adopt an agile system that focuses on speed in reaching the market [3, 9, 15].

In response to methodology, several approaches have been used by scholars to study supply chain resilience, including quantitative metrics [10], theorized/modeling approach [7], and systematic literature reviews [8, 14]. The increasing use of metrics concepts in analysing secondary datasets like bibliometric analysis [12] and scientometrics [20] has contributed to the body of knowledge especially helping in the development of assessment tools to measure supply chain performance [8, 23]. It is undeniable that this literature facilitates the background studies in SCR, nevertheless, it is of interest to explore further the trend and performance of studies that have been done so far in SCR

via quantitative metrics apart of manual reviews of literature, which might pose distorted analysis due to personal prejudice [8].

Bibliometric Analysis. Bibliometric analysis is one of the quantitative metrics analytical approaches which is usually utilized by researchers using the available library and information science (LIS) tools to evaluate the trend and performance of publications within a research topic or study. Although some scholars discussed the limitations of bibliometric analysis as compared to primary data analysis, Cagan [6] suggested that output from bibliometric analysis is adequate as it facilitates researchers to a comprehensive development of research themes and evolution of keywords for future research opportunities. Based on the researcher's initial article search on bibliometric studies and SCR in Google Scholar, the use of bibliometric analysis in SCR study is still scarce, i.e. only two publications shown in Google Scholar from 2018 to 2022. The researcher then searched another article from the Scopus database, and the top four publications in bibliometric analysis and SCR were reviewed as the underlying methodology for this study. Scopus database was selected for the reason that it is one of the largest curated abstract and citation databases consisting of peer-reviewed scientific content on a global

Table 1. List of previous bibliometric studies on supply chain resilience

Author	Domain/Search strategy	Database	Total documents examined	Bibliometric attributes
Ekanayake, Shen & Kumarasamy (2021)	"Supply chain resilience' AND "resilient supply chain"	Web of science	664	Co-citation network, keyword co-occurrence network
Philsoophian, Akhvan & Abbasi (2021)	"Supply chain" AND "alliance" AND (resilien* OR flexibil* OR agil* OR redundan* OR collaborat*	Web of science	259	Distribution of articles by year, country, influential journals, research area, author, affiliations, keywords
Nimsai, Yoopetch & Lai (2020)	"Sustainable development" AND "supply chain" OR "sustainability in supply chain"	Scopus	2,358	Trends in the literature, citation and co-citation analysis, keyword co-occurrence
Xu, Zhang, Feng & Yang (2020)	(supply chain) AND ('desruption* OR 'resilien*)	Web of science	1,310	Mapping analysis, network of core authors, density visualization of keywords

and regional scale while ensuring that only the highest-quality data is indexed through rigorous content selection [2]. Scopus' credibility has led to its use as a bibliometric data source for large-scale analyses in research evaluations. Meanwhile, the use of Google Scholar stems from its freely accessible academic bibliographic database, which has been proposed as a substitute or complement to commercial citation databases such as Scopus (Elsevier) [2]. Table 1 shows some of the bibliometrics attributes that have been explored by authors, namely, co-citation analysis [8, 13], keyword co-occurrence network [12, 21], distributions of articles by year and country [21]. All authors used the "supply chain" and "resilience" as a search strategy for document results.

Ahmi [2] suggests several reasons why bibliometric analysis is significant to some people or researchers, i.e. (i) to discuss the appropriate methods and measurement, (ii) to expose to a collaborative research network within the area of study, as well as (iii) to develop a research assessment tool for performance ranking. Hence, it is crucial for this study to explore the previous literature objectively and algorithmically by exploring the trend and performance of SCR studies through a bibliometric approach.

2   Research Methodology

This paper discovers the evolution of SCR studies throughout the past ten years (2012–2021) by analysing the SCR publication trend and performance (including the number of publications, total citations, publications by subject area and source title, distribution of publication by countries), and keyword analysis (co-occurrence of author keywords) using bibliometric analysis. The trend and performance of publications on SCR studies were analysed using Harzing's Publish and Perish [11] while the visualization of the network of keywords was analysed using VOSviewer software [12, 21]. Microsoft Excel was used for descriptive analysis, i.e., the frequency and percentage of publications included in the study as well as to create appropriate graphical representations. The document searching in the Scopus database using two keywords based on the review of the literature, i.e., "supply chain resilience" AND "resilient supply chain". The keyword search produced 449 document results which then were refined by year (2012–2021) to indicate the trend in SCR research and produced 405 publications to be examined. Then, the dataset was evaluated in terms of the trend and performance of publications by year, subject area, source title, and country. The second stage of the analysis was to visualise the bibliometric network by author keywords in SCR studies. Figures 1 and 2 show the procedures of bibliometric analysis and research model for the study.
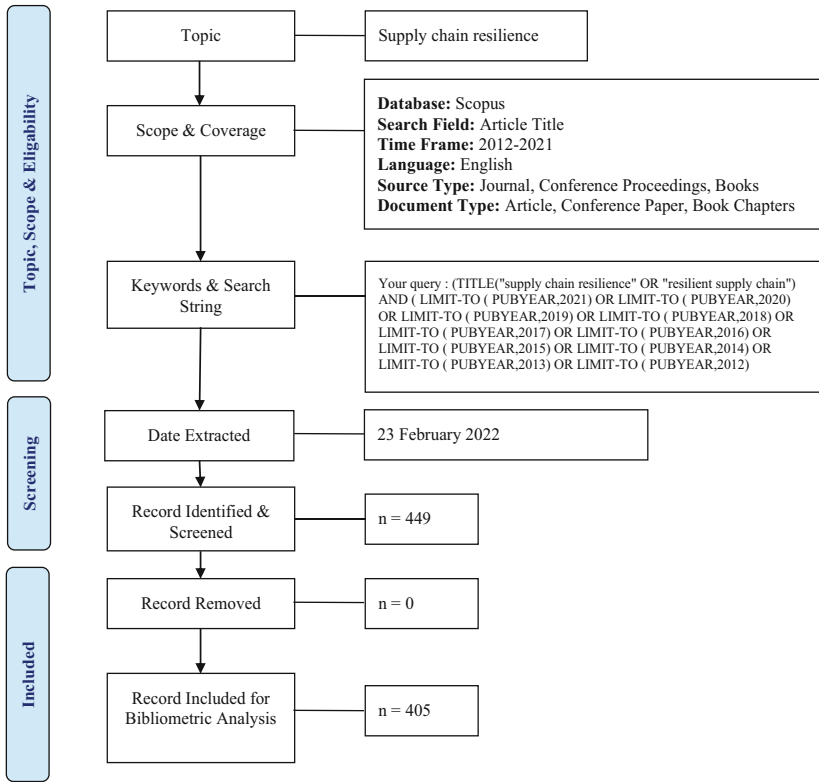
Fig. 1. Procedures of getting the dataset in the Scopus for review of the SCR literature
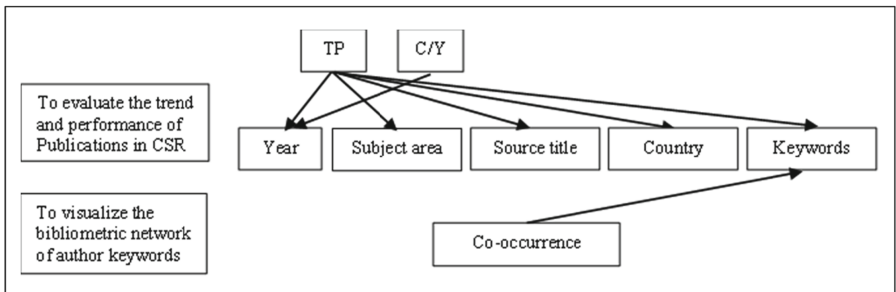
Fig. 2. The research model for the study (Note: TP = Total Publication, C/Y = Citation per year)

3   Results

Trend and Performance Analysis. Table 2 shows the summary of 405 documents examined in this study within the time frame of 10 years (2012–2022). The results show that number of publications and citations per year is increasing in recent years. Figure 3 shows the type of documents included in this study, namely journal article (66%), followed by conference paper (22%), review of an article (5%), book chapter (5%), and only a few from editorial, short survey, and letter.

Table 2. Total publications and citations

Publication years	: 2012-2021				
Citation years	: 10				
Papers	: 405				
Citations	: 10,752				
Year	Total Publications	Total Citations	Citations per Paper	Citations per Year	h-index
2021	144	725	5.03	725	12
2020	58	1218	21.00	609	18
2019	50	1632	32.64	544	14
2018	38	934	24.58	233.5	15
2017	25	1163	46.52	232.6	16
2016	28	888	31.71	148	10
2015	24	1444	60.17	206.29	12
2014	19	1363	71.74	170.38	12
2013	8	933	116.63	103.67	6
2012	11	452	41.09	45.2	7
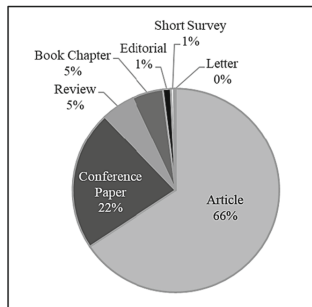
Fig. 3. Types of documents examined

In relating to the distribution of publications by year (2012–2021), the number of articles on supply chain resilience has increased significantly since 2012. According to Fig. 4, the results show rapid growth in the accumulative percentage of publications in 2021. This is supported by the number of citations per year (Fig. 5) which shows tremendous growth in citations in recent years. Publications are also classified based on the corresponding author's country, as depicted in Fig. 6, Europe (Germany, Czech Republic,

United Kingdom, and the Netherlands), Asia (India, Hong Kong), and America have the highest number of publications in SCR studies. This result is similar to Philoosophian [13] who found the most active countries in SCR publication are in China, USA, and UK. Table 3 depicts the top eight most active authors in the SCR research field are from business/economics and information/technology management college, where practical idealists in supply chain management originate.
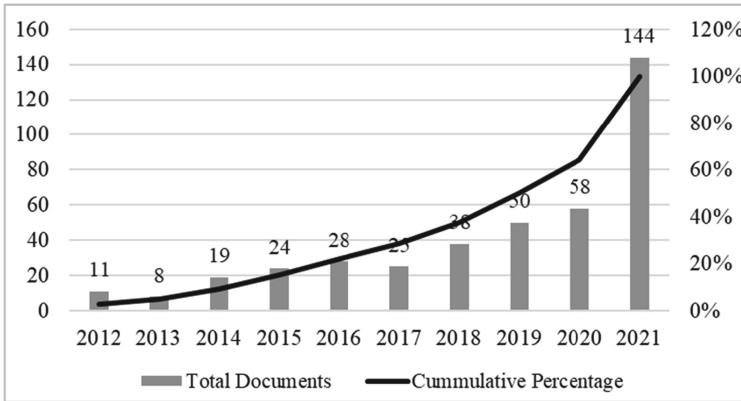
Fig. 4. Total publications by year
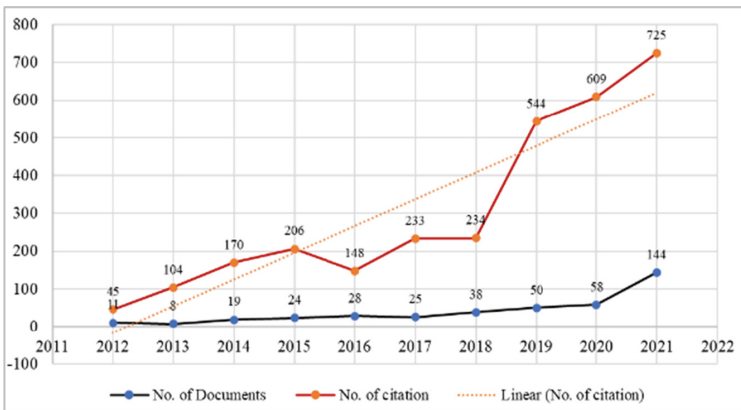
Fig. 5. Number of publications and citations per year

In order to evaluate the influence of different journals in SCR studies, the number of publications by subject area and source title was also calculated. As Fig. 7 shows, the SCR field has been studied from the perspective of the top five research areas namely "business management and accounting", "decision sciences", "social sciences", "environmental sciences", "energy" and "agricultural and biological science". Figure 8 shows the top four journals that cover the highest number of articles in SCR, i.e. in the field of production research, logistics and distribution, engineering, and sustainability. These
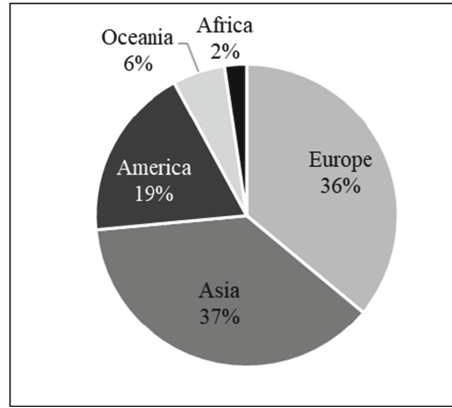
Fig. 6. Distribution of publication by countries

Table 3. Top 8 most active authors by Affiliations and Country

Author name	TD	%	Affiliation	Country
Ivanov, D	10	2.47%	Berlin School of Economics and Law	Germany
Lenort, R	9	2.22%	Technical University of Ostrava	Czech Republic
Mandal, S	9	2.22%	Amrita School of Business, India	India
Wicher, P	8	1.98%	Technical University of Ostrava	Czech Republic
Ekanayake, E.M.A.C	7	1.73%	The Hong Kong Polytechnic University	Hong Kong
Stevenson, M	7	1.73%	Lancaster University Management School, Lancaster	United Kingdom
Rajesh, R	6	1.48%	ABV Indian Institute of Information Technology and Management, Gwalior	India
Scholten, K	6	1.48%	University of Groningen	Netherlands

Note: TD = total documents, % = percentage

results demonstrate that SCR research is an interdisciplinary subject that the research can also be studied from other perspectives, including "chemistry", "pharmacology" and "arts and humanities".

Keyword Analysis. The analysis of 405 publications concludes with 43 co-occurrence keywords. The mapping for the co-occurrence of author keywords was derived through VOSviewer, which provide 43 threshold items grouped under 7 clusters. Figure 9 shows the network visualisation of author keyword co-occurrence of publications on SCR.
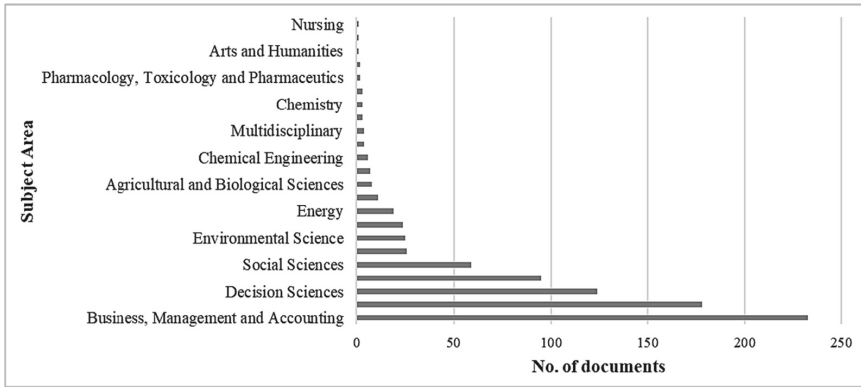
Fig. 7. Published documents by subject area
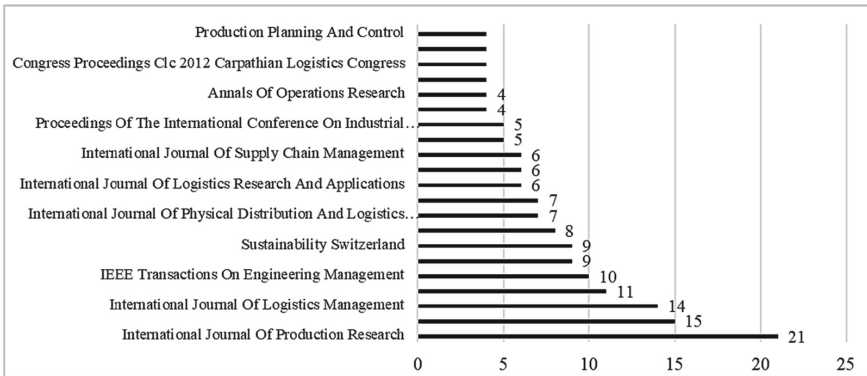
Fig. 8. Number of published documents by source title

Based on the network visualisation, the researcher has analysed the clusters and re-group all the similar meanings of keywords into 3 new represented clusters, which the researcher proposed in Table 4. The findings showed that the most popular research topic that has always been emphasised by researcher/author in the field of research of SCR are (i) risk management, (ii) sustainability, and (iii) agile management system. These themes provide a signal about the higher interest of researcher in SCR topic, thus can facilitate the business organisation in the development of a new business model in the supply chain, or to academic/researchers in the development of conference track, book chapter title, or research proposals.
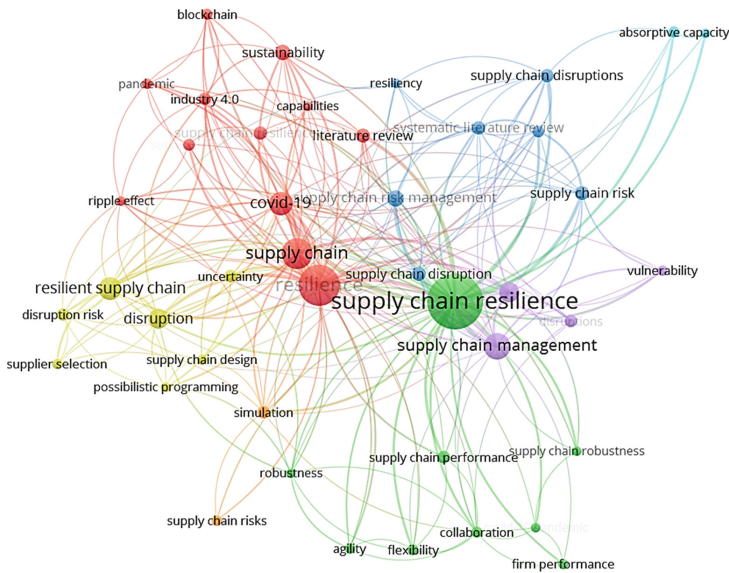
Fig. 9. Network visualization of author keyword co-occurrence of publications on SCR.

Table 4. Summary of keywords from publications on SCR

Cluster	Author major keywords	Proposed refined keywords
1	Disruptions, resiliency, risk, vulnerabilities, uncertainty, absorptive capacity, …	Risk management
2	Blockchain, capabilities, Covid-19, Industry 4.0, pandemic, ripple effect, sustainability, …	Sustainability
3	Agility, firm performance, flexibility, robustness, possibility programming, firm performance, …	Agile management system

4   Conclusion and Future Direction

A resilient supply chain is becoming a crucial topic in the economic and social development of countries nowadays as it must be able to react appropriately when facing an uncertain situation like a natural disaster, economic downturn, pandemic, and other turbulences. In this study, the bibliometric analysis of available documents in supply chain resilience shows that the interest in the research field is increasingly significant in recent years since the pandemic era. During the uncertain situation, supply chain management needs to be more resilient in order to ensure continuous operation of distribution and logistics of goods along the chain to the market. Future studies on the current topic of SCR are therefore recommended. First, future research on supply chain resilience should be studied from a multidisciplinary perspective for example by incorporating the business, technology, economics, and law disciplines, to contribute to the body of

knowledge as well as to develop a robust measurement to overcome supply chain disruptions. Europe and Asia are the first and second place in the number of publications on supply chain resilience, which represents that both developed and developing countries are giving increasing attention to the research field. Second, it is proposed that supply chain resilience publications be organised around business and non-business topics, as well as science and non-science. Furthermore, the keyword analysis shows that "risk management", "sustainability", and "agile management system" have been among the most frequently used keywords by authors. The result is expected since these keywords emphasise the common ground of research in this field and are considered as important for discussion in the literature. This paper discussed a limited number of keywords in document searching where supply chain resilience should take a broader range of keywords in order to provide more rigorous data. Furthermore, other available document searching from other academic databases like Web of Science (WOS) and Dimensions can also be included in future research in order to get more datasets to be analysed. Combining all of these databases probably will contribute to more interesting and valuable results. As this research study focused exclusively on the bibliometric analysis of the publications obtained, future studies on SCR may incorporate additional types of analysis, such as a systematic literature review (SLR), historical analysis, meta-analysis, and structured analysis. Notwithstanding, this article lends insights to researchers on the trend and performance of research in the field of supply chain resilience, in terms of the most popular research themes and disciplines. This paper hopes to contribute as a point of reference on the extant and emergent topics and methodology decisions for future studies on supply chain resilience, especially during an uncertain situation.

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Factors Affecting the Quality of Construction Projects in Saudi Arabia During the Covid-19 Period

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Abstract. The quality of any construction project is considering the main factor that affect the continuity of any project. In disasters such as disease outbreaks, earthquakes or global war, construction filed is the first business affected. Kingdom of Saudi Arabia, in the COVID-19 diseases, call for partial curfew in most of the country cities from 7:00 pm to 6:00 am. The cur-few has a major effect on the contractions on all over the country. In additional to this, the project owners, contractors, or supervisors have a huge concern of anybody involved in the project get infected. In this work, an official survey has been constructed and distributed, in both languages' Arabic and English, between different governmental companies around the whole country. 270 responses have been received from different perspectives, project contactors, supervisors, and owners. The analysis of the survey is done and introduced in this work. There are three main responses: owner's, supervisor's, and Contractor's. the main factor from owner's view is the.

Funding where supervisors recommend the law and health situation and finally the contractor's vote for the funding that has a great effect on the quality.

Keywords: Construction project · Quality · Contractors · Owners · Supervisors and COVID-19

1 Introduction

The quality of construction projects is defined by several definitions, one of which is the desire of the people that they define, or are they conforming to specifications and standards, or they are performance according to standards or paid value. But in general, the definition of building quality in projects is to satisfy customers and meet their desires and requirements based on a specific budget. Measuring that quality is done according to specific indicators related to the time, cost, and required technical outputs [1, 2]. This requires quality control through the formation of work teams or followup groups and supervision to ensure quality is achieved. And always in construction, the quality criterion is the satisfaction factor, with the required cost and the time required to obtain it without delay [3]. Quality is affected by several factors, including the lack of materials

and equipment, changes in design, plans and errors in estimating the cost, and are also affected by a lack of budget.

There are other factors that may affect the quality of construction implementation, including the wrong schedule for implementation and poor planning, as well as the absence or lack of evaluation criteria [4]. There are other influencing factors that must be considered, such as terrain factors, weather factors, the geography of the construction site, its type and location, as well as the surrounding local culture [5]. The main objective of this research is to identify how quality is applied in construction and to know the negative factors that have an impact on achieving quality for projects [6]. The paper will organize as follow: in the second section, the literature survey will be mentioned. Then methodology will be discussed in the third section before introducing the results and discussion in the fourth section. Finally, the conclusion will be ending the work. Quality is the most important component of infrastructure development projects and all construction projects such as cost, time, and accuracy of work. Excess of costs, acceleration of material costs, inflation, procurement, selection of materials, absence of oversight, poor site supervision and delay in work are among the most important quality problems in construction. For quality costs are three types: evaluation cost, failure cost, and prevention cost [7–10]. The Covid-19 had a great effect on cost overrun in construction project, Quality Control in Building Construction and optimum health and safety on construction projects [11–13]. Previous research has been done on several countries to determine the most important factors affecting the quality of construction projects from different points of view from developing and other developed countries, and the cost is an important issue and varies by country, as in some developing countries it exceeds 100% of the expected cost of the project, and some will be mentioned to know the most important factors affecting the quality of construction projects in these countries. One of the factors affecting the quality of projects in Pakistan is the high material prices, inflation, material selection and lack of communication. As for India, which is close to it and like some of its terrain and weather, it was found that bad weather, communication problem and lack of project management skills are the most important influences on the quality of projects. Given the Gaza Strip, the political situation is the main influence on the quality of projects and the availability of construction materials [14, 15]. The most important factors affecting the quality of construction projects in Hong Kong are customer-focused, effective project management, team building and the environment in which the project is taking place. In Malaysia, the quality problems of construction projects lie in the lack of technical people and a lack of awareness of the quality system [16, 17]. There are necessary factors that must be taken care of to raise the quality of construction, which may summarize here as building an effective work team with a clear goal and assuming responsibilities and modernizing quality systems and managing them properly and effective management of contractors and the lack of political and bureaucratic interference in projects. The negatives of the quality of construction projects can be identified in the lack of continuous development, lack of training, lack of confidence between the owner, suppliers, and contractor, and the presence of a communication gap between project participants. Studies recognized by John et al. indicate that the delay in construction of projects due to construction project management and a scheme Coordination and quality of middle management [18, 19].

2 Methodology

Affecting the quality of performance of construction projects. The factors affecting the project were chosen according to Table 1, such as weather impact and political matters. A questionnaire was done, identifying the differences and points of influence. Interpretation of data Weights range from [1–4] from worst to best field surveys and questionnaires were carried out for the professionals. The construction and 40 questionnaires were distributed directly and through social media, and therefore the overall response to all the questions percentage. The following table shows in-formation about the role of the questionnaire. Table 2. Responses received from 270 person.

Table 1. Factors in mentioned survey that affect the project quality.

S. no.	Identified factors	S. no.	Identified factor
1	Shortage of material/equipment	10	Regulatory authorities
2	Law and order situation	11	Management team of contractor
3	Financial capability of contractor	12	Technical person availability
4	Funding	13	Low bid
5	Communication infrastructure	14	Terrorism
6	Escalation of material prices	15	Regulatory authorities
7	Procurement unit of contractors	16	Government policies
8	Cash flow	17	Weather condition
9	Bureaucracy and political influence		

Table 2. Responses received from 270 person.

	Total responses	Experience (years)	Responses
Owners	50	0–5	25
		5–10	5
		10-above	20
Supervisors	185	0–5	55
		5–10	94
		10-above	36
Contractors	35	0–5	20
		5–10	10
		10-above	5

The writing identified with chance administration in the development business was investigated. To recognize hazard factors that can essentially influence the principal

objectives of development activities, for example, time, cost, and quality. The writing was looked through utilizing research Google Drive. Watchword based pursuit strategy received. Watchwords incorporate postpone hazard, Dangers of cost overwhelm, quality dangers, and explanations behind poor task execution. Accordingly, 69 dangers Elements influencing venture execution were perceived. Recurrence investigation was performed utilizing. The recurrence of these hazard factors showing up in past examinations. To orchestrate and approve explicit hazard factors, an overview-based study was directed in the development business Pakistan. Experts from the scholarly community and industry were reached for their commitments. A pilot study was led through the dispersion of the underlying survey, from that point forward, the poll was conveyed to the development specialists by means of email and manual.

Table 2 shows the various classes of temporary worker, expert, and customer to which the survey was conveyed. All the specialists where each factor is required to be evaluated on a 5-point scale where "1" shows the most minimal rating, and "3" Moderate and "5" show extraordinary impact. They were approached to assess decide hazards independently with respect to their effect on schedule, cost, and quality [20].

3   Results and Discussion

The survey is initiated which consists of 18 easy and quick responses questions and distribute them to governmental employees or related to any Saudi government construction projects in different areas inside the country specially Riyadh and Jeddah cities. Two initial questions are constructed to determine the background of the survey fillers as given below:

1. What is you experience?
2. How many years of experience?

In the first question, the survey is distributed between three types of responsible, Owner, Supervisor and Contractor. In the second question, given three options for his/her experiences from zero to 5 years, from 5 to 10 and from 10 and more.

3.1   Survey Design

Then there are 16 questions are filled in the survey as illustrated below:

1. The Law and Health Situation affect the quality of the project.
2. Financial capability of Contractor affects the quality of the project.
3. The Shortage of Material/Equipment affect the quality of the project.
4. Funding affects the quality of the project.
5. Communication Infrastructure affect the quality of the project.
6. Escalation of Material Prices affect the quality of the project.
7. Procurement Unit of Contractors affect the quality of the project.
8. Cash Flow affect the quality of the project.
9. Government Policies affect the quality of the project.

10. Weather Condition affect the quality of the project.
11. Bureaucracy and Political Influence affect the quality of the project.
12. Regulatory Authorities affect the quality of the project.
13. Management team of Contractor affect the quality of the project.
14. Technical Person Availability affect the quality of the project.
15. Low Bid affect the quality of the project.
16. Terrorism affects the quality of the project.

After distributed the survey to a wide range of interested persons, 50 responses are received form owners, 185 responses from supervisors and 35 from contractors to be in total 270 response. The given figure below, Fig. 1, illustrate the responder type:
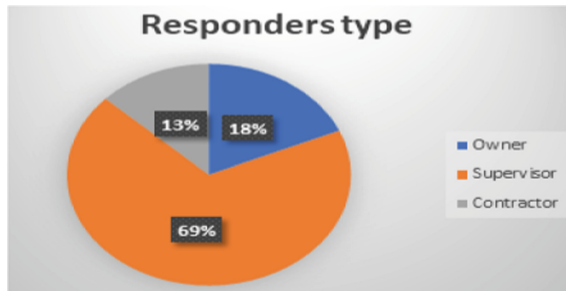
Fig. 1. Type of responders

The received response from the supervisors is 69% of the distributed survey, and 18% are owners and the remaining 13% for the contractors. In the second question, the Fig. 2 below illustrate the distribution. A 50% of the owners are still low experiences and have less than 5 years of experiences in the field as shown in Fig. 2-a. On the other hand, a 51% of the supervisors are in the mid-range of experiences, 5–10 years of experiences, given in Fig. 2b. And a 57% of the contactors are young in the field as in Fig. 2c. Table 4.1 summarize the participants according to their experiences and their roles. Table 3 summarize of all participants in our survey according to their roles and experiences.
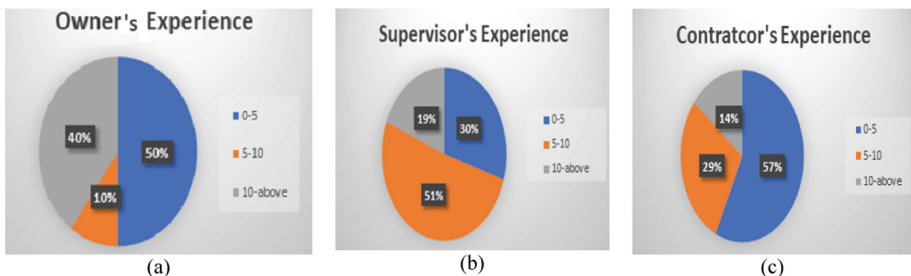
Fig. 2. (a) Illustrate the owner's experiences, (b) shows the supervisor's experiences, and (c) the contractor's experiences.

Table 3. Summary of all participants in our survey according to their roles and experiences.

	Total responses	Experience (years)	Responses	Ratio (%)
Owners	50	0–5	25	50
		5–10	5	10
		10-above	20	40
Supervisors	185	0–5	55	29.7
		5–10	94	50.8
		10-above	36	19.5
Contractors	35	0–5	20	57
		5–10	10	29
		10-above	5	14

Hence, the responses for the three types are divided and illustrated as follows:

3.2 First, Owners' Responses and Comments

In this section, the analysis of the received response from the owners to determine the main factors affecting the quality of any construction project has been carried out. Two different approaches are approached, the first one done by using equal weights for all owners' experiences, 0–5, 5–10 and 10-above, which illustrated in Fig. 3 in Blue. On the other hand, another approach, where the owner experiences play the main factor. Owners who have a long experience, 10 and above, have a high weight factor 1. Owners with a medium experience have a weight of 0.9 (90%) and still in the begging of their work, 0–5 years, are weighted to 0.8 (80%). Figure 3 illustrates the comparison between two different approaches and the owner's ratio for each question.

As clearly seen from Fig. 3, questions number four, one and three respectively are the main factors on the quality as recommended by the project owners. Hence the main factors affecting the construction project quality are:

a) Funding is the main factor that affect the contraction project quality.
b) The law and health situation are considered one of the main factors affect the project quality.
c) The shortage of material/equipment is the second important factor affects the quality.

As notices from the owner's responses, the main factor is the funding then any shortage in the materials or equipment's which are not surprising factors. Many reaches in different countries recovered the same output from the owners. However, the third factor, which is the law and health situations comes to be one of the main factors that affect the construction project quality, as this survey was distributed in the first two weeks of COVID-19 virus in the Kingdom of Saudi Arabia, where the working hours has been reduced to be from 6:00 am to 3:00 pm every day.
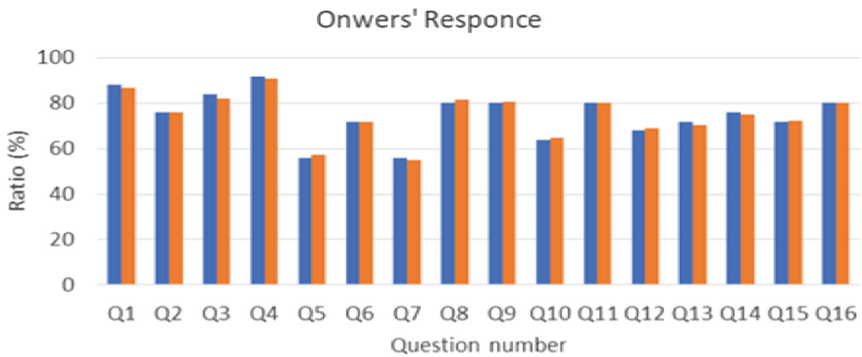
Fig. 3. Equal and weighted owners' questions respond.

3.3 Second, Supervisor's Responses and Comments

Supervisors are our main target as 185 responses were received from them, which represents almost 70% of the received response. As illustrated in Fig. 4, the two different approaches give two different results as given below:

a) Using the first approach, which does not consider the experience, one can notice the followings. There are four reasons from the point of supervisor's view affecting the quality. The first one is the law and health situation which has a great effect on the quality.
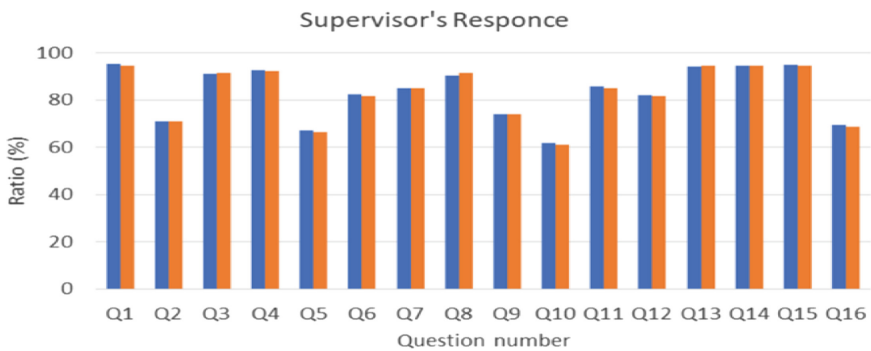
Fig. 4. Equal and weighted supervisor's questions respond.

- The second reason is the management team of Contractor which is also affecting the quality of the project.
- The availability of the technical persons due to the new technical roles in Saudi Arabia and the construction projects suffer in the last three years.
- One more reason is the low bid which is very important factor that affect the quality of any contortion project.

As clearly noticed, the factors are equal weights and no difference between them.

b) In the second approach, weighted experiences approach, as illustrated in Fig. 4, the factors are:

- The first one is the law and health situation which has a great effect on the quality.
- The second reason is the management team of Contractor which is also affecting the quality of the project.
- The availability of the technical persons due to the new technical roles in Saudi Arabia and the construction projects suffer in the last three years.
- One more reason is the shortage of material/equipment which is very important factor that affect the quality of any contortion project

By using both approaches, a conclusion mentioned that the management team of contractor is the main reason from supervisors' point of view that affect the quality of any construction project. The second reason is the availability of the technical persons and the third one is the cash flow.

AS noticed from the figure, the law and health situation are considered after the given factors above, as mentioned by the supervisors.

3.4 Third, Contractors' Responses and Comments

The contractor's response to the main factors affecting the quality construction project is analysed and conclude in this section. The same response was received for both regular and weighted experiences response, as given in Fig. 5. The factors are shown below, same effect for the two used approaches:

- The funding affects the quality of the project affect the quality.
- The second factor is the shortage of material/equipment during any running project.
- The third reason is technical Person Availability affect the quality of the project.
- The fourth concern for contractors is the law and health situation are considered the major effect that affects the quality of the project as we are in a very complicated health situation – COVID-19.

In additional to these, one more factor comes from the weighted approach which is the low bid affect the quality of the project.

In general, and according to the applied curfew in all over the country from 6:00 am to 3: pm due to the COVID-19 disease outbreaks, the quality of all construction project has been affected. Contractors, owners, and supervisors mentioned the same thing by picking the first question "Is the Law and Health Situation affect the quality of the project?" in the distributed survey. 270 responses were received from different regions and different experiences.
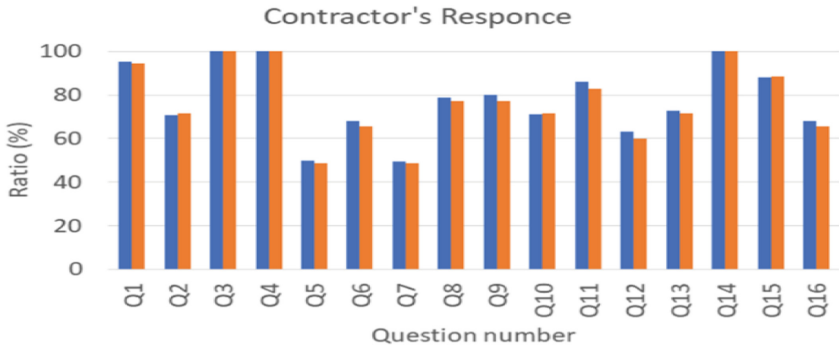
Fig. 5. Equal "blue" and weighted "orange" contractors' questions respond.

4   Conclusion

In this paper, the designed survey was distributed to more than 400 persons to get their feedback about the main factors affecting the quality of construction projects inside the Kingdom of Saudi Arabia. The response from 270 responses was received from different perspectives, owns, contractors and supervisors. Using two different approaches to analyse the feedback refereeing to the experience of the responder. In summary, the feedback from owners, contractors and supervisors regarding the factors affecting the quality of any construction projects in the first three weeks of COVID-19 virus in the Kingdom of Saudi Arabia.

1. Owner's responses are, there are three main factors:

    a) Funding is the main factor that affect the contraction project quality.
    b) The law and health situation are considered one of the main factors affect the project quality.
    c) The shortage of material/equipment is the second important factor affects the quality.
        Where the health situations come in the second place.

2. Supervisor's responses are:

    a) The first one is the law and health situation which has a great effect on the quality.
    b) The second reason is the management team of Contractor which is also affecting the quality of the project.
    c) The availability of the technical persons due to the new technical roles in Saudi Arabia and the construction projects suffer in the last three years.
        Here, the health issue is coming in the first concern.
    d) One more reason is the shortage of material/equipment which is very important factor that affect the quality of any contortion project

3. Contractor's responses are:

a) The funding affects the quality of the project affect the quality.
b) The second factor is the shortage of material/equipment during any running project.
c) The third reason is technical Person Availability affect the quality of the project.
d) The fourth concern for contractors is the law and health situation are considered

Also, the health is considering one of the main factors during the COVID-19 period in the KSA.

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How to Deal with the Results of PLS-SEM?

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Abstract. Despite the diversity of studies related to PLS-SEM, there is no study showing how to deal with the results of PLS-SEM in empirical studies. Therefore, this study aims to explain how to deal with the results of PLS-SEM briefly in order to facilitate the procedure for researchers. This study presented a hypothetical example in order to clarify the tests systematically. The example consists of two variables are human resource management practices as the independent variable and organizational performance as the dependent variable. The results of the analysis using the software of SmartPLS include three main steps namely initial description of the data, measurement model assessment, and structural model assessment. SmartPLS provides values for each predefined indicator including missing, mean, median, minimum, maximum, standard deviation, excess kurtosis, and skewness. The measurement model assessment includes three main aspects namely internal consistency reliability, convergent validity, and discriminant validity based on HTMT criterion. The structural model assessment includes four main aspects namely coefficient of determination, cross-validated redundancy, effect sizes, and path coefficients.

Keywords: PLS-SEM · Initial description of the data · Measurement model · Structural model

1 Introduction

The Partial Least Squares Structural Equations Modeling (PLS-SEM) is a variance-based method for estimating structural equation models with the goal of maximizing the explained variance of the dependent variables [1]. Moreover, PLS-SEM is an ordinarily utilized approach in the assessment of causal effects in the scope of path models taking latent constructs which are measured indirectly through many indicators [2]. The PLS-SEM was developed by the seminal paper by Wold [3] as mentioned by Vinzi et al. [4]. Extensive reviews on the PLS approach, with further developments, are given by Chin [5], and Chin and Newsted [6] for the new graphical interface and improved verification methods. The basic idea of PLS-SEM is that intricacy in a system can be studied by causality relationship among latent concepts "called latent construct", each measured by several observed indicators usually defined as manifest constructs [4].

There are many reasons to use PLS-SEM namely: (1) PLS-SEM can examine the measurement model and structural model at the same time [7]; (2) PLS-SEM is suitable for complex models like those with hierarchical structures and mediator or moderator effects [7, 8]; (3) Other analysis software lead to less clear conclusions and require a greater number of different analyzes, while the PLS-SEM provides more reliable and valid results [9, 10]; (4) PLS-SEM analysis has become a popular technique as an alternative to other SEM technologies like LISREL and AMOS [11]; (5) PLS-SEM does not require large samples to analyze, because it is a component-based approach [12, 13]; and (6) PLS-SEM provides more accurate estimates for paths analysis whether direct and indirect effects [5]. On the other hand, Hair et al. [14] suggest that it is better to choose PLS-SEM as the main analysis technique in the following cases "When the structural model is complex and includes many constructs, indicators and/or model relationships; when the research objective is to better understand increasing complexity by exploring theoretical extensions of established theories (exploratory research for theory development); when the path model includes one or more formatively measured constructs; when the research consists of financial ratios or similar types of data artifacts".

One of the common software of PLS-SEM is SmartPLS. SmartPLS was developed by Ringle et al. [15] under the name "SmartPLS 2". Then, it was developed and updated by Ringle et al. [16] under the name "SmartPLS 3". At the moment, the latest version of SmartPLS is 3.3.7. SmartPLS has acquired popularity with researchers since its launch in 2005 because it is freely available to academics and researchers, and has an easy-to-use user interface and advanced reporting features. Hair et al. [1] indicated that SmartPLS is "A milestone in latent variable modeling. It combines state of the art methods (e.g., PLS-POS, IPMA, complex bootstrapping routines) with an easy to use and intuitive graphical user interface". The model in SmartPLS is mainly based on theory and hypothesis to form paths. The paths in the model are created by the suggested constructs and indicators. The benefit of the model is that it allows researchers to explore and simplify the structure, in order to be able to assess the link between indicators and constructs for testing hypotheses [17].

Ringle et al. [18] indicated that SmartPLS is a useful software for examining models proposed by researchers in many fields, especially in the field of management (e.g., human resource management, accounting, logistics, marketing, supply chain management, production management, international business management, and operations management). SmartPLS allows drawing the path between constructs and identifying indicators of constructs [19]. SmartPLS also ensures that the indicators used in the model are valid and reliable for further analysis [11]. SmartPLS explains causal effects and validates hypotheses and theory [20]. Besides, SmartPLS introduces paths for the model that is able to describe the relationship between constructs and indicators. This comes as an important vital point to provide an understandable picture and support for the demonstration of results [21]. Finally, SmartPLS provides more accurate and valid results if the sample size is less than 250 than other methods of testing models or explaining the causal effects [18].

Despite the diversity of studies related to PLS-SEM (e.g., [1, 2, 4, 7, 11, 14, 18–20, 22]), there is no study showing how to deal with the results of PLS-SEM in empirical

studies. Therefore, this study aims to explain how to deal with the results of PLS-SEM briefly in order to facilitate the procedure for researchers. This study includes five sections namely introduction, initial description of the data, measurement model assessment (outer model), structural model assessment (inner model), and conclusion. This study presented a hypothetical example in order to clarify the tests systematically. The example consists of two variables are human resource management practices (career opportunities, compensation, human resource planning, performance appraisal, promotion, recruitment & selection, training, and development) as the independent variable and organizational performance as the dependent variable.

2   Initial Description of the Data

The initial description of the data is the first step in software of SmartPLS. The initial description of the data aims to give the researcher a detailed notion of how the respondents have responded to the indicators in the survey. SmartPLS provides values for each predefined indicator including missing, mean, median, minimum, maximum, standard deviation, excess kurtosis, and skewness. The missing data is the result of not responding to one of the indicators. The mean is the sum of the values divided by the number of values. The median is the middle number in a list of numbers in ascending or descending order and can be more of a description of that data set than the mean. Minimum refers to the smallest value in the data set, while maximum refers to the largest value in the data set. Standard deviation is an indication of how far a group of numbers diverges. Kurtosis and skewness are statistical methods for normality tests of data. Kurtosis is a measure of the peak of distribution, while skewness is a measure of asymmetry. Table 1 shows how descriptive analysis is reported in empirical studies. All constructs achieved zero for missing values, 3.27 to 4.02 for mean, 3 and 4 for median, 1 for minimum, 5 for maximum, and 0.950 to 1.182 for standard deviation.

Table 1. Descriptive analysis

Construct	Missing	Mean	Median	Min	Max	Standard deviation
COP	0	3.27	3	1	5	1.182
COM	0	3.36	3	1	5	1.053
HRP	0	3.67	4	1	5	1.013
PA	0	4.02	4	1	5	1.066
PR	0	3.79	4	1	5	.950
R&S	0	3.94	4	1	5	.984
T&D	0	3.64	4	1	5	1.031
OP	0	3.85	4	1	5	1.003

Note: COP: career opportunities, COM: compensation, HRP: human resource planning, PA: performance appraisal, PR: promotion, R&S: recruitment and selection, T&D: training and development, OP: organizational performance.

Table 2 shows how kurtosis and skewness for the normality test are reported in empirical studies. In order to ensure that the data has a normal distribution, the values of kurtosis and skewness should be range between $+3$ to -3. In this example, the value of Kurtosis for all constructs ranges from -1.533 to -0.564, while the value of skewness for all constructs ranges from -0.943 to -0.123. As a result, the data of this example has a normal distribution.

Table 2. Kurtosis and skewness for the normality test

Construct	Kurtosis	Skewness
Career opportunities	−1.533	−.291
Compensation	−1.096	−.436
HR planning	−1.041	−.358
Performance appraisal	−.564	−.943
Promotion	−1.179	−.357
Recruitment & selection	−1.396	−.123
Training & development	−.951	−.563
Organizational performance	−1.130	−.627

3 Measurement Model Assessment (Outer Model)

The measurement model assessment is the second step in software of SmartPLS. Generally, the measurement model is denoted as the outer model. The measurement model (outer model) describes the relationship between a latent variable and its indicators. The measurement model specifies the relationship between observable constructs and the underlying construct. In this context, the search for an investigation of suitable indicators is an important step with regard to the operationalization of such a construct. Moreover, the measurement model aims to determine how well the indicators (items) are loaded onto theoretically defined constructs. By measurement model assessment, we can ensure those survey items measure the fixtures they were designed to measure. Thus, ensuring that the survey instrument is valid and reliable.

In order to assessment the measurement model, the researchers should examine three main aspects namely (1) internal consistency reliability, (2) convergent validity, and (3) discriminant validity. The internal consistency reliability includes two main tests namely Cronbach's alpha (CA) and composite reliability (CR). CA provides an estimate of reliability based on the inter-correlations of the observed indicator constructs, while the CR indicates the degree to which the set of items consistently indicates the latent construct. Table 3 shows how internal consistency reliability (CA and CR) is reported in empirical studies. Generally, values between 0.70 and 0.95 for CA and CR are values widely accepted. In our example, all constructs achieved values ranging between 0.856

Table 3. Internal consistency reliability

Construct	Cronbach's alpha	Composite reliability
Career opportunities	0.900	0.931
Compensation	0.883	0.920
HR planning	0.885	0.920
Performance appraisal	0.868	0.910
Promotion	0.856	0.903
Recruitment & selection	0.874	0.914
Training & development	0.861	0.906
Organizational performance	0.943	0.932

and 0.943 for CA. Moreover, all constructs achieved values ranging between 0.903 and 0.932 for CR. As a result, the model of this study has internal consistency reliability.

Convergent validity refers to that indicators developed to measure a particular construct are actually measuring this construct. Chin and Yao [23] indicated that "Convergent validity states that tests having the same or similar constructs should be highly correlated. Two methods are often applied to test convergent validity. One is to correlate the scores between two assessment tools or tools' sub-domains that are considered to measure the same construct. In intelligence research, two intelligence tests are supposed to share some general parts of intelligence and at least be moderately correlated with each other. Then, moderate to high correlation shows evidence of convergent validity". The convergent validity includes two main tests namely factor loading (FL) and Average Variance Extracted (AVE). Table 4 shows how convergent validity (FL and AVE) is reported in empirical studies. Generally, researchers should accept and retain indicators that have loading 0.7 or more, while should drop and delete indicators that have loading less than 0.4. Regarding indicators that have loading between 0.4 to 0.7, researchers should retain indicators if values of CA, CR, and AVE are above the suggested threshold value. Whereas should delete indicators from construct only when deleting the indicator leads to an increase in the values of CA, CR, and AVE above the suggested threshold value. On the other hand, values more than 0.5 for AVE are values widely accepted. In our example, all indicators have loading more than 0.7. Meanwhile, all constructs achieved values more than 0.5 for the AVE.

The assessment of discriminative validity aims to ensure that the construct has the strongest relationships with its indicators compared to other constructs. Criticisms of the Fornell-Larker criterion in SmartPLS led to the innovation of the HTMT criterion. The innovation of the HTMT criterion removed the limitations of the Fornell-Larcker criterion, which has less ability than the HTMT criterion to examine the discriminatory validity. Henseler et al. [24] indicated that "The new HTMT criteria, which are based on a comparison of the heterotrait-heteromethod correlations and the monotrait-heteromethod correlations, identify a lack of discriminant validity effectively, as evidenced by their high sensitivity rates. The main difference between the HTMT criteria lies in their specificity. Of the three approaches, HTMT 0.85 is the most conservative

Table 4. Convergent validity

Construct	Item	Loading	AVE
COP	COP1	0.849	0.770
	COP2	0.906	
	COP3	0.892	
	COP4	0.863	
COM	COM1	0.781	0.742
	COM2	0.899	
	COM3	0.783	
	COM4	0.876	
HRP	HRP1	0.881	0.743
	HRP2	0.871	
	HRP3	0.782	
	HRP4	0.813	
PA	PA1	0.856	0.717
	PA2	0.875	
	PA3	0.793	
	PA4	0.862	
PR	PR1	0.854	0.700
	PR2	0.798	
	PR3	0.888	
	PR4	0.802	
R&S	R&S1	0.835	0.725
	R&S2	0.842	
	R&S3	0.783	
	R&S4	0.846	
T&D	T&D1	0.926	0.706
	T&D2	0.885	
	T&D3	0.854	
	T&D4	0.794	
OP	OP1	0.883	0.581
	OP2	0.875	
	OP3	0.898	
	OP4	0.705	

Table 4. (*continued*)

Construct	Item	Loading	AVE
	OP5	0.824	
	OP6	0.744	
	OP7	0.795	
	OP8	0.735	
	OP9	0.742	
	OP10	0.747	

Note: COP: career opportunities, COM: compensation, HRP: human resource planning, PA: performance appraisal, PR: promotion, R&S: recruitment and selection, T&D: training and development, OP: organizational performance.

criterion, as it achieves the lowest specificity rates of all the simulation conditions. This means that HTMT 0.85 can point to discriminant validity problems in research situations in which HTMT 0.90 and HTMT inference indicate that discriminant validity has been established". Table 5 shows how discriminative validity based on HTMT criterion is reported in empirical studies. Generally, values less than 0.85 for the HTMT criterion are values widely accepted. In our example, all constructs achieved values ranging between 0.038 and 0.592 for discriminative validity based on the HTMT criterion.

Table 5. Discriminant validity

Construct	COP	COM	HRP	PA	PR	RS	TD	OP
COP								
COM	0.481							
HRP	0.177	0.067						
PA	0.415	0.330	0.121					
PR	0.569	0.313	0.055	0.351				
RS	0.138	0.048	0.592	0.130	0.049			
TD	0.247	0.131	0.056	0.038	0.191	0.085		
OP	0.074	0.138	0.283	0.092	0.183	0.361	0.056	

Note: COP: career opportunities, COM: compensation, HRP: human resource planning, PA: performance appraisal, PR: promotion, R&S: recruitment and selection, T&D: training and development, OP: organizational performance.

4   Structural Model Assessment (Inner Model)

The structural model assessment is the third step in software of SmartPLS. The structural model is denoted as the inner model. The structural model (inner model) handles the relation of unobserved with latent constructs. The structural model assessment aims to examine the predictive capabilities of model and the relationships between constructs. In order to assessment the structural model, the researchers should examine four main aspects namely coefficient of determination (R^2), cross-validated redundancy (Q^2), effect sizes (f^2), and path coefficients (hypotheses testing).

Table 6 shows how structural model assessment (R^2, Q^2, f^2, and path coefficients) is reported in empirical studies. Generally, values of 0.75, 0.50, and 0.25 are considered substantial, moderate, and weak for R^2. In our example, the organizational performance achieved a value of 0.626 (moderate) for R^2. Moreover, values more than zero are meaningful for Q^2. In our example, the organizational performance achieved a value of 0.315 (meaningful) for Q^2. Regarding effect sizes (f^2), values of 0.35, 0.15, and 0.02 are considered large, medium, and small for f^2. In our example, career opportunities achieved a value of 0.036 (small) for f^2, compensation achieved a value of 0.021 (small) for f^2, human resource planning achieved a value of 0.004 (no effect) for f^2, performance appraisal achieved a value of 0.003 (no effect) for f^2, promotion achieved a value of 0.035 (small) for f^2, recruitment and selection achieved a value of 0.002 (no effect) for f^2, and training and development achieved a value of 0.047 (small) for f^2.

In order to examine the path coefficients (hypotheses testing), the researchers should follow two steps. The first step is ensure that p-value of direct or indirect effects are less than 0.05. The second step is ensure that zero not cross the confidence interval values (lower level and upper level). Therefore, if any path coefficient (direct or indirect) achieves the above requirements, then that path or hypothesis is considered statistically supported and acceptable. In our example, hypothesis 1 has been supported, because p-value was less than 0.05 and zero didn't crossed the confidence interval values (lower level and upper level). While hypothesis 3 has been not supported, because p-value was more than 0.05 and zero crossed the confidence interval values (lower level and upper level).

Table 6. Structural model assessment

H	Path	Path	T-Value	P-Value	R^2	Q^2	f^2	CI		Decision
								LL	UL	
H1	COP → OP	0.210	2.719	0.003*	0.626	0.315	0.036	0.027	0.298	Supported
H2	COM → OP	0.144	3.156	0.001*	-	-	0.021	0.209	0.065	Supported
H3	HRP → OP	−0.128	1.441	0.075	-	-	0.004	−0.273	0.018	Not supported
H4	PA → OP	−0.056	0.759	0.224	-	-	0.003	−0.137	0.109	Not supported
H5	PR → OP	0.200	3.724	0.000**	-	-	0.035	0.285	0.112	Supported

(*continued*)

Table 6. (*continued*)

H	Path	Path	T-Value	P-Value	R^2	Q^2	f^2	CI		Decision
								LL	UL	
H6	R&S → OP	−0.040	0.553	0.290	-	-	0.002	−0.135	0.082	Not supported
H7	T&D → OP	0.418	4.535	0.000**	-	-	0.047	0.272	0.574	Supported

Note: COP: career opportunities, COM: compensation, HRP: human resource planning, PA: performance appraisal, PR: promotion, R&S: recruitment and selection, T&D: training and development, OP: organizational performance, CI: Confidence Interval, LL: lower level, UL: upper level.

Note: *: $p < 0.01$, **: $p < 0.001$.

Note: 5,000 bootstrap samples.

5   Conclusion and Future Directions

Despite the diversity of studies related to PLS-SEM (e.g., [1, 2, 4, 7, 11, 14, 18–20, 22]), there is no study showing how to deal with the results of PLS-SEM in empirical studies. Therefore, this study aims to explain how to deal with the results of PLS-SEM briefly in order to facilitate the procedure for researchers. This study presented a hypothetical example in order to clarify the tests systematically. The example consists of two variables are human resource management practices as the independent variable and organizational performance as the dependent variable.

The results of the analysis using the software of SmartPLS include three main steps namely initial description of the data, measurement model assessment (outer model), and structural model assessment (inner model). The initial description of the data is the first step in software of SmartPLS. The initial description of the data aims to give the researcher a detailed notion of how the respondents have responded to the indicators in the survey. SmartPLS provides values for each predefined indicator including missing, mean, median, minimum, maximum, standard deviation, excess kurtosis, and skewness. The measurement model assessment is the second step in software of SmartPLS. By measurement model assessment, we can ensure those survey items measure the fixtures they were designed to measure. Thus, ensuring that the survey instrument is valid and reliable. The researchers should examine three main aspects in orde to assessment the measurement model namely internal consistency reliability (CA and CR), convergent validity (FL and AVE), and discriminant validity based on HTMT criterion. The structural model assessment is the third step in software of SmartPLS. The structural model assessment aims to examine the predictive capabilities of model and the relationships between constructs. In order to assessment the structural model, the researchers should examine four main aspects namely coefficient of determination (R^2), cross-validated redundancy (Q^2), effect sizes (f^2), and path coefficients (hypotheses testing).

Despite the important results provided by this study, it has the following limitations. First, the study was limited to how to deal with the results of PLS-SEM in empirical studies, but it did not provide details on how to use the software of SmartPLS. As a result, future studies may provide a detailed explanation of how to use SmartPLS. Second, this study focused on the field of management, thus it is difficult to generalize the results to

other fields. As a result, future studies may address the above limitation by explaining how to deal with the results of PLS-SEM in empirical studies in other fields such as curricula & teaching, linguistics, and special education.

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Assessing the Factors that Determine Renewable Electricity Consumption in the United States: An Economic Overview

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Abstract. This study specifies the main indicators that alter renewable electricity consumption in the United States. Annual data are utilized for four groups of consumers of renewable electricity—residential, commercial, transportation, and industrial. This paper adds to the existed literature by exploring the impact of oil prices, GDP per capita, government policies, and financial development on the renewable energy consumption. Findings will be illustrated as we improve the empirical part.

Keywords: Energy tax policy (tax credit) · Oil price · GDP per capita · Renewable electricity consumers

1 Introduction

Two streams of literature cover the demand side of renewable energy: global sample case and comparative status between countries. This part will be improved further as we will add most recent literature. Currently, most of the literature attempts to identify the determinants of renewable energy consumption- total consumption; however, this study utilized a unique annual data for four groups of consumers of renewable electricity—residential, commercial, transportation, and industrial.

Dulal et al. (2013) discuss population growth in Asia vis-à-vis the consumption of fossil fuels and renewable energy to determine the barriers to renewable energy diffusion. In Asian countries, these barriers take the form of financial constraints, lack of renewable energy use in technology and institutions, social and cultural choices, and governmental policy. Dulal et al. (2013) report that governmental intervention is crucial if countries are to transition to renewable energy use.

An analysis of data from South Korea suggests that the renewable energy portfolio influences the diffusion of such energy in the country more significantly than in other East Asian countries (Chul and Sung Yoon, 2017).

We could summarize that CO_2 emission and population growth affect renewable energy consumption in the global sample case, while economic growth and financial development affect the consumption of renewable energy in a specific country case.

These studies have employed different dynamic models, such as the generalized method of moments, dynamic ordinary least squares, and Bayesian model averaging, to examine their hypotheses.

Overall, these previous studies overlook the important factor of the energy tax credit and ignore the different types of renewable energy consumers in the U.S. and the elasticity of the related energy prices. Therefore, they fail to identify the impact of government policy (i.e., via the tax credit), as well as the relative energy prices on the renewable electricity consumption by the main four consumption sectors. The current study addresses this potentially critical factor in the U.S., where policymakers in the Department of Energy and federal government as well as scholars analyze such energy-related papers to make consistent policy suggestions for renewable energy development. Moreover, it adds to the literature by providing a better empirical model that considers to measure their impacts on renewable electricity consumption. The present study thus bridges the gap in the literature by discussing the factors that determine renewable electricity consumption and the impact of certain policies on the renewable energy development.

The other stream of the literature focuses on the comparative status between countries. For example, Harry, Shuddhasattwa, and Ruhul (2015) investigate the impacts of carbon emissions and real GDP on renewable energy generation in China and India. Additionally, their study focuses on the causal relationship between CO_2 emissions and the adoption of renewable energy directly and indirectly through economic growth. They find that in the long term, increased emissions lead to a greater adoption of renewable energy in China but not in India. However, they fail to find any relationship between economic growth and renewable energy adoption.

Overall, these previous studies overlook the important factor of the energy tax credit and ignore the different types of renewable energy consumers in the U.S. and the elasticity of the related energy prices. Therefore, they fail to identify the impact of government policy (i.e., via the tax credit), as well as the relative energy prices on the renewable electricity consumption by the main four consumption sectors. The current study addresses this potentially critical factor in the U.S., where policymakers in the Department of Energy and federal government as well as scholars analyze such energy-related papers to make consistent policy suggestions for renewable energy development. Moreover, it adds to the literature by providing a better empirical model that considers different energy prices, as well as elasticity to measure their impacts on renewable electricity consumption. The present study thus bridges the gap in the literature by discussing the factors that determine renewable electricity consumption and the impact of certain policies on the renewable energy development. Other important factors, such as CO_2 emission and gross domestic product (GDP), are considered.

2   Data and Methodology

Will be improved as we investigate more.

3   Conclusion and Implications

This research highlights impact of different factors on the renewable energy consumption in the USA. Most recent literature will be reviewed and sited as we improve this study.

Furthermore, a better empirical model will be considered, and we will detail the statistical finding and write the economic impact interpolation.

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Relationship Between Online Networking Behavior and Online Social Capital in Two Different Social Networking Sites

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Abstract. The aim of this study is to compare the online networking behavior and online social capital in two different networking platforms. Based on the data received through an online survey, the users of the two platforms were compared on demographic and behavioral factors. Applying statistical analyses, the results indicate that the two sample differ significantly on age while there was no significant difference on other factors. The intensity of SNS usage showed that the two samples differed significantly. One type of online social capital–online-bonding social capital - differed significantly in the two samples, while the second type namely–online-bridging social capital–were not different. The study contributes to the scarce literature dealing with a comparison of two social networking sites. Further, it should be of interest to policy makers in higher education, commercial organizations and the networking sites.

Keywords: Social networking sites · Online social capital · SNS intensity

1 Introduction

The innate need of mankind is to socialize and communicate. This human need found a boost by the rapid evolution of internet-based communication technologies. A result of this was the growth of the modern networking tools offered by the *"social networking sites (SNS)"*. SNS users increased manifold in the recent times exceeding 4.62 billion users as on January 2022 [1]. In general, these SNS provide individuals across the world to; "acquire new friends/ties, maintain existing contacts, and find old friends/ties" [2, 3]. A proven benefit of the SNS use is the formation of "online social capital" that provides both tangible and intangible resources to the network members [4, 5]. The SNS research in the past has overwhelmingly focused on Facebook [6–8], while fewer studies considering other SNS or comparing different SNS [9]. The present study aims to address this gap by comparing two SNS with completely different positionings. The rest of the paper is structured as follows. Literature review is discussed in Sect. 2, research methodology in Sect. 3 and the results are presented in Sect. 4. Finally, conclusion, limitations and future directions are discussed in Sect. 5.

2 Theoretical Background

2.1 Online Networking and Social Capital

The theory of social capital traces its origin to the work of Hanifan [10] later developed by other researchers [11–14]. It is reported that social capital is formed of, "both tangible/intangible and actual/virtual resources derived from network" [8]. One of the most popular developments in the social capital theory was the dichotomy of social capital given by Robert D Putnam [15]. According to Putnam, the social capital may be classified into bonding and bridging social capital. While the bonding social capital involves more "inward looking and intense relationships", the bridging social capital are result of "more outward looking and less intense relationships" [16, 17]. SNS offer tools and features that result in enhanced networking capabilities of the users. These are in fact augmentation over off-line networking. Like the offline-networks, the SNS also form social capital [9, 18], more specifically known as "digital social capital" [19], "social media capital" (Saxton), or "online social capital" [3].

2.2 SNS Usage

SNS usage includes the experience with the SNS, number of connections and the daily use of the SNS. Studies show that the usage patterns affect the strength of online social capital [20, 21]. This research aims to compare the usage behavior of the two group of SNS users on factors namely experience with SNS, number of connections [22, 23] and daily time spent on SNS [3].

The hypotheses thus framed are:

H1 There is a significant difference between LinkedIn and Facebook users on the factor experience with SNS.
H2 There is a significant difference between LinkedIn and Facebook users on the factor number of connections.
H3 There is a significant difference between LinkedIn and Facebook users on the factor daily usage of SNS.

2.3 Intensity of SNS Use

The affinity of a user towards the SNS is an important determinant of the user's behavior and has been found to be affecting online social capital [3]. This variable was first measured by Ellison [24] on a sample of Facebook users. This scale was called "Facebook Intensity Scale". The scale has been adapted in different contexts for measuring SNS intensity [20]. It is understandable that SNS have different target segments and accordingly vary in their overall offerings. It may therefore be hypothesized that intensity differs in different SNS. The hypothesis related to this research proposition is stated below.

H4 There is a significant relationship between SNS Type and SNS Intensity.

2.4   Online Social Capital

Except a few contradictory studies, previous research has generally supported the for-
mation of social capital through SNS use [25, 26]. This research aims to explore if the
online social capital perceived by the users of LinkedIn and Facebook are different. The
hypotheses thus stated are.

H5 There is a significant relationship between SNS Type and online-bonding social
capital.
H6 There is a significant relationship between SNS Type and online-bridging social
capital.

3   Research Methodology

3.1   Sampling and Data Collection

The two different networking platforms considered for the study were LinkedIn and
Facebook. An online survey was created using Google Form and distributed to the users
through various social media. The link was further forwarded to other users in the second-
and third-degree connections of the author. In a way it followed a snowball sampling
method where the respondents help in selecting other respondents. Over a period of about
six months, 329 valid responses were collected. Data processing and analysis were done
in MS-Excel and SPSS Version 28.0 respectively.

3.2   Measures

The demographic variable considered in the study were number of years for which the
user is connected with the SNS, first degree connections and average number of hours
spent on the SNS. The intensity of SNS use was measured using Facebook Intensity
Scale [24], and the online social capital was measured with the "internet social capital
scale" Williams [27]. The reliability of these scales were measured and all of them were
found statistically reliable Cronbach's alpha > 0.7 (Table 1) [28].

Table 1. Reliability of SNS intensity, online-bonding and online-bridging social capital scales

Variable	N of items	Mean	Variance	Std. dev	Cronbach's alpha
SNS intensity	6	22.49	86.47	9.299	.880
Online-bonding social capital scale	10	35.25	141.94	11.914	.871
Online-bridging social capital scale	10	43.64	212.09	14.564	.953

4 Results

4.1 Demographic Profile of SNS Users

The demographic profile of the users included the age, gender, employment status, and education. There was a significant difference in the users' age of the two samples (F = 3.245, p = 0.040). Both samples showed an excess of male users over females but not significant difference between the two samples ($\chi 2$ = 3.399 p = 0.065). There was no significant difference in the educational level (F = 2.040, p = 0.132) or employment status (F = 2.040, p = 0.132) of the users. It was also found that employed users formed the highest group (N = 252) with majority having bachelor or masters degree (N = 262). A possible explanation of these results may be the sampling technique that involved author's first- and second-degree connections.

4.2 SNS Membership

The percentage of total sample using different SNS is presented in Fig. 1. Of the total sample of 329 SNS users, the majority use YouTube (25%), followed by Instagram (21%), Twitter (20%) and Facebook (15%). When compared with a research conducted by Pew Internet Research Center [29] in USA, they found that Facebook is the most used followed by Pinterest, Instagram and LinkedIn. It was also reported that most of the SNS users access these sites with their mobile phones. Another important finding regarding the usage and subscription of SNS is that most of the users subscribe to more than one sites [30].
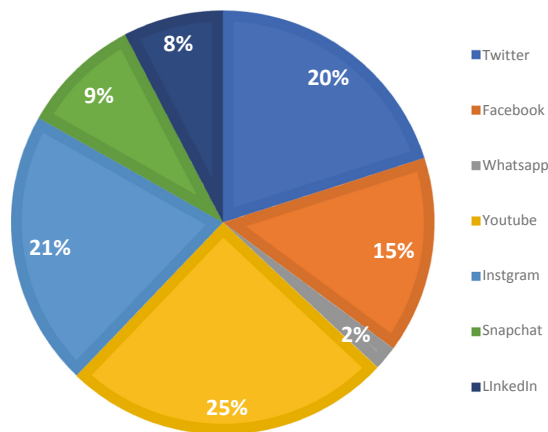
Fig. 1. SNS membership

4.3 Comparison of SNS Usage

The usage behavior included experience with the SNS (LinkedIn/Facebook), number of connections and daily usage (hours spent daily on that SNS). Based on these findings,

each hypothesis is discussed below. The results are presented in Table 2. No significant difference was found in the two samples on any of the studied factors.

Table 2. Comparison of SNS experience, number of connections and daily use of SNS

Comparison	Statistical test	Result	Result
SNS Type * SNS experience	Chi-square analysis	$\chi 2 = 0.084$ (1, p = 0.772)	Hypothesis rejected
SNS type * Number of connections	One-way ANOVA	F = 2.358 (p = 0.096)	Hypothesis rejected
SNS type * Daily usage	Chi-square analysis	$\chi 2 = 2.169$ (1, p = 0.141)	Hypothesis rejected

4.4   Relationship Between SNS Type and SNS Intensity and Online Social Capital

An independent sample t-test was conducted to test if the type of SNS affect the users' SNS intensity, perceived online bonding and bridging social capital. The results are summarized in Table 3. Significant difference (p = 0.01) was found in the two samples namely LinkedIn (M = 4.03; SD = 1.39) and Facebook (M = 3.48; SD = 1.65), thereby implying that there exists a relationship between the type of SNS and SNS intensity. A significant relationship was also found to exist between SNS type and perceived online bonding social capital (p = 0.02) in the two samples namely LinkedIn (M = 3.68; SD = 1.12) and Facebook (M = 3.38; SD = 1.25).

Table 3. Relationship of SNS type with SNS intensity, online bonding and online bridging social capital

Independent variables	Levene's test for equality of variances		t-test for equality of means			Results
	F	Sig.	T	df	p	
SNS intensity	12.46	<.001	3.245	327	.001	Hypothes is accepted
Online bonding social capital	2.472	.117	2.340	327	.020	Hypothes is accepted
Online bridging social capital	.002	.965	−.425	327	.671	Hypothes is rejected

5   Conclusion and Discussions

The main aim of the study was to provide a comparative analysis of the SNS users of two contrasting networking platforms, namely LinkedIn and Facebook. An analysis of the

demographic profile of the two samples show that the age group differed significantly in the two samples (F = 3.245, p = 0.040). The rest of the demographic variables namely gender, educational level or employment status did not differ significantly in the two samples. An important finding of this study was that almost all the users are subscribed to more than one networking site. The statistical tests employed to analyze the differences in two samples showed that no significant differences exist on the three usage factors considered. On the factor SNS intensity, it was found that there is a significant difference in the usage intensity (p = 0.01), with LinkedIn users reporting more affinity towards the SNS. The comparison of perceived online social capital showed that LinkedIn users' perception of online bonding social capital significantly more than the Facebook users (p = 0.02). On the other hand, there was no significant difference on the perceived bridging social capital. Still, the LinkedIn users reported a higher level of this capital.

This study holds the distinction of being one of the few comparative researches done in this area. Considering LinkedIn for comparing with Facebook adds immense value to the SNS research, as both of them are positioned and perceived very differently. A comparison of the two SNS reveal the similarities and differences existing among their users on demographic as well as behavioral factors. The manifestation of SNS use on online social capital is well established in literature. This paper therefore contributes significantly by comparing the perceived online social capital among LinkedIn and Facebook users. It also validates earlier studies that established the relationship between usage intensity and online social capital. The results should be beneficial in adding a new strand to the extant research. Further, the advertisers would also gain insights on the profile of the SNS users, that would help them target more effectively.

Limitations and Future Directions.

While the research has complied with all the scientific standards, the results should be interpreted carefully because of the inherent limitations. First, the use of self-reporting scale for collecting the responses have chances of bias. Secondly, the sample for the study were taken from the first- and second-degree connections of the author. The results based on this sample may be limited in generalizability.

The findings of this study show that there is a significant relationship between the SNS intensity, online bonding and online bridging social capital. This has mainly considered one dimension, that is the role of SNS type on these relationships. A confirmatory study should prove if the online social capital formation uniformly across the various types of SNS or differently. Further, the relationship among the behavioral variables and online social capital also need to be tested further across the SNS.

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Enhancing Graduates' Opportunities to Access the Digital Labor Market by Improving the Quality of e-learning

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Abstract. The objective of this study was to figure out how to enhance graduates' access to the digital labor market by improving the quality of their e-learning. To collect primary data, an empirical study was conducted using 348 questionnaires from Gaza universities' students (148 from university graduates, and 200 from fresh graduates). The study's findings indicate that the teacher's competency was with a relative weight of (67.77%), followed by the graduate's skill with a relative weight (60.34%), then the curriculum elements with a relative weight (58.24%), and lastly the educational environment with a relative weight (56.62%).

Keywords: E-learning · Graduates · Labor market · Educational environment · Curriculum · Palestine

1 Introduction

The COVID-19 pandemic, which has already infected over 128 million individuals worldwide and killed over 2 million people, has the potential to infect a significant fraction of the global population. The crisis has already shown itself as an economic and labor market shock, affecting both supply (goods and services production) and demand (consumption and investment) [1].

The beleaguered Gaza Strip is experiencing economic collapse and existential challenges across the board. After nearly 14 years of Israel's ongoing and brutal siege of Gaza, these crises have accumulated, deepened, and widened. More than 2 million Palestinians dwell in an area the size of a different planet with a population density of 6,777 people per square kilometer, making it the world's most densely populated place [1]. According to the Palestinian Central Bureau of Statistics and official Palestinian authorities [1], the poverty rate in Palestine has reached 75%, the highest in the world, while unemployment rates among young people have reached 68% (20–29 years).

When the first cases in the State of Palestine were confirmed on March 5th, 2020, the Palestinian Authority proclaimed a state of emergency and put in place strong national containment measures to stop the COVID-19 pandemic from spreading [2]. To prevent

the development of COVID 19 infections, the Palestinian Authority has prolonged this state of emergency until June 5, 2020. With the exception of the pharmaceutical, food, and detergent sectors, the limitations imposed went beyond the closure of economic facilities and educational institutions and included the implementation of curfews in some places [2]. As a result, the most vital local economy sectors, such as transportation, education, and health, have been severely impacted by these actions. While the Palestinian Authority's measures were effective in restricting the spread of the virus, they appear to have disrupted economic activity, with the GDP forecast to decrease by 2.5% in 2020 [3].

The COVID 19 pandemic has had a direct impact on economic activity in a variety of industries during 2020, adversely impacting a number of economic metrics. Employment is down, GDP is down, and government revenues are down. Among the sectors most impacted by the spread of the COVID 19 are educational institutions, restaurant and hotel operations, construction, and agriculture [4]. Therefore, the objective of this research is to enhance graduates' opportunities to access the digital labor market by improving the quality of e-learning.

2   Theoretical Framework

2.1   Education and Labor Market

Universities and other higher education institutions are the pinnacle of the educational pyramid, as well as one of the most significant pillars in the overall growth process. This is due to these institutions' leadership position and contribution to society's development and advancement. The major goal of higher education institutions is to help students change their behavior in all cognitive, skill, and emotional elements [5, 6]. As a result, all countries throughout the world are focusing on higher education outputs as a primary aim that educational institutions strive to attain in accordance with the goals for which they were founded and the labor market sector's needs. It provides education a new dimension as a worldwide trend within comprehensive quality standards, assuring education quality and ongoing progress. The capacity of traits and qualities connected to the educational product to fulfill the requirements of students, labor markets, society, and other internal and external parties benefiting from education determines the value and quality of higher education. Based on the above, development cannot occur without preparing students who are viewed as development tools, insofar as they possess health, vitality, ability, innovation, creativity, professional and technical skills, and a sense of responsibility, and the community possesses the capacity for selfgrowth and development [5].

The academic element is insufficient, given the restricted degree of talents and skills that the graduate receives through academic learning, and does not fulfill the labor market criteria, according to the observer of changing labor market requirements. As a result, it has become critical for the institution to improve students' abilities in accordance with labor market need and development. Different new abilities, such as information technology, communication, foreign language, and leadership, should be acquired by the student [6].

2.2   Unemployment and Digital Labor Market

Because of Israel's occupation policies in the Palestinian territories, unemployment is one of the most serious and deadly challenges confronting the Palestinian society [7]. It is a worldwide issue, since it affects most countries to differing degrees, therefore employment remains a goal and a need for all governments. Countries are putting out effort in terms of research and analysis to determine the causes and variables that contribute to unemployment in order to discover and create the best treatment options [8]. Accordingly, the researchers addressed several items during this study in order to contribute to enhancing graduates' opportunities to access the digital labor market by improving the system and quality of e-learning, which were represented in the industrial revolution, e-learning, and digital work. Therefore, the following subjects were examined: identifying the extent to which the concept of sustainability learning in Palestinian universities as an entry to enhance graduates' access to the labor market, contributing to improving graduates' opportunities in the digital labor market, and determining the extent to which the concept of sustainability learning in Palestinian universities as an entry to enhance graduates' access to the labor market.

2.3   COVID 19 and Educational Systems

The COVID-19 pandemic, which has already infected over 128 million individuals worldwide and killed over 2 million people, has the potential to infect a significant fraction of the global population. The pandemic has already morphed into an economic and labor market shock, affecting both supply and demand. However, since the declaration of a state of emergency in Palestine on March 5, 2020, the Gaza Strip has been hit by crises that have wreaked havoc on the local economy, particularly in the areas of transportation, trade, industry, education, health, agriculture, technology, construction, and services [9].

It was discovered that the education sector attempted to address the existing problem by adopting an e-learning strategy. Only 88% of courses could be converted to an e-learning format, and only 87% of students enrolled in these classes were able to participate in the e-learning process [9]. Higher education institutions are having a difficult time meeting their financial obligations, particularly wages [9]. There are two main problems in the educational sector, based on multiple readings and reports about the economic conditions in Palestine and the reality of graduates [9]. The first is related to the nature of universities' educational skills and lessons for students, and the second is related to the property of these skills with the labor market. As a result, the researchers posed the following question: How might improving the quality of e-learning improve graduates' possibilities to reach the digital labor market? Four primary components relevant to the study's subject emerged from this question: graduate skill, instructor competence, curriculum, and educational environment.

Statistics that indicate the difference between educational production and labor market demand might help to clarify the study topic [10]. The Palestinian universities and colleges in the Gaza Strip graduate about 45,000 students each year, with only 18% of them working, leaving the rest unemployed. As a result, the unemployment rate among young graduates (15–29) years was 55.8% in 2017 (37.8% for males and 72.2% for

females), compared to 41.5% in 2007. (31.7% for males and 52.5% for females). The highest unemployment rate was reported in 2017, at 69.6% (47.5% for males and 76.2% for females), while the lowest unemployment rate was recorded in 2017, at 25.7% for law graduates (25.5% for males and 26% for females) [10].

The 2019–2020 COVID 19 pandemic, on the other hand, has wreaked havoc on educational systems throughout the world, resulting in the near-complete shutdown of schools, universities, and institutions. As of the end of April 2020, over 1.725 billion students had been impacted by educational institution closures throughout the world as a result of the pandemic [10]. According to UNESCO [9], 192 nations have imposed countrywide closures and five have instituted local closures, affecting more than 90% of the world's student population. Closures of schools and universities impacted not only students, instructors, and families, but also had far-reaching economic and cultural ramifications. It has illuminated a variety of social and economic challenges.

In Palestine, the COVID-19 pandemic has wreaked havoc on educational systems, resulting in the near-complete shutdown of schools, universities, and institutions. All educational institutions in the Gaza Strip, including Higher Education Institutions "HEIs" (Universities, University Colleges and Colleges), schools (UNRWA schools, governmental schools and private schools), pre-school institutions (kindergartens and nurseries), and supportive education centers, have committed to the announcement [11]. Furthermore, due to income compression and the difficult economic circumstances in Gaza, students, scholars, and academic staff have faced a major financial crisis during the previous three years. More than half of Palestinian higher education students are unable to pay their fees, and more than a third of those students have dropped out of their universities or colleges because they are unable to pay the minimum needed tuition costs. Prior to the COVID-19 Pandemic, HEIs were unable to fund operating expenditures, including staff wages, on a consistent way. The personnel got roughly 40% of their pay in the majority of cases [11].

Because of several concerns and implications related to the cumulative economic challenges they were facing before to the COVID-19 Pandemic, the educational sector, particularly HEIs, is one of the most affected sectors as a result of this crisis. Because the commitments to employees and others are expanding, these problematic situations are projected to persist even after the present state of emergency ends [12]. Some efforts are taken by HEIs to reduce their problem, such as [12];

- Cancelling 25% of limitless contracts;
- Paying reduced salary percentages;
- Closing various programs
- Keeping running costs to a bare minimum

On the other hand, tuition fees for some training programs and professional courses have been reduced; additionally, 50% of programs have been transferred to etraining, and 50% of these programs have been discontinued due to crises and the difficulty of presenting face-to-face meeting courses to large groups [12].

During this stage, many obstacles arise, such as: (1) the required infrastructure for e-learning is insufficient in some institutions and does not exist at all in others; (2) the lack of access to technology, such as reliable internet access, which prevents vulnerable students

from participating in the e-learning process; (3) Traditional curricular transformation to e-learning materials needs more experience; (4) the teaching staff's knowledge of how to adapt to new e-learning tools and techniques must be improved; (5) TVET (Technical and Vocational Education and Training) education cannot be addressed by present e-learning facilities because it requires AR (Augmented Reality) and VR (Virtual Reality) settings; (6) evaluation and assessment tools are still in their infancy; and (7) remote working for some administrative employees did not provide the anticipated outcomes.

3   Methodology

The descriptive technique was used to assess the current situation and respond to the key problems connected with increasing the quality of e-learning in order to improve graduates' prospects to reach the digital labor market. As a consequence, the survey was extensively distributed via face-to-face communication. To meet with local language limits, the original questionnaire was correctly translated into Arabic. After that, it was sent to two fluent Arabic speakers to examine and pilot test it for correctness. IBM SPSS software version 22 was used for statistical analysis. Three hundred and fortyeight students from Gaza universities completed and submitted the survey (148 from university graduates, and 200 from fresh graduates).

4   Results and Discussion

The following is a summary of the study's major results and discussion about the appropriateness and availability of educational process aspects, as well as the degree to which they effect graduates' capacity to enter the digital labor market via the e-learning system.

4.1   Results Related to Graduate's Skill

Table (1) shows that the most important element in this category was "the graduate's economic and social position" which was placed first with a relative weight of (68.38%). This is due to the Gaza Strip's terrible economic status as a result of the siege. This is consistent with the literature, since HEIs were unable to meet operating expenditures, including staff wages, on a regular basis prior to the COVID-19 pandemic. The personnel got roughly 40% of their pay in the majority of cases [11].

4.2   Results Related to Teachers' Competence

Table (2) shows that the most important feature in this sector was "Teacher's capacity to deal with digital learning," which was placed first with a relative weight of 1. (70.81%). According to the study, instructors at the Palestinian institutions are capable of dealing with digital education since their curriculum is based on applied and technological components. Universities and other institutions of higher education, according to literature, are at the summit of the educational pyramid and one of the most significant pillars in the development process in its broadest meaning. This is due to these institutions' leading

Table 1. Frequencies, averages, standard deviations, and the relative weight related to graduate's skill.

Factor	Student			Graduate			AVG			Rank
	MV	SD	RW	MV	SD	RW	MV	SD	RW	
The graduate's skill is sufficient to access digital job market	3.2	0.911	64	2.833	1.000	56.67	2.932	0.987	58.65	5
Academic and professional capabilities of the graduate	3.075	0.944	61.5	2.889	1.008	57.78	2.939	0.991	58.78	4
Cultural awareness of the graduate	3.475	0.751	69.5	3.315	0.963	66.3	3.358	0.911	67.16	2
Economic and social status of the graduate	3.4	0.9	68	3.426	0.878	68.52	3.419	0.881	68.38	1
Training courses	2.750	1.080	55	2.38	0.862	47.59	2.48	0.937	49.59	6
Motivation and self-learning of graduate	3.3	1.091	66	2.852	1.109	57.04	2.973	1.118	59.46	3
Overall score for the field	**3.2**	**0.694**	**64**	**2.949**	**0.690**	**58.98**	**3.017**	**0698**	**60.34**	

Note: MV = Mean Value; SD = Standard Deviation; RW = Relative Weight.

roles and contributions to the development and advancement of society. The major goal of higher education institutions is to help students change their behavior in all cognitive, skill, and emotional elements, which is referred to as the correct notion of learning [5, 6].

4.3   Results Related to Curriculum Component

Table (3) shows that the most important criterion in this category was "Suitability of educational curriculum to requirements of digital market," which was placed first with a relative weight of (65.27%). According to the analysis, the educational curriculum meets the demands and standards of the digital labor market. This conclusion is backed by the fact that the 2019–2020 COVID 19 pandemic has wreaked havoc on educational systems throughout the world, resulting in the near-complete shutdown of schools, universities, and institutions. As of the end of April 2020, over 1.725 billion students had been impacted by educational institution closures throughout the world as a result of the pandemic [9].

4.4   Results Related to Educational Environment

The greatest factor in this sector, as shown in Table (4), was "Systems and programs that facilitate e-learning," which was placed first with a relative weight of 0. (60.27%). This

Table 2. Frequencies, averages, standard deviations, and the relative weight related to the teachers' competence.

Factor	Student			Graduate			AVG			Rank
	MV	SD	RW	MV	SD	RW	MV	SD	RW	
Science scientific for the teacher	3.600	0.982	72.00	3.269	1.116	65.37	3.358	1.088	67.16	3
Instructor skill and experience	3.650	0.893	73.00	3.407	0.843	68.15	3.473	0.861	69.46	2
Teacher's ability to deal with digital learning	3.550	0.932	71.00	3.537	0.880	70.74	3.541	0.891	70.81	1
Technical efficiency and experience of the instructor	3.300	1.244	66.00	3.139	0.891	62.78	3.182	0.997	63.65	4
Overall score for the field	**3.525**	**0.802**	**70.50**	**3.338**	**0.722**	**66.76**	**3.389**	**0.746**	**67.77**	

Note: MV = Mean Value; SD = Standard Deviation; RW = Relative Weight.

Table 3. Frequencies, averages, standard deviations, and the relative weight related to the curriculum.

Factor	Student			Graduate			AVG			Rank
	MV	SD	RW	MV	SD	RW	MV	SD	RW	
Suitability of educational curriculum to requirements of digital market	3.375	1.079	67.50	3.222	0.857	64.44	3.264	0.921	65.27	1
Keeping curriculum up-todate with the latest trends in the labor market	2.900	0.928	58.00	2.620	1.048	52.41	2.696	1.021	53.92	3
Continuous development of courses	3.050	1.037	61.00	2.676	1.066	53.52	2.777	1.068	55.54	2
Overall score for the field	**3.108**	**0.910**	**62.17**	**2.840**	**0.833**	**56.79**	**2.912**	**0.860**	**58.24**	

Note: MV = Mean Value; SD = Standard Deviation; RW = Relative Weight.

could be attributed to the presence of e-learning tools and methods, which were recently utilized in the case of the COVID 19 pandemic. As a result, development and support programs cannot take place without preparing students who are viewed as development tools, in the same way that they possess health, vitality, ability, innovation, creativity, professional and technical skills, and a sense of responsibility, and the community has the capacity for self-growth and development [7, 8].

Table 4. Frequencies, averages, standard deviations, and the relative weight related to educational environment.

Factor	Student			Graduate			AVG			Rank
	MV	SD	RW	MV	SD	RW	MV	SD	RW	
Availability of computer labs and adequate internet networks	3.325	0.917	66.50	2.833	1.037	56.67	2.966	1.026	59.32	3
Systems and programs that support e-learning	3.200	1.137	64.00	2.944	1.191	58.89	3.014	1.178	60.27	1
Availability of computer for each student	3.225	1.121	64.50	2.907	1.107	58.15	2.993	1.116	59.86	2
Continuous development of educational environment	2.650	1.272	53.00	2.241	1.159	44.81	2.351	1.200	47.03	4
Overall score for the field	**3.100**	**0.911**	**62.00**	**2.731**	**0.893**	**54.63**	**2.831**	**0.910**	**56.62**	

Note: MV = Mean Value; SD = Standard Deviation; RW = Relative Weight.

5   Conclusion

The study's purpose was to figure out how to improve graduates' chances of getting jobs in the digital economy by improving the quality of their e-learning in four areas: graduate's skill, teacher competency, curriculum, and learning environment. It is recognized that improving graduate skills and developing the educational environment through a variety of activities and approaches will help to improve the quality of elearning, which will contribute to the development and improvement of graduates' opportunities within the e-learning and digital work system. Furthermore, the results show that there are several important criteria to facilitate graduates' opportunities within the e-learning and

digital work systems, such as the graduate's economic and social status, the teacher's ability to deal with digital learning, applied and technical aspects of education, and the suitability of educational curriculum to digital market requirements.

6 Recommendations

The researchers recommend a number of actions to improve graduates' access to the digital labor market, including:

- Developing the educational environment by hosting workshops with institutions, stakeholders, and instructors.
- Building an e-learning system's infrastructure (internet networks and classrooms).
- The involvement of authorities in the e-learning system's assistance.
- Holding training courses in an e-learning system to improve graduate abilities.
- Universities and NGOs (Non-Governmental Organizations) should offer capacity-building programs for students and graduates in order to encourage them to learn digital skills.
- Workshops with IT (information technology) professionals are essential for getting guidance and hands-on experience with e-learning applications.
- Providing the required equipment, materials, and procedures in various institutions to make the e-learning system easier to implement.
- To alter, improve, and get the intended benefit from the e-learning system, the Ministry of Education should undertake more awareness and training workshops aimed at instructors and students.

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Influence of Covid-19 Pandemic on Grocery Shopper Behavior in Relation to 4Ps of Marketing: An Empirical Study

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Abstract. The Covid-19 pandemic signifies one of the most significant environmental changes in recent marketing history. Due to the impact of the COVID-19 pandemic, it is noticed that the grocery shoppers' behaviour has affected their purchasing habits during this crisis. As 4P's of marketing (product, price, place, and promotion) has the base of the success of any business. Hence, the study's main objective was to explore the impact of consumer preferences and attitudes on grocery shopping behavior with special reference to the elements of the 4 Ps of Marketing in Saudi Arabia. To achieve this goal descriptive research approach has been applied. The data has been collected electronically using convenience sampling with structured questionnaires from the people living in Saudi Arabia. Around 225 surveys responses have been taken for the study. SPSS-Version 2020 statistical software has been used, and descriptive statistics with Chi-square test at 0.05 significance level were utilized for the analysis and results were interpreted accordingly. The research revealed differences in opinion gender-wise, and opinion varies with some of the marketing elements on grocery shopping.

Keywords: Consumer behavior · COVID-19 pandemic · Marketing · Grocery shopping · Saudi Arabia

1 Introduction

The Covid-19 pandemic signifies one of the most significant environmental changes in recent marketing history, affecting 4P's, product, price, place, and promotion [1]. The most optimistic view is that the Covid19 pandemic will accelerate the evolution of the 4P after the long-term pandemic, as more and more companies and organizations realize that their survival and development in the long term depend on finding a delicate balance between profitability and harmony with the various stakeholders [2, 3]. The widespread and profound disruptions of the Covid-19 pandemic have affected the marketing system in many ways [4]. Marketing is based on situation and marketing ideology, as we seek to identify and meet the demands and desires of target markets better than competitors. More informed and progressive commentators and organizations have embraced variations of social marketing [5].

The global Covid-19 pandemic has led to shifts in advertising, marketing, promotional and media spending, forcing companies and brands to reassess their thinking on current and future advertising and marketing campaigns to maintain a stable revenue stream [6]. As brands struggle to strike the right tone during the global health emergency, the future is bright for market shifts, increased competition, and demand creative and effective marketing practices [7]. Many marketing and advertising departments will be challenged to think of creative and innovative marketing strategies and approaches to get businesses through this new normal. Marketers try to address operational choices and strategic planning challenges in an environment of uncertainty. In addition, It analyzes brand reputation issues that identify potential new products and services needed to meet consumer needs and expectations, focusing on creative and strategic marketing campaigns, targeted advertising, and effective use of social media [8, 9]. Many studies have been done, but few of them have covered consumer behavior for grocery products towards 4Ps of marketing during the Covid-19 pandemic in Saudi Arabia.

1.1 Research Gap

Therefore, understanding the impact of marketing mix variables on Saudi consumers' purchase of grocery products is critical to companies operating in this sector. Keeping this in mind, the study explores consumers' preferences and attitudes towards convenient shopping elements of the four Ps such as price, product, place, and promotion during this crisis Covid-19 pandemic, as they are the basis of all marketing success. Consequently, for this purpose, the following research questions have been considered.

1.2 Research Questions

1. What is consumer perception regarding purchasing grocery products during the covid 19 pandemic?
2. What is the consumer's attitude on pricing grocery products charged by marketers during the covid 19 pandemic?
3. What is the opinion of consumers regarding the SOPs of Covid-19 Safety maintained by the retailers during Covid-19?
4. What is the consumer perception regarding the Promotion/ information provided during the covid-19 pandemic?
5. Are there any differences in opinion with the 4Ps of marketing gender-wise?

1.3 Objectives of the Study

1. To determine consumer perception regarding purchasing grocery products during the covid 19 pandemic.
2. To the consumer's attitude on pricing grocery products charged by marketer during the covid 19 pandemic.
3. To examine consumers' attitudes regarding the SOPs of Covid-19 Safety provided by the retailers during Covid-19.
4. To identify the consumer perception regarding the promotion/ information provided during the Covid-19 pandemic.
5. To evaluate differences in opinion with 4Ps of marketing gender-wise.

1.4 Hypotheses

The following Hypotheses were taken:

H0 1: There is no substantial difference in consumer perception regarding purchasing grocery products during the covid 19 pandemic.
Ha 1: There is a significant difference in consumer perception regarding purchasing grocery products during the covid 19 pandemic.
Ho 2: There are no significant differences in consumer attitude on the pricing of grocery products charged by marketers during the covid 19 pandemic.
Ha 2: There is a significant difference in consumers' attitude on pricing grocery products charged by marketers during the covid 19 pandemic.
Ho 3: There are no significant differences in the attitude of consumers regarding the SOPs of Covid-19 Safety provided by the retailers during Covid-19.
Ha 3: There is a significant difference of opinion in the attitude of consumers regarding the SOPs of Covid19 Safety provided by the retailers during Covid-19.
Ho 4: There are no significant variations in the consumer perception regarding the Promotion/ information provided during the Covid-19 pandemic.
Ha 4: There is a significant difference of opinion in the consumer perception regarding the Promotion/ information provided during the Covid-19 pandemic.

1.5 Study Organization

The text of the article progresses by reviewing and evaluating the empirical evidence. A certain number of classifications for the study organization has been selected. A literature review has been conducted on these topics, such as consumer behaviour in the era of COVID, towards the marketing mix; product, price, place, promotion to know the current status of the study. Subsequently, the research methodology for the analysis was properly explored and discussed. The result and discussions related to the research have been covered, and then the conclusion of the article has been presented to benefit the concerned authorities from this study.

2 Literature Review

2.1 Consumer Behavior

Consumer behavior can be expressed as a process in which individuals or groups purchase tangible or immaterial products to suit their needs or preferences [10, 11]. In another definition, consumer behavior refers to a consumer's purchase of goods and services for personal consumption [12], and "a study of the processes that occur when individuals, groups, or experiences choose to satisfy needs and wants" [13] various factors such as population interests and sociocultural data, such as purchasing behavior determined by two main factors [10, 14, 15]. Providing the internal factors that determine the consumer behavior for different segments of customers [16].

Moreover, in any case, promotion, advertising, and the economic environment drive these actions to consumer confidence. At the same time, internal and external factors also

affect consumer behavior [10, 17]. According to the American Marketing Association, consumer behavior is the powerful influence of communication, the interaction of the behavioural environment in which humans conduct aspects of exchange in their lives [9, 18, 19]. Another study revealed that many organizations, COVID-19, have transformed the four elements of marketing: product, place, price, and promotion into four points: confusion, disaster, chaos, and complexity [20, 21].

2.2 Marketing Mix (4Ps of Marketing)

Marketing includes several activities for satisfying the customer and their target group of customers for those they serve [22]. Once the target group is identified, the product is placed in the market by providing the right product, price, distribution, and promotion efforts. They must be combined or mixed in appropriate proportions to achieve the marketing objective. This combination of products, prices, distribution, and promotional efforts is the 'marketing mix. According to Philip Kotler, "The marketing mix is a set of controllable variables that a firm can use to influence buyer response" [10].

2.3 Product

Product directs to the goods and benefits provided by the organization to the customer and consumers [23]. In simple terms, a product can be described as a set of advantages that the distributor offers to the consumer for a price [24]. A product may be classified as a consumer good and industrial goods based on usage. Consumer Goods are goods intended for personal consumption by households or final consumers [25]. Based on consumer purchasing behaviour, consumer goods may be classified as Convenience goods, purchases of merchandise, and niche products. Consumer Goods: Consumer goods are bought frequently without much effort in planning or purchasing and are also quickly consumed [26, 27]. In addition, previous studies in consumer psychology and behavioural economics found that many psychological factors influence consumer behaviour differently [9, 28, 29]. More specifically, panic buying has been defined as the herd behavior that occurs when consumers purchase many products in anticipation, during or after a disaster [30].

2.4 Price

The price is the amount paid for the purchase that fits an individual's value to obtain a commodity [31]. A report found that product features such as price and quality are more relevant to consumers than ecofriendly packaging [32]. In the Nielsen Global Survey, it was reported that 55% of online shoppers worldwide were keen to pay more for goods and service sectors from companies dedicated to a positive social and environmental impact on society [33]. As Boztepe [34] revealed in his study, he found a significant shift in the relationship between price and consumer purchasing behavior, with young consumers showing a willingness to pay for environmentally friendly products compared to previous studies [35]. Although price is sometimes of paramount importance, timing and spending are also crucial. Companies and brands need to ask themselves what price

adjustments, offers or purchasing changes can we introduce to make it easier for potential customers to buy what they need? [36]. According to a study by Nielsen, the spread of the COVID19 pandemic has significantly changed the world of spending levels related to consumer behavior [37]. High levels of stress usually result in consumers saving money and spending them strategically on products that are considered essential [37]. As noted in the study, the negative impact of Covid-19 on existing business is associated with a higher probability of price declines of up to eleven percentage points [38].

2.5 Place

Goods are produced for sale to consumers. It should be made available to consumers in a place where they can easily buy. The channel level is a layer of intermediaries that brings the product and its ownership closer to the final buyer [39]. In addition, the placement decision includes activities that make products available to target customers [40]. And it aims to provide the convenience of shopping sought by consumers in modern retail channels [41]. The other study reveals that consumers are increasingly afraid to travel in person to buy their food in the context of the pandemic [42, 43]. Buyers who transact with businesses and receive products and services are greatly affected during this pandemic [44].

2.6 Promotion

Promotion elements of marketing is a vital part of the marketing mix. It refers to informing, persuading, and influencing consumers to choose the purchased product. Promotion is done through personal selling, advertising, and sales promotion [40]. Promotion is a marketing activity used by retailers to drive traffic to stores and generate sales by communicating existing offerings to target consumers [44]. Specifically, promotion can increase sales by changing the offerings of other stores and by increasing consumption by existing consumers [45]. It is primarily designed to provide information to potential consumers about product availability, features, and uses. It arouses the interest of potential consumers in the development, compares it with the products of competitors and selects them [44, 45]. Research shows that marketers need to make clear changes in promotional spending. Moreover, The decline in print and electronic media has greatly aided the promotion process [46, 47].

3 Research Methodology

The paper studies the present impact of the Covid 19 pandemic on grocery products in Saudi Arabia. The research has utilized both primary and secondary data for analysis. The secondary data was collected from research reports, journals, magazines, newspapers etc. To study the current situation in Saudi's consumer preferences and attitudes concerning their purchasing behavior of convenience shopping during the pandemic. A convenience sampling method was adopted, and accordingly, primary data was collected by surveying people in close contact with the researchers [48]. A structured non-disguised questionnaire was prepared and then administered through a Google Form.

The link to this Google Form was shared with the people known to the researchers and was shared with around 300 respondents. Then the primary data was collected and analyzed through IBM SPSS Statistics Version- 2020. For result analysis, descriptive statistics have been used. To check hypothesis Chi Sq. test at significance P <0.05 and confidence at 95% level were selected. The differences in opinion concerning marketing mix and gender-wise were analyzed, and the result was interpreted accordingly.

4   Results and Discussion

4.1   Demographic Information

The majority of the respondent's age was within the middle-aged group of (25–30 years) followed by 18–25, 30 to 35 and older age respectively, 68.9% were women, and 31.1% were male members, 64% of the respondents were highly educated those having the bachelor or master and above degree holders followed by less than high school (28%) and having high school (804%) respectively. Moreover, the majority (67.06%) of the respondent's income was in the range of below 10,000 SR monthly payment followed by 30.4% fall in the categories of monthly income above 10,000–15,000 SR and more of the family.

4.2   Product

Table 1. Change in grocery product * gender

Crosstab			Gender		Total
			Male	Female	
Change in purchasing the grocery product during the Covid-19 pandemic	Yes	Count	26	79	105
		% within gender	37.10%	51.00%	46.70%
	No	Count	44	76	120
		% within gender	62.90%	49.00%	53.30%
Total		Count	70	155	225
		% within gender	100.00%	100.00%	100.00%
Pearson chi-square	Value: 3.703[a]	df: 1	Asymp sig. (2-sided): 0.054	Exact sig. (2-sided)	Exact sig. (1-sided)
N of valid cases	225				

a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 32.67.

The one objective of the survey was to know the change in purchasing of the grocery products during the COVID-19 pandemic; the result indicates that the majority of respondents acknowledged that there was no change in the product of their grocery during the Covid-19 pandemic period. 46% of the respondents stated that there had been changes in their purchasing of grocery items during the pandemic. Regarding the gender effect on the behaviour of grocery products during the COVID-19 pandemic in Saudi Arabia, ChiSquare tests reveal that there were insignificant differences in their opinion gender-wise (See Table 1). Hence, It can be determined that there was no impact on the variation of grocery consumption of households due to the covid 19 pandemic in Saudi Arabia. Another study shows that consumers' perceptions have changed their shopping behavior during the pandemic. Residents change their shopping behaviors by considering the shopping modes that allow them to deal with or avoid the risks [49]. Contrary to that, the current study in hand reveals that in Saudi Arabia, consumers have different opinions than previous studies and have positive feedback about their daily shopping needs during the pandemic.

4.3 Price

Table 2. Grocery product price charged reasonably by marketer * gender

Crosstab					
			Gender		Total
			Male	Female	
Grocery product price charged reasonably by the marketer	Disagree	Count	19	32	51
		% within gender	27.10%	20.60%	22.70%
	Neither agrees nor disagree	Count	31	70	101
		% within gender	44.30%	45.20%	44.90%
	Agree	Count	20	53	73
		% within gender	28.60%	34.20%	32.40%
Total		Count	70	155	225
		% within gender	100.00%	100.00%	100.00%
Pearson chi-square		Value: 1.376a	df: 2	Asymp. Sig. (2-sided): 0.503	

a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 15.87.

The price element has a central role in purchasing any products. When the questions asked from the respondents are grocery product price charged reasonably by the marketer, concerning this question, the majority of the respondent's answer was in neutral agreement followed by agreeing and disagree, respectively. The majority of the respondents claim that the retailers' prices during the covid 19-pandemic were reasonable, and there were no differences compared to the before Covid-19 time. A study reports a

considerable difference in prices during covid-19 and before the covid period as stated in a report that during the COVID-19 pandemic, costs for several consumer goods and services, as well as for some medicine and medicines products, have increased significantly [50]. Regarding the gender effect on the price of grocery products, it can be seen that there were no substantial variations in the opinion of respondents gender-wise. The calculated Chi-square is Sig. 0503 that higher the Sig P Vale <0.05 (Table-2). Therefore, It can be concluded that the retailer's price of grocery products had not been increased during the Covid-19 period. Consumers have a positive perception regarding the price and will positively impact grocery shopping in the region. Hence, the retailers should maintain such perception of consumers and try to keep more loyal by providing a strong customer relationship program and activities.

4.4 Place

Table 3. SOPs of Covid-19 Safety were maintained by the company * gender

Crosstab

			Gender		Total
			Male	Female	
SOPs of Covid-19 safety was maintained	Disagree	Count	19	32	51
		% within gender	27.10%	20.60%	22.70%
	Neither agrees nor disagree	Count	21	81	102
		% within gender	30.00%	52.30%	45.30%
	Agree	Count	30	42	72
		% within gender	42.90%	27.10%	32.00%
Total		Count	70	155	225
		% within gender	100.00%	100.00%	100.00%
Pearson chi-square		Value: 9.911[a]	df: 2	Asymp. sig. (2-sided) 0.007	
N of valid cases		225			

a. 0 cells (0.0%) have an expected count less than 5. The minimum expected count is 15.87.

According to respondents, in response to the query that the company-maintained SOPs of Covid-19 safety during the pandemic, its opinion was varied. The overall result shows that compared to the disagreement opinion, the majority responses went to the positive feedback regarding the SOPs of Covid-19 health safety actions adopted by the retailers of grocery products in KSA. It can be revealed that there are substantial differences in opinion gender-wise. Hence it can be concluded that there is a difference in the view towards the SOPs of Covid-19 Safety maintenance, and an alternative hypothesis

will be accepted (See Table 3). In the other report, it has been revealed that during the pandemic, residents change their shopping behaviors due to the fears of safety by considering the shopping modes that allow them to deal with or avoid the risks [49]. It is advised to the retailers of the products that they should try and fulfil the SOPs properly, and maintaining and applying those SOPs will significantly improve their sales performance [51]. It is also observed that small grocery shops owners did not manage SOPs of Covid- 19 safety procedures as the ministry of health guided it to the retailers. Therefore, it is wise action that following the guidelines of health safety by the retailers will lead to sustainable shopping behaviour, and it will covey a good message about the retailers among the consumers.

4.5 Promotion

Table 4. Best period to get informed about the grocery product * gender

Crosstab

			Gender		Total
			Male	Female	
The best period to get informed about the daily need's product	Before Covid19 (normal life)	Count	37	81	118
		% within gender	52.90%	52.30%	52.40%
	During covid19	Count	10	26	36
		% within gender	14.30%	16.80%	16.00%
	Both are same	Count	23	48	71
		% within gender	32.90%	31.00%	31.60%
Total		Count	70	155	225
		% within gender	100.00%	100.00%	100.00%
Pearson chi-square		Value: 0.244[a]		df: 2	Asymp. sig. (2-sided) 0.885
N of valid cases		225			

a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 11.20.

From Table 4, it is identified that the best period to get informed about the daily need's product has differences in the communication provided by the retailers. Most of the respondents claimed that the marketer best practised the information about grocery products before the Covid-19 period, followed by the opinion "Communication in both periods is same", and during covid 19-time responses were 16% respectively. Both genders claim that before the covid, the promotional communication was provided better

than in the pandemic era. The Chi-square test suggests that there are no significant differences in opinion among the gender-wise with the communication provided by the retailer for the grocery shoppers; hence the null hypothesis will be accepted at a 95% confidence level (See Table 4). The literature also suggests that the quality and quantity of information influences consumers, and information availability is very important to enhance consumption practices [52, 53]. Moreover, Hosta and Zabkar found that information availability positively influences consumer behaviour [28]. At the same time, the lack of knowledge can be an obstacle to this trend [54, 55].

5 Conclusion

Undoubtedly, the world will emerge unscathed from the COVID-19 crisis. The losses from this crisis are unlikely to come close to what the world has seen so far, given its ferocity and the short duration of its global spread. As it has affected life, this COVID-19 pandemic is also changing consumer habits by reducing sales of certain product categories and improving sales of others. The article examines the current impact of the COVID-19 pandemic on the grocery of products in Saudi Arabia: This study used primary and secondary data for analysis, and descriptive statistics have been applied. The majority of respondents were middle-aged, majority of the respondents were female, and educationally the respondents were well educated with a bachelor's or master's degree and above the popular of respondents' income had in the maximum limit of 10,000 riyals to the monthly revenue. Most respondents acknowledged that there had been no change in their grocery during the Covid-19 pandemic regarding the product information. Concerning the impact of gender on the behavior of daily necessities during the COVID-19 pan-demic in Saudi Arabia, Chi-Square tests reveal slight differences of opinion in terms of gender. Cheers to this, the people of the Kingdom have been able to manage their consumer needs as they were met before Covid-19. When the questions asked to the respondents are the grocery of the price of the product reasonably exercised by the marketer, concerning this question, the answer of the majority of the respondents was neutral. It is clear that the mass of respondents claim that the price charged by retailers during the Covid-19 pandemic was reasonable, and there was no difference from what it was before the time of Covid-19. The selling price of a daily consumer product has not been increased during the Covid-19 period. Hence, it could conclude that grocery products price in Saudi Arabia are highly regulated and have been established according to the normal situations even in the era of Covid19. In response to a question, the company maintained its operating procedures as per its Covid-19 safety standards during the pandemic-19. The study found differences in opinion between the genders. The majority of male respondents' views were on the support side compared to the respondent who either expressed "Disagreement or agreement" and was neutral in this regard. It has been revealed that the finest time to obtain information about grocery products has differences in the communication that the retailers provided. Most respondents said that marketers better-practised information about grocery products promotions/ information before the Covid-19 period.

Limitation of the Research
Although good effort has been made to put up for the study through the subsequent

factors have been inevitable absent as a result of their critical limiting factors for this study:

- Scarcity of time and cost
- This study could cover all the elements of grocery shopping as only a few elements of marketing have been selected.
- The sampling size was limited due to time and cost concerns.
- This study has been taken among the Saudi Arab residents during Covid 19 Pandemic era. Hence, it cannot be generalized in the different economic and sociodemographic environments.

Future Research

There is a certain limitation in our knowledge of this research. The current theory we have developed and discussed here need to be extended for further study. In-depth exploration and a bigger sample can be taken to generalise the result. In addition, in-depth research related to each marketing mix with a greater sample size would support and help stakeholders take the better decision of marketing in the current scenario.

Declaration of Competing Interest. The authors declare no conflict of interest.

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Artificial Intelligence in Logistics and Supply Chain Management: A Perspective on Research Trends and Challenges

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Abstract. Industry 4.0 technology is a new vision towards digital transformation of logistics, manufacturing, supply chain and related industries processes. It aims to increase automation and improve communication, self-monitoring, and develop a data-driven, fully connected supply chain ecosystem. In this context, Supply Chain Management (SCM) with the advantage of Artificial Intelligence (AI) technology have gain significant attention. It is considered one of the advanced solutions in improving the information quality, making better decisions, and solving practical problems related to SCM. Several research works have been conducted in this area; however, few studies have examined the research trends and challenges of AI applications in logistics and supply chain management. The major contribution of this study is to develop a conceptual overview of the fields where AI integrates with supply chain management in order to promote further research and development provides valuable insight for logistics/supply chain managers.

Keywords: Supply Chain Management · Artificial Intelligence · Big Data analytics · Machine learning · IoT · Block chain

1 Introduction

Artificial intelligence (AI) is developed to simulate the human capability of learning, mimicking and understanding. It refers to the experimental and theoretical study that makes a computer system perceives, understands, and acts similar to human (Kersten et al. 2017). AI offers the ability of learning, understanding new concepts, self-learning form experience, and making reflections and conclusions. As a consequence, the computer system will have the capability of imitating the patterns of human behavior and generating knowledge applicable for problem-solving. Several fields including Supply Chain Management (SCM) have implemented AI successfully for issues related to decision-making, prediction and learning (Hellingrath 2019).

SCM represents the most economical management of a product's flow from transferring and storing materials to production to distribution for consumption (Raisinghani and Meade 2005). The aforementioned issues are significant in SCM since many predictions and decisions must be taken during the products' flow. They are considered

complex processes due to information asymmetry and the difficulty of achieving an accurate preparation for each entity. AI is able to facilitate SCM processes using its advanced capability including (Ni et al. 2019); (i) describing the non-linear relationship when the parameters are affected by multiple factors simultaneously. For instance, the nonlinear relationship between alcoholic beverage sale and multiple factors, such as temperature and tax policy, that are found influential factors in (Freeman 2000), (ii) processing unstructured data sets, where sample size is not required to be larger than the number of features, and (iii) predicting the SCM performance efficiently in determining the most effective key factors. The paper is organized as follows; Sects. 2 and 3 introduce an overview of the SCM and AI technologies, their concept, characteristics and implementations. The directions for future research and limitations are illustrated in Sect. 4. Finally, conclusion is outlined in Sect. 5.

2 Supply Chain Management

It is essential to form a general perception of AI implementation in SCM emphasizing the urgent need of AI solutions in SCM and bridging the gap between them. Supply chain refers to the stages included, directly or indirectly, in achieving a client's request. The participants in supply chain are usually manufacturer, suppliers, transporters, warehouses, retailers, and clients themselves (Chopra et al. 2001). In each stage, the optimal responsiveness according to a market's requirements is determined through the coordination between five areas; production, inventory, location, transportation, and information. The efficient supply chain management must consider all supply chain requirements and the possible conflicts. Also, it must consider the supply chain set of market demand and operating challenges.

Decisions' maker must consider individually and collectively in any action of the aforementioned areas (Hugos 2018);

- Production: the main purpose of this area is to create master production schedules based on products that a market wants, quantity and time. Several issued must be considered such as plant capacities, balance of workload, and quality.
- Inventory: this activity aims to determine the needed inventory in each stage, and quantity of inventory raw materials, semi-finished, or finished goods. Although it guaranties better response if any uncertainty occurs, decision makers must balance between the cost of holding inventory and the inventory levels.
- Location: this concerns in decisions related to the location of production and inventory including the most cost-efficient location, type of facility (i.e., new or used). Accordingly, the potential paths to deliver the products to the final destination are identified.
- Transportation: this area concerns on decisions related to transferring the inventory between different locations in supply chain. Several issues must be considered such as freight type (i.e., road, rail, ocean, or air), cost and transit time.
- Information: the primary purpose of this area is to define the information that should be collected and shared. Effective decisions are made upon collecting timely and accurate information about production, inventory, location and transportation (Fig. 1)
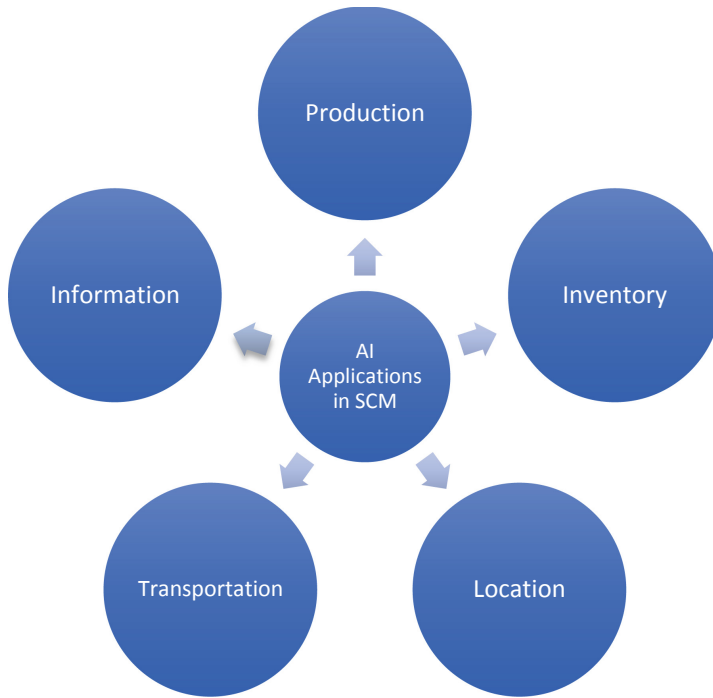
Fig. 1. AI applications in SCM

The collection of decisions on these areas identifies the supply chain efficiency and capability. Businesses nowadays are in high competition; hence, supply chain must be optimized with low cost to compete in their market. Improving the performance of supply chain is essential at any participant including suppliers, manufacturers, and wholesalers (Cai et al. 2009). Several coordination and information technologies could be utilized in improving and optimizing supply chain performance.

3   Artificial Intelligence

There are several open issues and challenges have not been resolved and require Technologies facilitate transforming major parts of businesses to be smart and autonomous. AI could help in optimizing supply chain since it simulates human's decision making and thinking. Without the help of AI, human-being will not be able to analyze many data sets and achieve accurate decision-making (Burgass 2017). AI has the ability to analyze unstructured and structured data. This feature is significant for data analysis and visualization to support business functions. Satisfied and correct decisions depend on having extensive data and high data quality. The expectations of implementing AI must be defined during the planning phase to determine the cost, management method, and business strategy. Advantages of AI are mostly realized through different methods including (Min 2010);

- Enhancement of current processes: This method does not change the existing processes and their sequence; it facilitates only the human judgement to accomplish required tasks. AI can increase the accuracy, efficiency or speed of existing processes. For instance, the procurement function in supply chain can be enhanced by increasing the accuracy of forecasting process. AI may integrate the history-based data, real-time data as well as external factors, such as market trends, to increase the forecasting accuracy.
- Change of current processes and/or functions: this method changes prior defined processes and functions. For example, a chatbot can be developed for the indirect procurement in purchasing requisitions based on specific prerequisites. It clarifies the compliance through questioning about the requisition, and either proceeds with purchasing or not. Such change reduces the cost and increases the availability comparing prior defined process.
- Design and develop new product, service or business: this is the most method of using AI. An example of such method is the intelligent chatbot developed by MAGGI known as Kitchen Intelligence (KIM) (Hartman 2018). The consumers can chat with KIM to find recipe that match with their taste, preferences, and groceries in their fridge.

It is essential to ensure that the processes and steps for any decision are clear and acceptable since AI solutions usually make decisions without declaring the reasons behind them. Machine Learning gains its capability by evolving over the time and number of learned cases, hence, decisions change with time and do not follow a standardized track. Accordingly, business process could be not certain and unpredictable causing high risk to the company (Meyer et al. 2021). In addition, enterprises should hire technology experts to clarify how the solution will be built and handled. The support from consulting firms could be also employed temporarily for successful implementing and digital transformation of business functions. The work team members, their roles and training must be considered during the planning phase.

4   Future Research Directions and Limitations

There are several open issues and challenges have not been resolved and require extensive research. For example, in term of fuzzy time prediction, the existing techniques for forecasting fuzzy time series were proposed by considering nonseasonal or seasonal patterns only. The seasonal patterns could be more complex by having multiple patterns or trends. Thus, predicting fuzzy time series in the presence of multiple seasonal variation should be considered in designing seasonal models. Moreover, the following sub-sections outline more challenges and issues that require further examination in future research.

4.1   Decision-Making and Applicability

The revolution of automatic decision-making process in SCM could be investigated more by developing and testing different AI techniques. For example, multi-agent systems could be combined with semantic reasoning on large datasets to increase supply chain agility. Moreover, automated rule-based reasoning could be applied to facilitate server tasks such as determining supply risks, their impact and responding strategy.

4.2   Forecasting and Learning

The traditional SCM models are statistic, instead, AI could develop dynamic models that are adapted via learning and prediction. For instance, unsupervised learning algorithms could be utilized to identify data patterns representing specific risk or event. Also, the method of learning through example patterns identified by identified by practitioners is efficient. SC could take advantage of learning-based classification and prediction to estimate, assess and mitigate the processes.

4.3   Big Data

The combining of AI techniques and Big Data analytics has been researched and tested in other fields. Having large volumes and acceptable data sets increases the accuracy of decisions made by AI. Since data in SCM can obtained from disparate sources, such as customer behavior, production and distribution, applying Big Data analytics could facilitate many applications of SCM. For example, employing sensor data at distribution centers could reduce the uncertain data on customer behavior and consequently reduce risks and increase visibility and trust between suppliers.

4.4   Hybridization

It can be noticed from the literature that different AI techniques have different capability and hence thy will be more suitable for specific applications. For example, mathematical models are suitable for risk assessment and reduction but not applicable for learning and automatic decision-making. On the other hand, machine learning techniques are effective in decision-making but not in modeling complex systems. Thus, the efficiency of hybrid solutions that combine mathematical models and different AI techniques should be investigated. It could be promising solutions that are capable of automated decision-making and proactive and predictive risks management. This paper possesses certain limitations. It is be possible that some relevant articles have been filtered. Publications in languages other than English were also excluded. For further studies in this domain, the AI applications developed specifically for different stages of supply chain should also be included for analysis.

5   Conclusion

In conclusion, this study conducted an overview of the fields where AI integrates with SCM for the purpose of promoting further research and providing valuable insights for logistics and supply chain management. AI uses computers for reasoning, identifying patterns, using experience to understand certain behaviors, attaining and recalling knowledge, and emerging different forms of deduction to problems solving in decision-making conditions in cases where optimal solutions are way too much expensive or complex to be produced. AI applications can contribute in different SCM processes such as symbolizing non-linear relationships, handling unstructured data sets, and evaluating SC performance and determining the most effective factors. The decisions made on production, inventory, location, transportation, and information can identify the supply chain

efficiency and capabilities. Advantages of AI are mainly realized by enhancing current processes, changing current functions and developing new product. The main research directions of AI applications in SCM include decision-making, forecasting, learning, big data and hybridizations. Further applications are needed to examine the employment of AI in logistics and supply chain management areas such as inventory and planning, transportation network design, purchasing, demand planning as well as warehousing and order-picking problems. Finally, the research on the AI applications in SCM is still in a developmental stage; there is a great space to cover and fruitful research contents to discover in this domain in the future.

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Gender Prediction Based on Arabic Names with Machine Learning Techniques

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Abstract. The classification based on gender is a popular topic for many machine learning fields, much work has been done on gender classification throughout the years. The same goes when it comes to gender classification based on names, there are many papers for English and Chinese names; still, there has been almost no work done for Arabic so far. Moreover, this paper examines the outcomes of applying six machine learning algorithms (Support Vector Machine, Multinomial Naive Bayes, Bernoulli Naive Bayes, Decision Tree, Random Forrest, and Logistic Regression) and deep learning model (LSTM) for gender prediction on Arabic name. In addition, a dataset is created to investigate the results of these algorithms on Arabic names.

Keywords: Classification · Machine learning · Support vector · Multinomial · Naive Bayes · Bernoulli · Decision tree · Random forrest · Logistic regression · Deep learning · LSTM

1 Introduction

Gender prediction based on human names is a common topic which a good number of researchers are investigating. There is a lot of studies and research papers proposed to identify the most suitable models for many reasons. The potential benefits of predicting two common genders have pushed researchers to invest a lot of time and resources to find the best algorithms and models for different languages.

Over the last few years, many web applications have been created for gender prediction which is useful and practical in terms of third-party APIs for many web applications and the demands of such services show the importance of this task in general [7, 8]. Yet, few online APIs are capable of producing accurate results for non-common Arabic names for both gender male and female.

The objective of this paper is to perform gender classification on Arabic names using machine learning models. From there, we can study how efficiently the machine learning algorithms predict genders using Arabic names. Text classification is the backbone of NLP (Natural Processing Language) is it shows how algorithms can recognize, classify, and manage texts.

This paper proposes a new dataset of Arabic names in two columns as they represent full names annotated with their assigned genders (0 for female 1 for male) for further research.

In the following section, the paper discusses several research studies related to name classification using dataset in different languages.

Further, the paper explains the methodology used to examine the names based on gender difference. This section walks through the details of dataset used and it is preprocessing technique. In the proposed approach section, the paper takes a look at the machine learning algorithms used and the analysis for each algorithm and how it works. Lastly, sections conclusion and future research highlights future research plans with different dataset and for the linguistic aspects of the naming convention in Arabic names.

2   Related Work

Many papers have been published throughout the years for English and Chinese names. Also, many methodologies on identifying genders are published in different languages. Along with many methods of preprocessing text have been introduced throughout the years with many models have been applied to them to investigate the best possible options to get the best result with such data [1–5].

Panchenko and Teterin proposed an approach on Russian names for gender classification task by utilizing a supervised model. The experiment was implemented on a dataset of around 100,000 Russian names from social media. The authors in the experiment have reported that the model has managed to get an excellent result that reached 96% accuracy [3].

In another work, to and Nguyen have worked on research on Vietnamese names using traditional machine learning algorithms along with a deep learning model. Their experiment was done on a dataset of 26,850 names, the many experiments have scored great numbers in terms of F1 score, while the deep learning model has achieved up to 96% of accuracy [5].

Due to the differences among languages a study towards understanding how the structure of different languages affects the role of gender in terms of names. Both Arabic and English share the same name order.

The name order in English is first name, middle name, last name. Unlike Arabic and English, Vietnamese names have different order of components in which the last name is the first component of a name.

3   Methodology

3.1   Dataset

In this section, the collected data in this work is analyzed as well as its distribution in both datasets. The data is collected from different sources such as social media and news websites as well as a small amount of data given to me by the university. The two datasets have two columns labeled as Name and Gender; where Name contains full names, while gender is labeled as 0 and 1 to represent the genders where 0 is reserved for females and 1 for males [17].

The English dataset consists of 22,850 samples of which the proportion of two labels is fairly balanced. The percentage of females and males, respectively, is 50.09% and

49.91%. While the Arabic dataset consists of 21,320 samples of which is fairly balanced as well. The percentage of females and males, respectively, is 50.0% and 50.0%.

In the next section, the paper presents the outcomes of applying machine learning algorithm on the two datasets. Since there are two distinctive datasets, the dataset written in English will be referred to as AE while the Arabic one will be referred to as as AA. Two datasets are proposed for gender classification based on Arabic names; one written in Arabic while the other is in English. The English dataset consists of 23060 full names while the Arabic dataset has 20340 full names, in both dataset the names are annotated with gender (Figs. 1, 2 and Tables 1, 2).
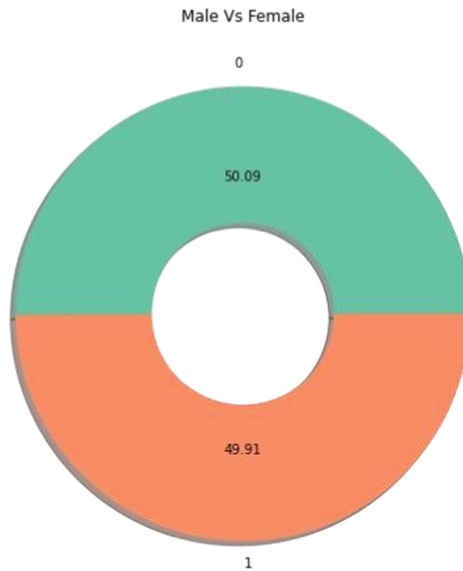
Fig. 1. The percentage of females (green) and males (orange), respectively, is 50.09% and 49.91% in AE dataset.

Table 1. Example for male and female names in AE dataset.

No.	Names	Gender
1	Yosra Ismail Mohammed	0
2	Ahmed Mahmoud Daifullah	1

3.2 Data Processing

What determines the gender of a name in Arabic is solely based on the first name, unlike some other languages; such as Vietnamese names for example, where other components of a name play a role in determining the gender of a particular name [5]. For this reason,

Fig. 2. The percentage of females (green) and males (orange), respectively, is 50.0% and 50.0% in AE dataset.

Table 2. Example for male and female names in AA dataset.

No.		Gender
	Names	
1	حسين أحمد ياسين	1
2	تولين يوسف عبدالله	0

the tested names are split in both datasets to extract the first names in all of them. Since the first name is the most important factor in this work, middle and last name must be removed as they were irrelevant for determining the gender and include them will not be help, in fact, including middle and last names may affect the performance of the models. Moreover, both datasets are divided into two different subsets: training, and test. In the two datasets, the balance of males and females is nearly balanced. Thus, each of the subsets is designed to maintain this equity and avoid biases in the training process. Both datasets were divided in the proportion of 90% for training, 10% for testing.

To preprocess the names for the machine learning algorithm, the method CountVectorizer in sklearn is used, which is applied to convert a collection of text to a matrix of token counts. Countvectorizer is a method to convert text to numerical data which makes it easy for text data to be used directly in machine learning and it leads to good results based on previous works [5]. For this reason, it is found that CountVectorizer is appropriate to use in this study since it does its function perfectly.

4   Proposed Approach

In this section, the machine learning algorithms is presented to be implemented in this paper. The task in this experiment is a binary classification task since there are two labels (Male and Female) needed for this task. The goal of this paper is to look at the performance of machine learning algorithms for detecting genders based on Arabic names in English and Arabic and how their results may differ depends on the language itself. Thus, many known models are implemented such as Naive Bayes Bernoulli, Naive Bayes Multinomial, Support Vector Machine, Kneighbors Classifier, Logistic Regression, Decision Tree, Random Forest and deep learning model Long short-term memory [14, 15].

Naive Bayes is a commonly used for text classification task [9, 10], evidently it worked very well in previous research using English, Chinese, Vietnamese names, and that was enough reason for me to list it in the list of the machine learning algorithm in this paper.

Support Vector Machine is an excellent choice to use to classify Arabic names since many names belong to both labels, for that, SVM has the capability of handling such a tricky issue better than other algorithms. Also, Support Vector Machine provides a superior method for text classification because its kernel function ability to handle nonlinear spaces [5, 11, 16].

KNeighbors Classifier (KNN) became a good candidate in this research due to its aspirating outcomes in Zaidi and Hassan work on news headline text classification which showed in Urdu/Hindi [6]. The k-nearest neighbor algorithm is one of the common algorithms for text classification, it assumes that the classification of a vector is similar to the classification of other vectors close to it.

Speaking of classification algorithms, Decision Tree does work efficiently for classification tasks. The decision tree algorithm is designed to classify data by using tree representation. Every node of the tree is associated with a feature, and each leaf node corresponds to a class label [13].

In addition, Random Forest is an ensemble algorithm that consists of multiple decision trees. Where Logistic Regression is a classification algorithm that is used to predict value of the target variable is categorical or binary based on a set of independent variables which works well for text classification like the task at hand [12].

5   Results and Analysis

From the results of models used in the experiments it is found that some F1-Score are interesting. Initially, it is expected the LSTM model to score the highest F1-Score among the algorithms [14]. However, after taking a deeper look at the difference results between that model on AA and AE dataset and other algorithms, better results are achieved. The variation of spelling some Arabic names in English have played a role in the results in general.

It is surprising how poorly the Bernoulli NB scored on the AE dataset compared to AA dataset, which is not expected to perform exceptionally but it is believed could achieve better than the actual performance. Both SVM and Random Forest algorithms

have achieved impressive results in both datasets along with KNeighbors algorithms in both datasets. Those algorithms have performed very well in many other languages and have done great in Arabic as well (Tables 3 and 4).

Table 3. Experimental performance of selected models on AA dataset.

Model	Precision	Recall	F1-score
Bernoulli NB	0.81	0.73	0.77
Logistic regression	0.78	0.78	0.78
Support vector machine	0.99	0.96	0.97
Decision tree	0.99	0.97	0.98
Random forest	0.99	0.98	0.98
KNeighbors	0.99	0.98	0.98
LSTM	0.95	0.92	0.94

Table 4. Experimental performance of selected models on AE dataset.

Model	Precision	Recall	F1-Score
Bernoulli NB	0.73	0.65	0.69
Logistic regression	0.75	0.75	0.75
Support vector machine	0.95	0.95	0.95
Decision tree	0.99	0.98	0.98
Random forest	0.99	0.97	0.99
KNeighbors	0.98	0.97	0.97
LSTM	0.96	0.91	0.96

6   Conclusion and Future Work

In this paper, several approaches are presented for gender classification task based on Arabic names. The experiment is conducted on five machine learning algorithms and a deep learning model which has reached 94% on the AA dataset and 96% on the AE dataset. Other traditional algorithms have proven their ability to perform very well in the datasets used. It is expected that traditional machine learning algorithms would not perform as well in this experiment if the dataset at hand was expanded in future studies.

It is still questionable to think what makes a name feminine or masculine according to the social norms in a society. It is highly probable the order of a sequence of letters or the placement of certain letters in a name could reveal hidden patterns in the naming convention in a society. Such a question for naming convention is possible to answer and

worth further investigation; in addition, deep learning models are able to give insights through its deconstruction of names in this area.

In conclusion, the results of the experiments relating to gender classification show the idealistic example of deep learning models on such a task. Moreover, traditional machine learning algorithms have reached remarkable results which their performance will be studied further on different datasets. We plan to further study the efficiency of other different deep learning models on this task and the effect of transfer learning on them, also, the performance of traditional machine learning algorithms as well.

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Use of Social Media During Covid-19 Pandemic and Its Impact on Brand Image: A Conceptual Model for Airlines Industry

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Abstract. This work proposes a conceptual model to study the influence of social media (Facebook), on the brand image of airlines companies during the health worldwide crisis of COVID-19 Pandemic. The paper analyses the relationship between the use of airlines companies' Facebook pages and its impact on their brand image as well as the purchase intentions via the adaptation of the DeLone and McLean Information System Success (ISS) Model. This proposed model is based on 7 constructs which are: information quality (IQ), system quality (SQ), service quality (SeQ), use, user satisfaction (US), brand image (BI), and purchase intention (PI).

Keywords: Social media · Brand image · Airlines industry · Covid 19 · Information system success mode

1 Introduction

For more than two years, the whole world has been fighting the COVID-19 Pandemic with all its challenges (Nguyen and al 2020). Under these hard circumstances, one of the mostly affected economic sectors was the airlines industry which was hardly impacted by this global health disaster. In this regard, the starting point of this work was to explore on the opportunity of using social media as an integrated Marketing solution for Airlines companies to promote their brand image and restimulate the demand. Nowadays, social media became one of the most used integrated marketing communications tools ensuring interactivity, effectiveness, and engagement (Montavlo, 2011); (Mangold and Faulds 2009). Several research (Kaplan and Haenlein 2010) supported that social media tools can be used to brands and create an online community in the social media including, but not limited to, social sites, blogs, sites, news, forums and more.

According to (Mangold and Faulds 2009), Social medias are defined as "A wide range of online, word-of-mouth forums including blogs, company sponsored discussion boards and chat rooms, consumer-to-consumer e-mail, consumer product or service ratings websites and forums, Internet discussion boards and forums, moblogs (sites containing digital audio, images, movies, or photographs), and social networking websites".

From another side, (Xiang and Gretzel 2010), have defined them as "Internet-based applications that carry consumer-generated content which encompasses media impressions created by consumers, typically informed by relevant experience, and archived or shared online for easy access by other impressionable consumers." (Xiang and Gretzel 2010).

Boyd and Ellison (2007) consider that social media tools can be classified in three categories of tools, social networking sites, social bookmarking sites, and social media video sharing sites. Several studies demonstrate that social media offer a lot of advantages to brands: Ameliorating the brand reputation, involving consumers in the brand community, and expanding brand awareness (Muniz and Schau 2011; Keller 2009). A study by Infographics (Jackson 2011) stated that, 50% of Twitter and Facebook users consider they express a positive attitude toward brands actively engaged in social media.

With reference to the previous analysis, the purpose of this research is to examines how Facebook influence the brand image in the airlines industry during the Covid-19 pandemic. The paper analysis the relationship between the use of airlines companies' Facebook pages and consequences on brand image and the purchase intention through an adaptation of IS success model (1992, 2003). This model is considered as a pioneer referential conceptual framework based on a multidimensional approach considering the following interdependent constructs: System quality, Information quality, Service quality, User satisfaction System use, Intention to use,, Individual impact, and Organizational impact.

It is important to highlight the IS model was adapted in several different contexts such as e-Government (Wang and Liao 2008), e-commerce (Park et al. 2011), healthcare system (Bossen et al. 2013). In this regard, the purpose of our paper is to offer a new adaptation of IS model in the field of Airline Industry during the specific context of Covid-19 Pandemic.

2 Literature Review

As it was introduced, this paper proposes a conceptual model inspired by the updated IS model as an antecedent of the brand image and intention to use for Airlines companies Facebook pages users during the Pandemic Covid 19. For this purpose, we retained three main constructs that we considered as relevant to our approach: Information quality (IQ), System quality (SQ), and Service quality (SeQ). In addition, three other dependent variables (Use (U), Intention to use (IP) and User satisfaction (US)) have been considered for our model.

• **Information quality (IQ):** (Urbach and Muller 2012) and (Hadoussa 2020) advanced that the Information Quality is related to the content and characteristics of the information. In this regard, it was suggested to measure (InfoQ) in terms of the reliability, effectiveness, usefulness, confidentiality, efficiency, accuracy and availability of the information proposed through the Facebook page.
• **System quality (SQ):** in the context of our research, the system quality is defined with reference to the desirable characteristics of the system. Several studies (Urbach and Muller 2012) focused on various characteristics such as, but not limited to, (Easiness , features, response time, functionality, accessibility) (Hadoussa 2020).

• **Service quality (SeQ):** The service Quality construct is defined in term of the quality of support provided by the IT system. Various research focused on service quality dimensions (Urbach and Muller 2012). In our research, we suggest measuring service quality with reference to: The assistance from the IT technical Facebook page's users, the availability, assistance for problem resolution, and replying to user's technical needs (Hadoussa 2020).

• **Use (U):** Several research such as (Guimaraes and Igbaria 1997) suggested to focus on the frequency of usage to assess the way with which the Facebook page is used (Rarely, sometimes ore frequently) (Hadoussa 2020).

• **User satisfaction (US):** This construct is generally measured by an assessment of overall user satisfaction. It reflects the global feeling of satisfaction toward the experience of using the Facebook page (Hadoussa 2020).

• **Purchase Intention (PI):** Different research (Duffett (2017), Kim and Ko (2012), Dehghani and Tumur (2015).) had concluded that communicating through SM has a big impact on customer attitudes in term of purchase and repurchase intentions (Hadoussa 2020).

• **Brand image (BI):** From another side, we proposed to consider the Brand image in our conceptual model. Keller (2003) define the brand image as "The general perception of a brand situated in a consumer's memory and the combination of many brand reminders". According to (Chae, Shin and Ko 2015), brand image is "a physical structure formed in the consumer's mind; it is a combination of a consumer's feeling for the product itself and associated indirect factors" (Hadoussa 2020).

For Taylor et al. (2007) brand image represents "perceptions about the brand as reflected by the brand associations held in consumer memory". Brand image represent the personal perceptions, associations and beliefs about based on all the descriptive and evaluative brand- related information (Iversen and Hem 2008).

From another perspective, various research such as Hajli (2013) (Hsieh and Li 2008). Chen and Barnes (2007) concluded that social media use influences customers' trust, positive perception of brand image and purchasing intent. In this regard, social media is considered as an efficient tool to interact with current and potential customers to develop a positive brand image (Halligan and Shah 2009; Fortezza and Pencarelli 2015).

Finally, (Koh and Fang 2012) have supported that positive perception of BI have a positive impact on purchase decisions. From their side, (Lin et al. 2007)(Grewal et al. 1998) concluded that there is a positive correlation between the brand image and the Internet User Purchase Intention.

3   The Conceptual Model, Hypothesis, and Research Methodology

Based on the theoretical background, the conceptual model and the related hypothesis are presented as following (Fig. 1).

- H1: IQ impact Facebook page U.
- H2: SQ impact Facebook page U.
- H3: SQ impact Facebook page U.

- H4: IQ impact Facebook US.
- H5: SQ impact Facebook US.
- H6: SQ impact Facebook US.
- H7: U impact Facebook US.
- H8: U impact BI.
- H9: US impact BI.
- H10: BI impact PI.
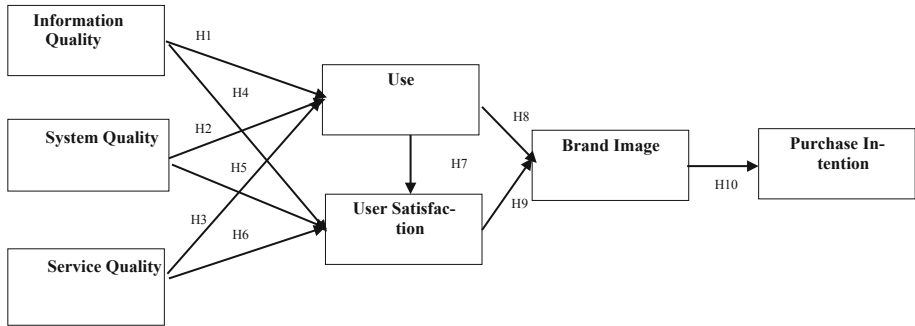
Fig. 1. Research model measuring social media advertising success

To measure the seven constructs of the social media advertising success model; we selected items based on the literature review with reference to the following research.

Variable	Reference
Information quality	Urbach and al., (2010)
System Quality	Petter and Fruhling (2011)
Service Quality	Urbach et al. (2010)
Use	Petter, DeLone and McLean (2008)
User satisfaction	Petter, DeLone and McLean (2008)
Brand image	Jin et al. (2012)
Purchase intention	Algesheimer et al. (2005), Chaudhuri, A., and Holbrook, M. (2001)

The methodological approach of this paper is based on a survey to 500 users of Facebook official pages of four (4) Airlines companies representing different regions in the world (Qatar Airways, Royal Air Maroc, Air France and Turkish airlines). The choice of these airlines companies is justified by the requirement of the representativity of different regions and socioeconomic context. The survey consists of two parts. The first part is dedicated for some questions related to gender, Airlines company, frequency of visiting FB, frequency of "liking", Frequency of "commenting"). The second part is dedicated to ask participants about their perceptions and uses of social media advertising and the Facebook pages of the correspondent Airlines company.

Twenty-nine (29) items using five-point Likert type scale (1 = strongly disagree and 5 = strongly agree) were selected to record their perceptions of research variables (Facebook page information quality, Facebook page system quality, Facebook page service quality, user satisfaction, use, brand image, purchase intention).

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Digital Economy, Business Innovation, Technology and Covid-19

Decentralising the Digital Economy: The Blockchain and Competition Remedy

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Abstract. The global economy is in a precarious situation. The digital ecosystem has been a major contributor in sustaining the global economy and mitigating both the financial and social crises that are plaguing the world. The merit and reliability of technology have been reinforced in light of recent events. The digital economy is not perfect, to say the least, with major concerns regarding rampant anti-competitive conduct by the few enterprises that dominate the market. Competition law around the world has proven to be inefficient in dealing with these technological giants and before a remedy could be found, blockchain technology has started gaining traction which has the potential to change the face of not just the digital economy, but society as we know it.

The virtue of decentralisation has long been considered a desirable state for the digital economy and blockchain offers the means to achieve this, and much more. This paper explores how competition law and blockchain both seek decentralisation and aims to ascertain how they can help each other achieve this in a way that builds a sustainable digital economy. The paper makes an exploratory analysis of the various interactions between competition laws and blockchain, based on which we conclude that regulating blockchain through competition laws can address the pressing needs of the global digital economy.

Keywords: Decentralisation · Competition Law · Blockchain

1 Introduction

The outbreak of the COVID19 pandemic and several other geopolitical factors have sent economies all over the world in a devastating downtrend. The world is witnessing an economic recession of unforeseen magnitude and the future appears bleak for the time being. The recent years have also increased our reliance on digital platforms, and one would be hard-pressed to find any avenue of human society which has not been augmented by the touch of digitalisation. A much-discussed but lesser understood aspect of the recent technological advancements is blockchain. Blockchain has provided us with a new method of storing and exchanging data, addressing many of the issues that plague the current digital ecosystem. Simply put, blockchain is a distributed ledger with no single point of centralisation where data can be stored, accessed, and transferred securely. Blockchain offers many competitive advantages to the traditional institutional

models and also poses some daunting challenges to policymakers and regulators. The sentiment regarding blockchain differs heavily. Some claim it to be the torchbearer of the 4th Industrial Revolution (along with other technologies such as artificial intelligence, machine learning, augmented reality etc.) [1] while others believe that it is just a fad that wouldn't amount to much.

There is no acrimony in the fact that technology is beneficial for the economy and society. That is part of the reason why technology progresses at such an exponential pace. The relationship between financial technology and financial performance has also been ascertained to be a positive one [2]. The COVID19 pandemic has increased the volatility in the global stock markets [3]. The only (slim) silver lining to the pandemic can be said to be that it has propelled the digital transformation and reiterated the importance of digital platforms in our society [4].

The increased dependence on digital platforms has also highlighted the flaws existing in the current structure of the digital ecosystem. The digital ecosystem is heavily monopolised, dominated by a handful of technology companies that have essentially become too big to fail. But the problem lies in the fact that these companies have reached their current proportions after due compliance with the existing competition laws. This has led to much scholarly discourse regarding the efficiency of competition laws. Statutory legislation, court precedent, and prosecutorial discretion determine the scope of competition laws. The limitations of competitiveness are now being questioned. Many competition law scholars believe that the present restrictions are excessive. Even if the data supporting their allegations is debatable, they argue that competition law should do more. Modern opponents, particularly in the digital industry, make sweeping statements about expanding economic and political power. They point to supposedly low enforcement activity to imply that the law's strictures deter competition regulators and plaintiffs from filing lawsuits [5].

The criticisms regarding the scope of competition laws need to be revisited considering the advancements of blockchain. Blockchain offers many solutions to the existing problems that are faced by competition authorities, but at the same time, it also poses several new challenges too. The remedies which arise from prolonged litigation against the tech giants are rarely beneficial and have too many issues with compliance. The nature of remedies ordered in an antitrust proceeding involving technology companies necessitates the existence of a committee of members who have the technical expertise and monitor the entire process of remedy implementation in real-time [6].

Blockchain has the potential to transform the nature in which the technology companies operate and also facilitate a model which is compliant with competition law and enables swift implementation of competition law remedies.

1.1 Research Gap

The interface of blockchain and competition laws is not extensively explored. On the other hand, the fact that competition laws prove inefficient in enforcing competition in the digital markets is widely recorded [7]. The scholarship exploring the viability of using blockchain for enforcing better competition in the digital markets is scarce. This research aims to fill this gap and stimulate further study in this area.

1.2   Research Objective

This research aims to evaluate the competitive advantages of using blockchain in the digital economy. This research also attempts to illustrate that a blockchain-based digital ecosystem would be competition compliant and necessary for a sustainable digital economy.

1.3   Research Methodology

This research conducts qualitative analyses of the recent studies exploring competition law application in the digital economy and blockchain technology. This is a doctrinal research paper that conceptualises the problems faced by competition laws in the digital economy and the role of blockchain in alleviating them.

  This research paper begins by briefly introducing blockchain and the importance of the digital economy for our society. The introductory portion also outlines the structure of this research paper. The second section of the paper deals with the importance of competition in the markets and the role of the law in enforcing it. The section also deals with the virtues of decentralisation and how competition and blockchain both pursue this goal. The third section explains the need for decentralisation in the current digital ecosystem. This part also explores the opportunities offered by blockchain in achieving this decentralisation. The paper concludes by alluding to some practical use cases of blockchain and their competitive advantage over the traditional systems. The concluding section also explores the future research potential and limitations in this area of study.

2   Competition and Blockchain-Same Target but Different Arrows

The issue of decentralisation has been widely debated across time. The debate has taken place in the context of political ideology, economic prosperity, and social structuring [8]. Blockchain has brought this debate to the realm of technology as well and effectively won it. But the decentralisation offered by blockchain is incomplete as the mechanism for running the blockchain network has a natural tendency to form cartels in some models [9]. This is the reason that blockchain needs the law to achieve its intended goals.

2.1   Competition for Survival

Competition is a very decisive element in determining and shaping evolution. This fact is perhaps most widely known by Darwin's quote 'survival of the fittest' [10]. In the realm of economy, Nobel Laureate Hayek is perhaps the most ardent believer in the power of competitive forces which is why he believed that the competitive process is the only system designed to minimise the exercise of power by man over man [11]. Blockchain has raised competition to the existing centralised systems and provides a better alternative to exercise power in society.

  Competition simply means the force which leads individuals (and organisations) to work for their benefit and fight for superiority or control over others. The meaning

changes based on context, but the principle remains the same. In the context of the economy, competition is simply the work of the 'invisible hands' shaping the market as explained by Adam Smith [12]. The goals of competition law are frequently debated, but the bottom-line remains the same, maximising consumer welfare [13]. The financial crisis of 2008–2009 led to a global re-regulation of the markets [14] and the current economic condition also begs for a similar, if not more radical reform. Economics and law cannot claim the immutability, universality, precision, and exactitude that other sciences can. To some extent, the latest financial crisis was also predicted. It's not as if no one noticed the escalating strains. Many credible economists warned of the dangers of global imbalances, claiming that they were simply unsustainable and anticipating a currency crash [15]. The reforms are necessitated because the digital platforms are a steadfast contributor to the global economy and already need some restructuring to make them competitive again.

Competition laws aim to regulate the behaviour between enterprises to promote competition and establish a free market where everyone can trade on an equal footing and consumer welfare is maximised [16]. Cartelisation, abuse of dominance, collusive practices, are all offences against the competitive forces in the markets and manipulates it to favour the offenders at the expense of the consumers. The EU competition jurisprudence has evolved to safeguard the markets, ensure stable supply in the markets, identify optimal conditions for growth and expansion, maintain competition to benefit consumers concerning both price and quality, ensure that pricing conditions are non-discriminatory to buyers, ensure that export prices remain within equitable limits for both buyers and producers, protect consumers from the unfair or artificial competition, ensure that the normal competitive factors remain undistorted, and consider a policy of rational and sustainable exploitation of the natural resources of the markets [17]. The competition laws also seek to make competition enforcement through law and policy to maintain market equilibrium and stability [18]. It can be said satisfactorily that competition law aims to attack any form of concentration of power in the market, i.e., decentralise the markets and let competition roam free.

2.2 Blockchain for Competition

Blockchain is a digital ledger that runs on a decentralised peer-to-peer network of computers that allows for a wide range of online transactions. Blockchain has one quality that sets it apart from other disruptive innovations: it is a global, transnational technology by nature and design. It was created to bypass national borders and established institutions. The blockchain network allows for the transmission of data and economic value regardless of the participants' geographical location [19]. Blockchain is simply a tool to do what we already do, but in a decentralised manner, removing the need for intermediaries in everyday transactions.

Blockchain is so-called because it essentially contains *blocks* of data that are linked to each other via cryptographically encrypted *chains*. Competition in the field of blockchain technology itself has given rise to a few other variants of the technology which do not use blocks or chains to connect or communicate with each other. Hence, the better classification for such technologies, including blockchain, is Distributed Ledger Technology

(DLT). Distributed ledgers would only be of interest to cryptographers and philosophers if they didn't solve real-world problems. Some adoption is motivated by a wish to avoid government oversight. Entrepreneurs, established organisations, big financial institutions, and governments researching the blockchain today are, for the most part, looking for tangible benefits. The two main value propositions of the blockchain are the avoidance of reliance on central actors and the creation of universal truth among untrusting parties [20].

It is abundantly clear that both competition law and blockchain pursue the same goals, i.e., decentralisation or breaking the concentration of power in a small or central area. Competition law seeks this goal in the economic markets and blockchain seeks this goal in governance, administration, and institutions. A harmonious approach between these two would be beneficial for them and the market at large.

3   The Need for Decentralisation

The idea of decentralisation is not a new one. Several philosophical discussions regarding the structure of social, political, and economic institutions have claimed that decentralisation is the key factor that would revitalise society. The digital economy is dominated by a few technological companies who act as market intermediaries and provide services that essentially run the digital ecosystem. But these companies are not merely dominant market players anymore, they serve as gatekeepers and control the digital ecosystem according to their own needs. They monopolise the digital space and exclude competition from the market while charging exorbitant fees and blatantly engaging in anti-competitive conduct. The current competition laws enforce sanctions, bans, and mandated neutrality standards, but these measures do not achieve the desired outcomes [21]. The digital ecosystem is still in much the same shape and these dominant market players keep entrenching themselves deeper. The problem if put simply, is that too few players have too much power and they shape the market according to their own best interests, not the consumers'.

Decentralisation refers to the process of reallocating resources and powers from a higher and centralised authority to lower and decentralised ones. Administrative decentralisation, political decentralisation, and economic decentralisation have been widely debated and considered but haven't been effectively implemented so far. The arguments against decentralisation typically state that the distribution of power and autonomy does not increase efficiency as the people or institutions inheriting the redistributed power may not be sufficiently capable of exercising it and using it effectively [22]. The people favouring decentralisation typically assert that centralised authorities make for a single point of failure and breed corruption. Both these views have historical evidence to support their claims. Blockchain provides a way to achieve a working decentralisation model. The problems with new developmentalism need better scrutiny to have any changing and lasting effects on society [23].

4   The Blockchain Remedy for Digital Platforms

Digital platforms have entrenched their way into our lives by a very simple business model. They provide their services to their users for free, showing them advertisements

in return and collecting user data which they use and sell to other market players. Over time, this simple business strategy has enabled them to dominate virtually every aspect of the digital ecosystem. The existence of network effects further reinforces their hold on the markets.

The digital platforms use, regulate, and moderate the content they display on their terms and in their way. There have been cases where people harassing other users on a platform even went as far as sending bombs to them, platforms encouraging discriminatory advertising, and platforms encouraging radicalisation to keep users visiting their website [24]. They cannot be blamed entirely for that either. They are after all corporations, and they act in a way that would maximise their profits [25]. It is just that their maximum profits come at an expense of stifling competition and adopting unfair trade practices. This is precisely where the law steps in and aims to regulate the behaviour of corporations and protect the interests of people because if they are allowed to maximise their profit on one hand the interests of the consumers should be protected on the other hand.

The growth of digital platforms and their regulation has been a dynamic and ongoing process. Technology evolves according to the needs of society, and law evolves to maintain harmony in society. Both of them develops to fit or react to a range of pressures, technological, institutional, social, political, ideological, yet their evolution is far from linear or rational and requires constant normative reassessment [26]. The most preferred solutions to the current state of the digital platform economy are, to either break them down into smaller firms or to require them to be interoperable and let other market players compete with them on equal footing [27]. Both these solutions have some hurdles in their practical application. Migrating the digital platforms on blockchain-based networks seems like a lucrative option, but such migration would only be possible if mandated and regulated by law.

The blockchain-based digital ecosystem appears to be an advantageous option for both the competition authorities and consumers of digital services, but it also has some flaws. The most notable flaw is that blockchain-based networks can also be used by the platforms to engage in anti-competitive practices which might go undetected. Permissioned and closed-blockchain networks provide the perfect conditions for engaging in cartels which might make it almost impossible for detection and even if they are detected, the entities engaging in the cartelisation may go unidentified due to the anonymity and pseudo-anonymity offered by the blockchain itself [28]. Smart contracts, another novel offering of the blockchain also have some far-reaching consequences for lawmakers and policymakers. Smart contracts are algorithms that are coded on a blockchain network that enables them to execute and operate automatically without any human intervention or participation. In essence, the code that builds a blockchain, and the code that runs smart contracts on the blockchain, are made by humans (programmers), and in that sense, the code is the rule made by the rule-maker (programmer), embodying the concept of code as law, *lex cryptographia* [19]. The emergence of Decentralised Autonomous Organisations (DAO) has also been made possible due to blockchain. This development involves automation, decentralisation, and the perpetual operation of an enterprise without any human intervention whatsoever. These have potentially unprecedented ramifications for business, the economy, and society. The legality of these developments is still in the

grey. Smart contract languages for making legally binding contracts on a blockchain and defining the rules for administration and operation of DAO are also ambiguous [29].

The possibilities offered by blockchain to restructure the institutional structure of our society or at least the structure of the digital economy, cannot be exaggerated. Policymakers, lawmakers, and regulators should consider a positive, constructive, and inclusive outlook to rebuild, restrengthen, and recover the global economy from the ongoing crisis and combat the future ones [14]. In terms of institutional competition and influence, the most effective strategy is to promote the democratic, free-market model in the digital economy [30]. Economic competition can be governed by a variety of institutions. Markets in decentralised, capitalist economies often provide the incentives and discipline needed to keep prices low, output high, and innovation moving forward. Concentrated markets or even monopolies can also form for legitimate reasons such as efficiency, innovation, or customer desire, competition governance frequently entails monitoring rather than accountability or injunctions [31]. The use of blockchain can ameliorate all these ailments and increase the efficiency of competition laws in the digital economy. Blockchain is already being considered for better environmental compliance [32], public procurement [33], securities markets [34], and even in the arts and creative industry [35]. Such use cases and possible applications increase the urgency of providing proper legal recognition and regulation of blockchain.

Blockchain's practical applications are already being examined extensively, particularly by developing countries. Blockchain technology has the potential to help poor countries modernise and digitise government services. Because it was designed to work in an environment where members cannot always trust one another, blockchain is extremely safe. External parties cannot tamper with records recorded in a blockchain database, making them authoritative. Smart contracts may provide automated and predictable execution, limiting the potential of third parties manipulating previously agreed-upon procedures [36]. The benefits to a developing economy are obvious: fraud and corruption are minimised, trade becomes more efficient and cost-effective, government becomes more effective, and local technology centres can expand to construct infrastructure and export knowledge.

5   Conclusion

Decentralisation is appealing. Both competition laws and blockchain aim to provide decentralisation. The digital markets are dominated by a few technological giants and inhospitable for any new entrants to the market. But free-market ideology and crony capitalism have not been without criticism [37]. Considering blockchain as a panacea for all the problems associated with centralisation is unhealthy and impractical. We should look at blockchain as a tool that enables us to achieve a high level of decentralisation, and conduct our institutional operations in a more secure, efficient, reliable, and safer manner.

The idea of perfect competition does not work and is harmful to the consumers as well [38]. Technological enterprises have always been a magnet for anti-competitive conduct [39]. The concept of precautionary antitrust although considered modern is also imperfect and paves the way for innovation-based antitrust [40]. Formulating a multi-national

course of action for combatting the global technological companies' anti-competitive conduct seems ideal [41]. The limits, goals, and approaches taken by competition law keep evolving according to the needs of the economy [42].

Blockchain-related cases have been cropping up since the last decade [43]. The lack of legal clarity, policing, regulation, and recognition cannot continue for long. So far, blockchain has prospered without any assistance from the law and its lack thereof has indubitably stunted its growth.

Summarising the findings of our research, we argue that the astounding potential of blockchain technology for building a sustainable digital economy is grossly underestimated currently. This is rather astonishing considering the extent of anti-competitive behaviour on today's digital platforms. The current state of digital platforms does not favour law and policymakers [26]. There are a few competition authorities who are monitoring the growth of blockchain and its interaction with competition laws, but even their approach towards blockchain is cautious. Understandably so, no regulator, lawmaker, or policymaking authority should hastily make any decisions. But the lack of blockchain value proposition in competition authorities is alarming. The ability of competition authorities to succinctly adjudicate the resourcefulness of blockchain for competition law will largely depend on the data gathered from reliable research into this field. As a starting point, some simple policy or discussion papers by the various competition authorities around the world, exploring the possibility of using blockchain for the future of competition law enforcement would go a long way in stimulating further research in this area. The authorities can also undertake such endeavours with the existing organs of government that are dealing with blockchain or the digital economy.

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Paradigm Shift in Marketing Strategies of Hotel Industry in Bengaluru, Post Covid-Customer Perspective

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Abstract. The tourism sector in India is one of the vital contributors to the economy of the country. The Pandemic has caused a great impact on the Indian tourism and has also brought panic among domestic and international travelers both to travel and dine out. Lockdowns and intra state travel ban, and the fear of being quarantined has affected the Hospitality and Tourism Industry which has contributed to economic slowdown.

In this paper researchers have made an effort to find out the impact of the pandemic on hotel industry with special reference to Bengaluru city of Karnataka state, India. The marketing strategies of the hotel industry have witnessed an extreme change which is being analyzed in this paper. The objective of the study is to study the marketing strategies of hotel industry pre and post covid and to understand the customers opinion in relation to the paradigm shift observed in the marketing strategies of hotel industry in Bengaluru. Primary data was collected through questionnaire and analyzed with suitable statistical tools.

Keywords: Covid-19 · Marketing strategies · Hotel industry

1 Introduction

The pandemic Covid-19 has disturbed the system of all the sectors of the entire world. The Tourism and Travel industry, which is one of the most important supporters of the economy have also undergone an impact because of the pandemic. The hotel industry, as an important player in the tourism industry, is one of the most negatively impacted economic sectors due to its nature of business. According to statistics, more than 91% of the world population have travel restrictions which were imposed by public administrations. Pre COVID-19, hotel industry were depending on various techniques and marketing skills, but post COVID-19 the entire scenario has changed and those skills have lost its importance. Discovering innovative use of technology is the need of the hour which is essential for the survival of the hotel industry.

In this context, it becomes vital for the hotel industry to understand the impact of the pandemic on their industry and according change the marketing strategies to retain

and attract more customers and to keep their business going. There is a paradigm shift observed in the marketing strategies of the hotel industry. Cleanliness and hygiene, safety norms, comforting accommodation facilities, guest's hotel preference, social distancing, contactless system in virtual forms and online payments have become the new feature of the hotel industry.

1.1 Literature Review

A case study conducted by Redjki et al. (2021) among hotel industry in Indonesia revealed that to survive in the market during the pandemic time the hotel has made a change in the marketing strategies adopted before the outbreak of pandemic. The strategies had focused the foreign customers before the pandemic. That included great promotions to attract the foreign tourists. During the pandemic the marketing strategy concentrated on product life cycle strategy. More emphasis was given to ensure reliability in all sort of promotions made by the hotel by making a difference. During the pandemic, the total customer base of the hotel changed from international to domestic customers, as such the hotel followed concentrated marketing strategy to attract the domestic customers. The hotel also reduced the room costs and allowed the staff to go on leave with some allowances. This could result in reducing the operation cost. At the same time the hotel could successfully follow customer acquisition strategy.

Kaushal and Srivastava (2021) analyzed the hotel industries in India during the pandemic time to assess the strategies adopted by them to sustain the business during the pandemic. Their study highlighted the importance of having multi-talented and professionally qualified staff in this sector. It was found that better preparedness for the crisis had made many hotels in India to survive during the pandemic. During the pandemic the customers had an increased sense of sanitization and hygiene. As such awareness was created among the employees to ensure high level of hygiene and sanitization within the premises and employees were thoroughly educated. The hotels had optimism towards overcoming the crisis and media also played an important role making the hotels withstand during the pandemic.

Yacoub and ElHajjar (2021) Identified the strategies adopted by hotels in developing countries to manage the pandemic. The authors argue that the hotels which failed during the pandemic were the ones which did not have preparedness for the crisis. The hotels that survived during the pandemic had taken a quick change in the strategies by foreseeing the crisis ahead. Those include becoming more transparent with the employees as they are in the frontline, delegating the power and authority, concentration on safety issues etc. More importance was given to domestic tourists rather than depending completely on international tourists. The hotels changed the stringent policy regarding booking and cancellation and made those policies customer friendly thereby giving more freedom to the customers to cancel the booking in worst circumstances. Many of the hotels initiated technology driven services by replacing human services.

The study conducted by Indra, S. R., & Damania, V. S. explored the changes in the standard operating procedures followed by star hotels in India. It was found that the management took initiatives for following the Covid protocols given by the government and ensured that every staff member of the hotel followed it with utmost care. The hotel authorities conducted frequent health checkups among the employees. Many of

the services which were rendered by the staff were replaced with technology to avoid human touch. Efforts were taken by hotel authorities to dispose of the waste and to make the guests secured.

According to Hussain and Kareem (2020), the guests in the hotel expect utmost transparency in the information provided by the authorities regarding the daily occupancy, guests with covid symptoms, facility for isolation etc. Few hotels in India focused on attending the customer's unique needs by considering the covid situation. This enhanced the word-of-mouth publicity. Some other hotels had a doctor on call to enhance the guest's confidence and to reduce their anxiety. The facility of in-room dining offered by the hotels was another strategy adopted by the hotels. Staffs were shifted from front office to service areas to cater the needs of guests immediately. Contactless delivery of food was also ensured. Many of the pre covid strategies were changed based on the feedback given by the guests.

1.2 Objectives

To study the marketing strategies of hotel industry pre and post Covid-19.

To understand the customers opinion in relation to the paradigm shift observed in the marketing strategies of hotel industry.

1.3 Statement of the Problem

This pandemic Covid-19 has triggered an economic crisis and its impact is seen in all the industries. The hotel industry faced a lot of changes due to this pandemic. Hotel industry had to think beyond to attract the customers, whose priority was health and safety, post covid. With this sudden shift in the minds of customers accompanied by lot of restrictions from the government, the hotel industry has been forced to change their marketing strategies to survive. Hence an Empirical study was conducted to analyze the customer's perception on paradigm change in marketing strategies of hotel industry.

1.4 Research Methodology

Primary data was collected through questionnaire and analyzed with suitable statistical tools.

Data was collected from 17 hotels (sample size).

Limitations of the study was restricted to Bengaluru city.

1.5 Marketing Strategies of Hotel Industry

The need for having the right hotel marketing strategies is difficult to decide but this is very important in optimizing the number of bookings, building brand awareness, and managing the reputation. There are some of the most important strategies which the hotel industry needs to always adopt, as well as some specific strategies to focus on during the pandemic Covid-19.

The marketing strategies most observed pre covid are online/ offline advertisement, seasonal packages, special discounts and offers, online personal relationships, customers

retaining management, regular customers considerations, special family packages, gift articles, complementary foods and beverages and transport facilities.

The hotel industry had to change the priorities of marketing strategies post covid as the preferences of the customer's changed and the importance of safety norms and health of the customers had to be considered as the main concern. The marketing strategies observed post covid are regaining customer confidence on hotels safety and hygiene standards, value added services and extended stay packages, audit of marketing assets, social media use, interview customers and employees, online reviews, digital marketing, and updates on Google.

1.6 Data Analysis and Interpretations

Present study conducted a survey among 17 hotels in the Bengaluru city to analyses the marketing strategies adopted by the hotels before the pandemic and after the pandemic. The survey pointed out that there is a paradigm change in the marketing strategies during the pre and post covid period. Figure 1 shows the major marketing strategies adopted by the hotels before the outbreak of Pandemic. The major marketing strategies were advertisement, seasonal packages, special packages, online personal relationships, customer retaining management, regular customer considerations, special family packages, gift articles, complementary food and beverages and transportation facilities.

From the Fig. 1 it is clear that during the pre-pandemic period the major marketing strategies adopted by the hotels were providing complimentary or gift articles, offering transportation facilities and maintain personal relationships. Priority was also given for family packages which attracted many customers. The hotel management constantly upgraded the customer retention policies and considerations were given to regular customers. Among the marketing strategies less priority was given to online or offline advertisement. The reason being most of the hotels had good network of regular customers. As such they did not go for heavy advertisements. The hotels tried to retain the
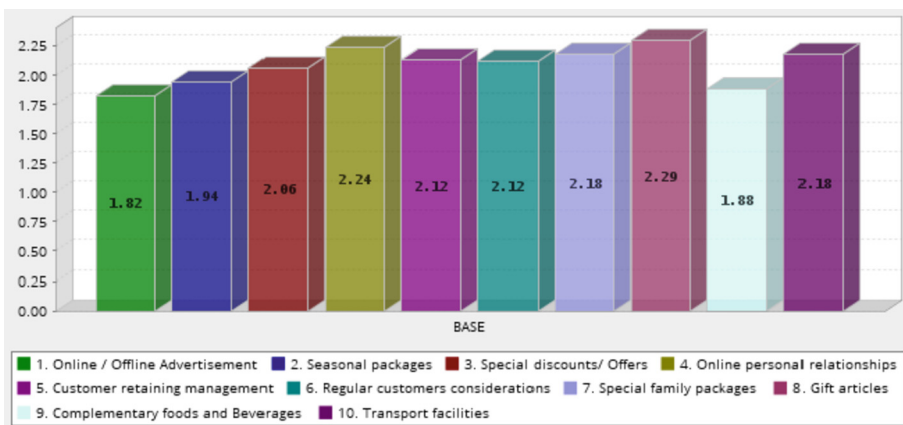
Fig. 1. Marketing strategy adopted to promote your business before Covid 19

existing customers by offering complimentary gifts, family packages etc. The responses expressed by the respondents are given in Table 1 (Fig. 2 and Table 2).

Table 1. Table showing responses towards Marketing strategy adopted to promote your business before Covid 19

Sl. No.	Particulars	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Online/Offline Advertisement	29.41%	58.82%	11.76%	0.00%	0.00%
2	Seasonal packages	11.76%	82.35%	5.88%	0.00%	0.00%
3	Special discounts/Offers	11.76%	70.59%	17.65%	0.00%	0.00%
4	Online personal relationships	23.53%	41.18%	23.53%	11.76%	0.00%
5	Customer retaining management	18.75%	56.25%	18.75%	6.25%	0.00%
6	Regular customers considerations	17.65%	52.94%	29.41%	0.00%	0.00%
7	Special family packages	23.53%	47.06%	17.65%	11.76%	0.00%
8	Gift articles	17.65%	52.94%	17.65%	5.88%	5.88%
9	Complementary foods and Beverages	23.53%	64.71%	11.76%	0.00%	0.00%
10	Transport facilities	23.53%	47.06%	23.53%	0.00%	5.88%

In the post pandemic period the hotels have changed their marketing strategies. During the post Covid period major marketing strategies adopted were regaining customer confidence, value added services, wide publicity through social media, auditing marketing assets, interviewing customers and employees to identify their expectations and importance was given more on online business promotion. As compared to pre pandemic period the emphasis was given more on online advertisements and regaining customer confidence. The detailed information is depicted in Fig. 1. From Fig. 1 it is evident that the hotel management has completely changed the marketing strategies in the post pandemic period. Offering gifts and complimentary products were no longer included in the top marketing strategy. This strategy was replaced with valued added services and extended packages. They have also concentrated on giving publicity through social media by highlighting the videos of customers. The major concern for the hotels were

Table 2. Table showing responses towards Marketing strategy adopted to promote your business after Covid 19

Sl. No.	Particulars	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Re-gaining consumer confidence on the hotel's safety/ hygiene standards	66.67%	22.22%	11.11%	0.00%	0.00%
2	Value-added services and extended stay packages	55.56%	27.78%	16.67%	0.00%	0.00%
3	Audit Your Marketing Assets	55.56%	22.22%	22.22%	0.00%	0.00%
4	Record Videos Today for Social Media Use in the Future	66.67%	11.11%	22.22%	0.00%	0.00%
5	Interview Customers and Employees	72.22%	16.67%	11.11%	0.00%	0.00%
6	Improve Your Online Reviews Strategy	77.78%	22.22%	0.00%	0.00%	0.00%
7	Evaluate and Enhance Your Digital Marketing	83.33%	16.67%	0.00%	0.00%	0.00%
8	Update Your Hotel's "Google My Business" for Customers	88.89%	11.11%	0.00%	0.00%	0.00%
9	Brand Photoshoot and Video	72.22%	22.22%	5.56%	0.00%	0.00%
10	Update Your Website	83.33%	5.56%	11.11%	0.00%	0.00%

to regain the confidence of the customers regarding the safety and hygiene in the hotels. Online promotion of business was not at all a key strategy in the pre pandemic period. But in the post pandemic period this strategy gained more attention. The hotels also give more promotion through various online platforms so that they can attract more customers to substitute the customers they lost during the pandemic. The hotels involved customers and employees while framing the marketing strategies to identify the expectations. Accordingly, the strategies were changed. Video shoots and photo shoots became a regular practice in all the hotels. And these photos and videos were used for their promotion. The opinion expressed by the respondents who participated in the survey are given in Table 1.
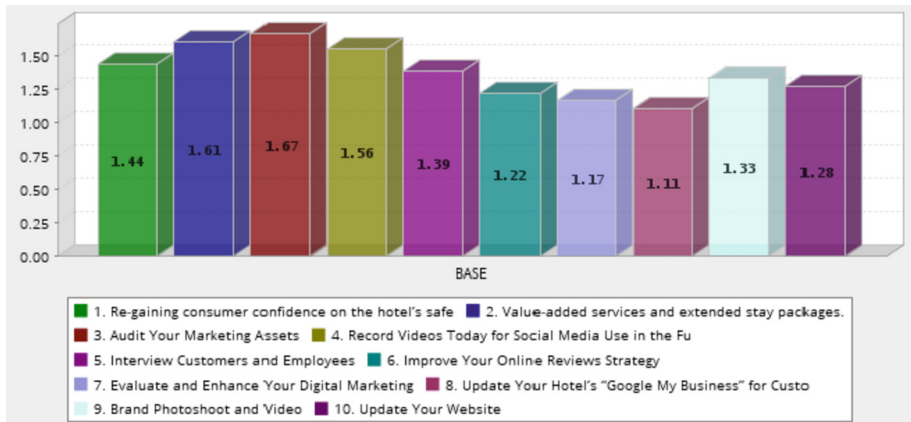
Fig. 2. Marketing strategy adopted to promote your business after Covid 19

1.7 Conclusion

Covid-19, pandemic is a harsh reality that cannot be ignored. It is true that this pandemic has disturbed the various sectors of the economy including the hotel industry. The survey pointed out that there is a paradigm change in the marketing strategies during the pre and post covid period of hotel industry. The major concern for the hotels were to regain the confidence of the customers with regard to the safety and hygiene in the hotels. Pre Covid, among the marketing strategies, less priority was given to online or offline advertisement. The reason being most of the hotels had good network of regular customers. As such they did not go for heavy advertisements. The hotels tried to retain the existing customers by offering complimentary gifts, family packages etc. During the post Covid period major marketing strategies adopted were regaining customer confidence, value added services, wide publicity through social media, auditing marketing assets, interviewing customers and employees to identify their expectations and importance was given more on online business promotion. The hotels involved customers and employees while framing the marketing strategies to identify the expectations, accordingly the strategies were changed.

1.8 Future Research

The aim of the present study is to focus on the marketing strategies of hotel industry in Bengaluru city, pre and post pandemic. Future research may be carried out by focusing travel facilitation, attractions and entertainment opportunities provided by the hotel industry in different parts of the country which could give more insights on the impact of pandemic on the hotel industry as they are an important player of the tourism sector.

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Technology Innovations for Business Growth – Impact of AI and Blockchain on Financial Services

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Abstract. Fintech and digitization of financial services have proven disruptive to the traditional practices followed by large incumbents. The overall pace of business and the competitive ecosystem has transformed to become more inclusive, customer-centric, agile, and cost-effective. Fintech has caused the digitization of economies and the use of Artificial Intelligence and Blockchain-based technologies have aided in improving financial efficiencies. The penetration of the internet and mobile telephones have been the key enablers of this technological change. Social media is bringing in huge quantities of structured and unstructured personal data which need to be adequately analyzed for business advantage. This paper aims to study the two most popular technologies, AI and Blockchain, that have been adopted in the Financial Services sector considered to provide solutions that are secure, efficient, fast and cheap. As software products, AI and Blockchain are different with distinct applications in the Financial Services sector. The findings indicate the positive impact digitization has had on Financial Services by improving its reach, variety, overall security, convenience, transparency at much lower costs than traditional offerings made by incumbent institutions.

Keywords: Financial Services · Digitization · Artificial Intelligence · Blockchain · Innovation · Customer experience

1 Introduction

Fintech comes from the amalgamation of 'finance' and 'technology' and is a term used to identify technologies that improvise the availability and access to financial services. It has proven to be a powerful disruptive innovation bringing diverse players into the global financial market. Technologies like the web, cloud services, mobile, machine learning, API's etc. have the potential to either develop new or change the existing business offerings, processes, models, and/or applications [6]. Fintech or Financial Technology or Digital Financial Services has been in existence for years but its use to provide widespread financial solutions received an impetus post the Global Financial Crisis of 2008. Fintech can be traced back to 1918 when Fedwire initiated the possibility of an

electronic fund transfer. Later, the Diners Card, exemplified the possibility of going cashless [1]. Then came the credit cards and ATM machines, setting up of NASDAQ in 1971 and SWIFT in 1973. The proliferation and efficacy of the internet combined with the launch of mobile networks and phones making cashless payments the way of the future [2].

Post 2008, there was widespread distrust in the traditional banking system causing rapid invasion of financial services by start-ups, e-commerce companies, social media enterprises and technology companies providing solutions either as a whole or in parts to both the financial organizations as well as individual customers. Their aim was to (a) provide transparency to customers anywhere, anytime, (b) bring financial solutions closer to the segments that were undesirable by incumbents and legacy institutions (people living in rural areas or small business owners looking for loans) and (c) to introduce existing financial solutions to new markets [5]. They brought in financial products at lowered costs with better returns. The most attractive feature is convenience; the convenience to access products, compare them with other similar products, the convenience of tracking ones' deposits and investments, the convenience of 24/7 access to all information regarding ones' accounts and reaching out to customer service for troubleshooting or grievances – all of this and much more than what they were receiving earlier from established financial institutions [3]. A major complaint from the customers of the financial markets has always been the lack of customized products.

To provide required services, financial institutions deal with several intermediaries in the processing chain and none amongst the chain would like to be exposed to liabilities and fraud of any kind. In case such an event occurs; the financial organization may attempt to recover from other customers through higher pricing. Such uncertainties create asymmetries in the market and make it impossible to tailor products to suit individual customer requirements (Feyen et al., 2021).

Technological innovations have been making their mark in different industries. Improved efficiencies, increased production, lesser errors etc. have been some of the outcomes that have resulted in cost reduction and gains for both manufacturers and customers. In the last decade, internet services and mobile networks have not only improved in terms of their services but also in their penetration of markets across the globe. As a result, customers have been getting accustomed to using services that are mobile-oriented, digital, and personalized. Besides the extensive availability of the internet and mobile phones, newer technologies that facilitate the digital transformation of financial services have also emerged. Coupled with the fact that traditional financial organizations found it difficult to react with the speed and efficacy owing to their risk-avoidance culture, bureaucratic decision-making process, firm financial regulations and rigid legacy systems, there was increased VC funding in smaller fintech businesses and entrepreneurial ventures that were capable of providing cost-effective solutions, faster and also reach the un-serviced markets to quickly build the economies of scale and scope [22].

Financial products and services have already undergone overwhelming transformations brought out through technological interventions. The wealth management, lending, payments, and stock markets have been re-shaped to a certain degree making financial services in many economies inclusive, diverse and customer centric. The aim of this paper is to focus on 2 technologies namely Artificial intelligence and Blockchain and to

study the impact these technologies have had on financial services in the developed as well as developing markets and their respective merits and demerits (Fig. 1).

Fig. 1. Fintech market size & forecast source: [25]

2   Technologies Applied to Financial Services

Technology application to financial services has brought about a plethora of products and services with heightened customer accessibilities, an innovative disruption of profound scope and scale. The Deloitte Report (2018) titled 'Five key technologies in Fintech' identify the following applications [15]:

1. Artificial Intelligence. AI delivers adaptive-predictive power to a financial institution. It also showcases to a certain degree independent learning which helps in identifying patterns, forecast outcomes that can be optimized, decision making through the application of rules and two-way communication with customers using the digital medium. AI allows businesses to transition from doing the same things better to doing the same things very differently [16].
2. Blockchain also known as Distributed Ledger technology is not one of the easiest to implement but has created keen interest amongst institutions as it can bring in high levels of transparency and security in transactions [13].
3. Internet of Things relies on capturing data from the smart devices of customers and the value chain aiding to anticipate customer needs and provide solutions accordingly. For example, based on a customers usage pattern of ATMs, the bank can decide whether to increase or decrease the number of ATMs available in the customers vicinity [18].
4. Security. As financial services are transforming into the digital form, the external threat of compromising a company's business data or a customer's personal data like address, credit card details, government ids are also increasing. To protect any form of a data breach, several technology-based solutions are being practiced like data encryption (using algorithms to encode data to an unreadable form), user authentication through biometrics and passwords and OTPs, secure hardware, and data back-up [14].

5. Cloud Computing. The usage of Cloud computing technology has brought in the concept of usage-based billing granting cost savings through reduced Capex on hardware and software. Higher efficiencies are achieved as the cloud service provider bears the responsibility of managing the data in terms of its security, downtime, fault recovery etc. The company can expand services using on-demand infrastructure and DevOps approaches. Additionally, cloud data analytics provides the much-required business and market intelligence for strategic planning of operations and marketing [24].

2.1 Artificial Intelligence

Artificial intelligence is a field of science that amalgamates computer science with psychology, knowledge of the language and several other areas that make a computer react or give outputs like what human intelligence would give. The father of Artificial Intelligence, Alan Turing describes it as "the science and engineering of making intelligent machines, especially intelligent computer programs". Therefore, artificial intelligence is a software-driven computer behavior exhibiting human intelligence. For this to be true, computers need to be able to sense and perceive a situation, reason out the right decision, must possess linguistic skills so that it communicates using natural language. An artificial intelligence system combines different data analysis tools and methods with machine learning to acquire Artificial intelligence capabilities [10]. Artificial intelligence system has 4 key characteristics:

1. Big data – the ability to process large amounts of data both structured and unstructured
2. Learning – it should be able to understand patterns within the data processed to provide feedback from its learning.
3. Reasoning – it should be able to reason and draw inferences from the inputs received.
4. Problem-solving – it should be able to analyze a situation and solve complex problems (*Ibid*)

Cognitive Analytics allows the computer system to acquire information from observations, learn, and finally communicate using Natural language processing. It helps the system analyze data, gain context, and make inferences and with constant learning, it can work seamlessly with unstructured data as well resulting in the improvement of the output over time. Therefore, when a customer poses a query for an insurance product, it can scan through all the relevant information available and return a result using voice, graphics, written material etc. [17].

Robotics is a subset of Artificial Intelligence wherein AI is used to operationalize applications involved with process automation. It is a combination of hardware/ mechanical parts with data and machine intelligence software to perform tasks. In Fintech, the use of chatbots and smart assistants is an outcome of this innovation (*Ibid*).

2.2 Blockchain

Blockchain is a shared ledger or a public ledger containing details of all transactions occurring between participating members and this information is shared amongst all of

them. The data is verified by consensus and once recorded, it can never be erased. It is a chain of blocks chronologically aligned like a page in a ledger. Monitory transactions that occur online between a client and a business or a customer and a service provider, moves through several intermediaries before the transaction is complete. Individuals use such payment services since they trust that their data would not get breached and the intermediaries involved have the requisite technology in place that would provide a safe and secure environment for transactions. However, data can be compromised by hacking attacks. Blockchain technology is based on the premise that all transactions are recorded and verified through distributed consensus without compromising any digital asset. Thus, distributed consensus and anonymity are the 2 vital characteristics of Blockchain technology. Being immutable, the data cannot be deleted, tampered with, and can be accessed by members who have permission to do so. In the event of an error, a rectifying transaction must be made and both transactions remain visible making Blockchain-based system extremely transparent [14].

Blockchain technology has been under controversy for a while because it can support transactions worth billions of dollars and yet, remain out of any government's scope or control. As a technology, it is superior and has several financial and non-financial applications. A recent innovation in Blockchain involves the use of "smart contracts". These are computer programs that execute payments automatically to relevant parties once a pre-agreed term of the contract is met, a feature being enthusiastically adopted by Banks [7].

For fintech companies, blockchain technology can take many forms. They can create a consortium of institutions that can securely share data with each other leading to a more diverse and broader dataset. They can also make private blockchains where all their data is stored on private networks with no single point of failure. The data integrity that blockchains bring to fintech companies can lead to the creation of purchase record verification systems. It is even used in certain power grids as a record-keeping mechanism daily. In the fintech world, this can be used to power micro-lending, secure insurances, and general financing mechanisms. In underdeveloped nations, blockchain can help the vast plethora of "unbanked" individuals gain safe access to financial instruments which cannot be provided to them by traditional banking [21].

3 Application of AI & Blockchain Technologies to Financial Services

AI and Blockchain are extremely important technological innovations that have several use cases in Fintech. Use of AI in FinTech is growing rapidly and its spectrum is wide. Globally, the value of AI in the FinTech sector was estimated at USD 7.91 billion in 2020, and it is expected to reach USD 26.67 billion by 2026. The sector is thus going to see a CAGR (Compound Annual Growth rate) of 23.17% over the forecast period – 2021 to 2026 [19].

3.1 Artificial Intelligence

Some of the currently popular deployments are [16]:

- for the user interface used during customer assistance,
- creating a set of parameters defining activities that are abnormal and thus possibly a fraud,
- understanding the customer's requirements to propose insurance products,
- analysis for wealth management,
- study of a portfolio of the customer to carry out a credit risk assessment and other similar decisions which till a few years back were made by different sets of specialists working in different teams.

It is predicted that by 2030, financial institutions will save up to 22% of operational costs by deploying AI-based solutions. AI creates an engaging environment for the customer and facilitates heightened acceptance of different products and services [11]. Use case of AI in banking is illustrated in the following cases [11, 12, 16]:

1. Improved security and flexibility to customers by involving key bio-metric elements like speech recognition, face recognition, finger-print recognition as opposed to alpha-numeric passwords, verified passwords, one-time passwords etc., that constantly face systematic and aggressive hacking and is very complicated for customers to remember multiple complex arrangements of characters.
2. Fraud detection through analysis of user's transaction behavior. A repetitive withdrawal or spend detected by the system away from the user's typical geographical location or abnormal by way of repetitiveness or amount, the AI-enabled server flags such transactions as fraud and disallows them.
3. Predictive information through AI. A user may have raised a query in the system for a list of debits of the previous month. AI logic can be programmed to analyze this query and predict if the user may have a similar future need and provide that information simultaneously causing one less query and time for the server.
4. Customers access to FAQs through Chatbots. By loading all relevant information, the customer can get answers which otherwise would take a lot of time and effort over a call or a visit to a branch. Banks can use their resources productively elsewhere.
5. Valuation of assets by using AI. By following processes and data points that a human advisor would refer to and with further addition of reference points, historical data and other predictive analysis, AI can provide good valuation advise and this information can be vetted by experts for decision making.

An offshoot of the Banking sector - Credit card companies have also deployed AI towards fraud detection and to reduce false positives. For example, an AI solution by Japanese FinTech company MILIZE Co. Ltd, built using the automated learning software of Spark Cognition detects fraudulent transactions with approximately 90% accuracy. This development can boost the profitability of credit card companies substantially [19].

Use case of Robo-advisors is a good example of the application of AI in Investing. AI can be used to develop financial planning services aiding investment decisions and portfolio management, without human intervention. These are called Robo-advisors. As per an estimate, by 2022, these Robo-advisors will handle more than USD 4 Trillion assets globally. Like a human wealth advisor, the Robo-advisor also analyses a whole set of data and factors in the information given by the customer regarding his goals,

retirement planning, expenses, liabilities etc. to arrive at plans [23]. Fraud detection is a use case of AI across all segments of FinTech sector. AI deployment is rapidly increasing for this function and delivering good results for the companies too. As per McAfee, cybercrime values at USD 600 Billion which is 0.8% of the global GDP (Mordor Intelligence 2021) (Fig. 2).
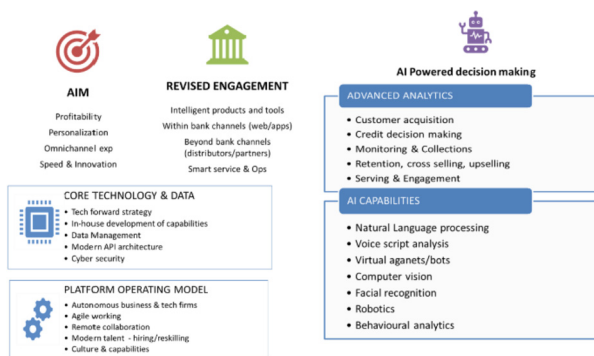
Fig. 2. AI first institution with enhanced customer centric capabilities source: McKinsey & Co., 2021

3.2 Blockchain

Blockchain technology has yielded cryptocurrencies which are today worth billions of dollars.

Bitcoin. Monitory transactions on the internet depend upon financial third parties to ensure that digital payments can be undertaken. There are issues of trust and mediation costs. These increase transaction costs which compels a minimum value for transactions. Nakamoto believed that the solution lay in an electronic payment system that provided cryptographic proof of transaction and all other interactions chronologically [20]. He delivered the concept of an electronic coin as a chain of digital signatures wherein the first owner passes on the coin after digitally signing off the previous transaction and hands over a key to the next owner. This way the chain of ownership gets registered and becomes verifiable at any future date. There may be a possibility of double-spending the coin, for which he proposed a peer-to-peer network. The network timestamps each transaction and forges a continuous chain of proof-of-work that creates an immutable record that remains unchanged forever.

It has a fixed supply schedule and as of November 2020, 85% of the gross amount of bitcoin ever to be available, has been mined. A number of products and services have been developed around the bitcoin-like wallets used for storing, exchanging and payment of bitcoins [9].

Ethereum. Ethereum is a global, open-source platform for 'smart contracts' which can transfer value from one address to another when certain pre-decided conditions are met.

Ether, a cryptocurrency is used to make payments of transaction fees for operating the network and keeping it secure. Its design is based on the bitcoin design with certain differences required to facilitate the services it provides. Ethereum is one the largest cryptocurrency developer ecosystem, currently employing around 200,000 developers across the world. In the 4 years spanning 2016 to 2020, the transactions on Ethereum have grown from 17,074 to 11,73,012 [9].

Global payments. The payment function globally is replete with possibilities of error. Large numbers of third-party intermediaries, varied currencies and several banks and financial institutions with respective methods and processes for handling money. Blockchain has simplified the process. The peer-to-peer computer network makes the process faster and immutable. A study conducted by Accenture in 2017 estimated that if all banks adopted Blockchain technology, then reconciliation and other infrastructure costs can be reduced by at least 30% valued at USD 8 bn and 12 bn. Companies such as Bitspark and Abra use blockchain technologies for making global remittances [4].

Insurance. Traditional methods of fraud detection in insurance claims are lengthy and few times not completely valid. Using Blockchain, the claim is routed through several miners, each agrees on eits validity and is then processed. This increases the confidence of the insuring company, and they can settle the valid claims with efficiency and in a short turnaround time (*Ibid*).

4   Findings & Conclusions

Modern finance depends on split-second decisions backed by data. Today's machines are capable of computing millions of instructions in nanoseconds but extracting information from data that can support these instructions is a completely different challenge. Financial institutions have petabytes of data that need to be passed into data processing pipelines for refinement. The parsed data are passed into AI networks to extract crucial nuggets of information. For instance, analyzing enormous amounts of data provides insights into market trends and predict which stocks/instruments are likely to gain in the long run or conversely, point out stocks that floor traders would short for immediate gains. ReCAPTCHA, a fraud prevention tool by Google is an example of AI models helping companies distinguish human users from bots for managing risk and fraud better. AI has also been successfully implemented in asset management, fraud identification, underwriting, banking, trading, chatbots and customer relationship management [8]. It is extremely beneficial; reduction of errors, enhanced quality, efficiency and productivity as an outcome of automation are a few of the merits of employing AI.

Blockchain is gaining popularity for streamlining transactions globally, especially in the banking sector. Another application, Peer to Peer lending or crowdfunding is gaining importance as it makes small size investments possible. API's allow financial products to be embedded into non-financial platforms thus increasing the reach, opening newer markets, and providing the possibility of customization of financial products and services. Data security is a concern that is getting solved using AI and Blockchain.

Technology has allowed an entire spectrum of customer experiences from low contact or self-service options to high tech designs.

Fintech is the future of financial services globally. While it may not wipe out all traditional incumbents but the transparency, ease of usage, diversified product portfolios, the split-second decision making, all this would ensure that it will gain popularity. This paper exemplifies that digital transformation and the use of AI and Blockchain is bringing out significant and economically viable changes in the financial market. Technology is facilitating the co-existence and collaboration of large multi-product institutions and niche start-ups to create an ecosystem of inclusion, customization, variety and reach to customers in all corners of the world.

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Unleashing Transformation in Travel Intentions During Post Covid: The New Normal

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Abstract. In many developing countries export earnings account for a large percentage of the country Gross Domestic Product (GDP), government revenues and expenditures and public investment. High dependency on a limited number of commodities for export increases the economy vulnerability to price fluctuations in the global markets. Not only instability in export earnings reduces the ability of the economy to finance development, but also increases uncertainty about future growth. Economic diversification underscores the importance of productivity growth to balance development and reduce dependency on international markets.

The new economy, driven by digital technologies could help developing countries diversify output and foster economic growth. Building capacity for digital development enhances the country capabilities to promote innovation, create knowledge and disseminate information. Digital networks increase communication as well as allow people, regions and nations to collaborate and share information aiming at fostering growth and sustaining development. For developing countries, external knowledge enhances the economy readiness to diversify output, create employment opportunities and improve global competitiveness.

1 Introduction

1.1 A Subsection Sample

The adverse effects of the fight against the Covid19 include shutdown of production activities, leading to severe economic and social impacts on a global scale (Bapuji et al., 2020).

In order to control the spread of the virus and flatten the curve, governments of different countries implemented several mitigation measures based on local governance, social and economic conditions. These strategies included closure of educational institutions and shopping malls, restricting public gatherings (social events), blocking movement between countries as well as cities, imposing weekend curfews, suspending public transportation and working from home. During the pandemic it was understood that travelling and gathering of people should be avoided so as to prevent the spread of the airborne Corona virus. One of the sectors which is the most reactive to economic crisis, political changes, natural disasters, health and safety issues (Cakar, 2020) is tourism.

Mogaji, 2020 and de Haas et al., 2020 found that the restrictions implemented during the pandemic can greatly affect people's lifestyles, social interactions, and economic conditions particularly, human travel and outdoor activities can be severely affected. Similarly, fear of infection and perceived risk can also affect travel behavior and choice of methods. The domestic tourism industry in India is geared up to revitalize the economy once the lockdown is lifted, the number of tourists is expected to increase (Mitra, 2020). As the tourism industry does the spadework for recovery as soon as travel restrictions are lifted, it is crucial to understand the travel intentions of the prospective Indian domestic travelers post COVID 19.

This study is very important in the current situation because it helps to facilitate the decisions needed to revive the tourism demand. The purpose of this study is to analyze the impact of perceived risk on the travel intentions of domestics travelers in India. The questionnaire was designed using Google Forms. It was distributed through email and social media channels using snowball sampling techniques to collect responses. 150 Responses were collected from people belonging to different industries to understand their preferences and perceptions related to risks involved in travel.

2   Literature Review

The study by Dandison Ukpabi et al. (2021) focused on the factors that influence visitors' intentions to utilise the COVID-19 contact tracing app. The goal of this study was to look at the factors that influence tourists' adoption of COVID-19 CTA in their destination. This finding parallels users' worries and emphasizes the importance of safeguards, regulations, and legacy resources in the adoption of travel intention.

Erisher Woyo (2021), the sustainability of using domestic tourism as a post- covid-19 recovery strategy in a distressed destination explains that establish the perceptions of domestic travellers and tourism managers on the sustainability of using domestic tourism as strategic responses to the impacts of coronavirus. This study employees a qualitative methodology to examine the perceptions of the demand and supply side regarding the recovery options for tourism post-pandemic. (the sustainability of using domestic tourism as a post-covid-19 recovery strategy in a distressed destination, Erisher Woyo (2021).

Mr Kristalina Georgieva, Managing Director of the International Monetary Fund (IMF), exactly pointed out that the cataclysm created by Coronavirus is "a disaster like no other". It has a crushing impact on global economy. Tourism is one of the main industry which posed unmanageable challenge around the world during COVID pandemic.

In the short period, the tourism moved to non-tourism (Gössling et al., 2020) from over tourism (Seraphin et al., 2018; Dodds and Butler, 2019). The United Nations World Tourism Organization (UNWTO) (2020) says that tourism is more affected sectors. Few Researchers have tried to assess the impact of COVID-19 on the tourism industry. In OECD's projected statistics exposed Among the available studies, OECD's (2020b) projected statistics report is saying that the tourism industry may decline post COVID-19. It will take time to regaining this tourism.

Industry. (WASD, Effect and impact of the coronavirus pandemic on tourism 2021).

Tourism is one of the most labour consuming sectors. Such a falloff for the industry will be putting millions of tourism jobs at risk, thereby frightening to roll back the growth made related to sustainable development goals (World tourism organisation 2020).

Gagan Deep Sharma (2021) exhibits the prominent keywords clustered into three groups. First, the research's focus area has been about the future of tourism, which is concerned about the future of tourism sector, specifically in reference to communities and the cause of sustainability. Second, this research introspects on the issues of resilience, mobility and sustainable tourism.

Thashneem T. Bhanu (2020), focussed that Corona virus has posed a threat to India and its economy. Due break the chain of spreading virus lockdown was imposed all over the nation which means an emergency protocol that presents people movement.Every industry had to undergo the financial crunch. The tourism and hospitality industry have been facing immense loss as a consequence of no foreign arrivals, no air travel, less demand and booking of hotel rooms. The social gatherings and meetings were prohibited which added up to the loss of revenue.

3   Research Methodology

This research is conducted based on descriptive study which describes the current pandemic situation using quantitative method. For the study purpose a simple random sampling method was adopted to select the respondents. Data were collected using survey method by circulating questions using google form in the online social forum such as whatsapp, facebook, twiter etc., because collecting questionnaire through interview method is not possible in this pandemic situation, people are stay at home and have to follow social distancing etc. Total of 254 respondents were given their opinion through this online survey.

3.1   Data Collection Tool

A well-structured questionnaire was circulated through google form is the tool used for collecting research tool. The questionnaire consists of two section, first section contains the demographic profile of the respondents and the second section introspects on people's behavior and intention to go for a trip during post covid-the "Next normal".

3.2   Factors Affecting Travel Behavior of Tourist During Next Normal

The following factors were considered in this research to find out their influence on the tourist behavior:

- **Travel Anxiety cues:** The travel anxiety refers to fear of visiting new places, stress of travel plans which makes people anxious or depressed (Mclntyre-1998, Gudykunst -1988, Reisnger -2005). This includes the following:

  o Somatic factor: Such as tend to be restless, shortness of breath etc. (Mclntyre-1998, Suci Sandi Wachyuni-2020)

- o Psychological factor: Sign of doubt, fear, irritability and depersonalization (Suci Sandi Wachyuni-2020)
- o Physical factor: Such as cold skin, excessive sweating, diaphoresis etc. (Reisnger-2005 and Suci Sandi Wachyuni-2020)

- **Behavioral cues:** This refers to perceivable vocal behavior, interpersonal relationships that signals the change in behavior. It includes the following:

  - o Subjective related factor: Individual's beliefs towards the object of attitudes association with individuals (Ramdhani N-2011)
  - o Control behavior factor: Individual's perception of the ease of doing something (Ajzen I-2005)
  - o Attitude towards trip: Displays the positive or negative assessment of behavior (Ramdhani N- 2011, Mclnyre,1998)

- **Travel Intention**: This refers to the probability if a customer will take or not take up certain actions in relation to tourism related services. These include the following:

  - o Travel destination Decision: process of selecting a destination for travel and factors influencing it.
  - o Travel period: It refers to time duration of the travel.
  - o Travel Mode: The transportation mode available for travelling to a particular destination.

- **Next Normal**: This term refers to the post covid period that is next to new normal period (McKinsey Global Institute).

These questions were used to find out the influence of tourist's behavior about their trip plan. Data were collected during the month of May 2021 to June 2021, where the Lockdown were announced to open completely in the coming month. The questions can be rated on a 5 point Likert rating between storing disagree to strongly agree, based on the respondent's perception and their own opinion. The validity test was conducted and the Cronbach alpha value was 0.785 which is more than the accepted value of > 0.60 (Ghozali, 2007).

3.3 Objective of the Study

- To find out the attitude of the respondents with respect to "Planning to go for a trip during Next normal"
- The reason for not planning for a trip during next normal situation
- The factors motivating them to planning for a trip during next normal situation

3.4 Hypothesis

H1: There is a significance influence of travel Anxiety on travel intention during next normal.

H2: There is a significance influence of behavior cues on travel intention during next normal

Based on the hypothesis the following conceptual framework is developed and tested using structural equation modelling with the help of AMOS (Fig. 1).
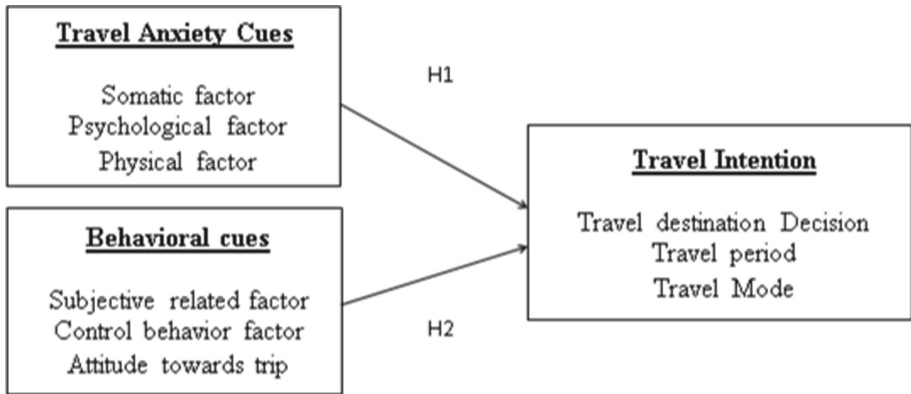
Fig. 1. Travel intention after Covid-19, next normal

4   Data Analysis and Discussion

This research questionnaire were created using google form and circulated using various social media. Those collected data were coded and tested using SPSS and AMOS. The data were analysed in two sections.

4.1   Section I – Demographic Analysis

The first section is consists of respondents profile and descriptive ananlysis. The following table expresses the descriptive results of the respondents (Table 1),

The total number of respondents who filled the form regarding this research was 255 from various states of India (Kerala, Delhi, Rajasthan, Karnataka and Tamil Nadu). Out of 255 respondents the survey was dominated by Female as they were 52% participated in this survey. The age of the respondents were more between 36 year to 45 years (40%), followed by 26–35 years at (28%) and least are above 45 years at 15%. Next with respect to their work industry profile, IT industry people were dominated with 37%, followed by Academicians who were 32% participated in this survey.

Table 1. Demographic profile of the respondents

Demography data	Group	Percentile
Gender	Male	38
	Female	52
Age (in years)	Less than 26	17
	26 to 35	28
	36 to 45	40
	Above 45	15
Working for the industry	IT	37
	Academic institutions	32
	Real estate	09
	Hotel/Travels	10
	Others	12
Annual income	Below 3 lakhs	35
	3 lakhs to 6 lakhs	20
	Above 6 lakhs to 9 lakhs	19
	Above 9 Lakhs to 12 lakhs	08
	Above 12 laksh	18

4.2 Section II – Trip During Next Normal

This session consists of various analysis of respondents views with respect to travel plan after pandemic ie next normal situation (Table 2).

Table 2. Trip plan during next normal

Particulars	Options	Percentile
Do you intend to travel as soon as pandemic gets over	Yes	66
	No	33
	May be	01
I don't want to travel after Pandemic gets over	Because I am afraid to go out in public	43
	Because I will be travelling with tension and panic	30
	As I am not financially strong now	15
	Because my family won't allow me to travel	12

Respondents were questioned that whether they are ready to travel or make a trip after pandemic situation, 66 percentile people were dominated the respondents among people who opted not ready to go out (33%) and may be travel (1%). The respondents who were not interested to travel were asked the reason for not opting this option were, most of them are afraid of going out or moving with public at 43% and followed by 30% of them felt that even if they travel they will be in high tension and panic situation. Least

of them are financial not strong (15%) and their family members are not allowing them to travel (13%) after the pandemic situation.

4.3 Section III – Travel Intention

Respondents who were interested to travel during the next normal situation were given their opinion about their travel plan. This session of analysis includes the reason for their trip and their intention towards the trip were analyzed using structural equation modelling. There are two hypothesis were framed and tested, the following table shows the goodness of the model fit. The determinants of goodness fit indices are above the accepted yardstick which expressed that the model constructs are fit as per the recommended standards (Table 3).

Table 3. Model fit indices

Model fit indices	Recommended parameters	Goodness of fit the model
X2/DF	< 3.0	2.194
IFI	> 0.9	0.962
NFI	> 0.9	0.943
CFI	> 0.9	0.942
GFI	> 0.8	0.925
AGFI	> 0.8	0.898
RMSEA	< 0.08	0.053

Further, the following table shows the standardized and unstandardized estimates of the proposed model, which signifies the relationship among independent and dependent variables and significance between observed variables (Table 4).

Table 4. Regression weights

Dependent variable		Independent variable	Standardized estimate	S.E.	C.R.	P
Travel intention (TI)	< ---	Travel anxiety cues (TAC)	0.99	1.783	2.214	0.027
Travel intention (TI)	< ---	Behavioral cues (BC)	0.62	1.267	1.154	0.020

The above figure shows the structural equation of this research model and reveals the relationship between the dependent and independent variables.

Hypothesis I – Travel Anxiety Cues: As per the hypotheses I, Travel anxiety cues of the respondents has a significant influence on their travel intention after the COVID and isolating situation with p value less than 0.05. Anxiety cues such as Somatic factor, Psychological factor and Physical factor influences the respondents to make trip after the Pandemic. The proposed path coefficient Travel anxiety cues and Travel Intention engagement (TAC → TI) for standardized estimates accounted for 0.99. Hence the null hypothesis is rejected and alternative hypothesis is accepted. Before are so anxiety towards their trip.

Hypothesis I – Behavioural Cues: As per the hypotheses II, respondents behavioural cues has a significant influence on travel intention after the COVID and isolating situation with p value less than 0.05. Behavioural cues such as Subjective related factor, Control behavior factor and Attitude towards trip are influence the respondents to make trip after the Pandemic. The proposed path coefficient behavioural cues and Travel Intention engagement (BC → TI) for standardized estimates accounted for 0.62. Hence the null hypothesis is rejected and alternative hypothesis is accepted (Fig. 2).
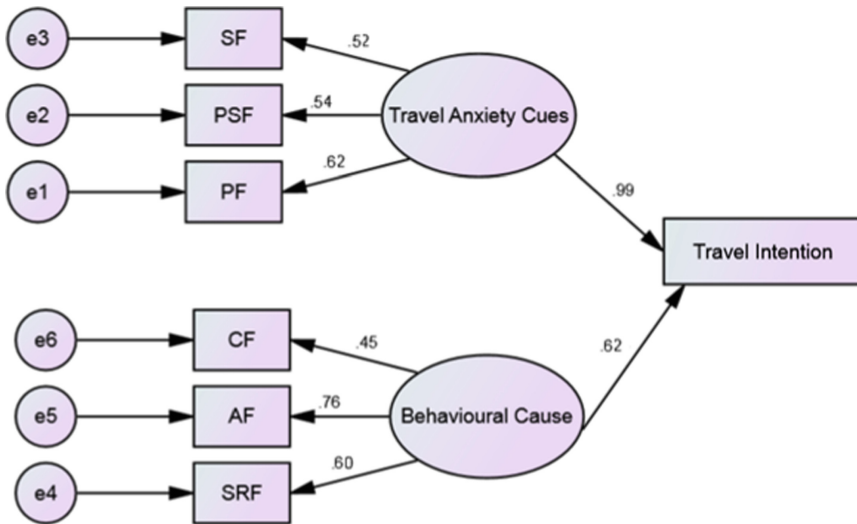
Fig. 2. Structural equation model of travel intention after Covid-19, next normal

5   Conclusion

This study includes the empirical factors of tourist behavior during next normal situations that when people move on to a life post pandemic and get accustomed to it. Based on this research, people have become restless and frustrated since they had been sitting idle for prolonged time period during corona pandemic. People have a strong intention to travel but the fear of corona virus holds them back. The people who were working from

home have drained out due to extended working hours. People are looking forward to a weeklong trip after this situation to rejuvenate themselves. At the same time people are aware about the precautions to be taken care of related to safety aspects, cleanliness and hygiene aspects. Several people are looking forward to reunite with their family members and friends with whom they could not keep in touch due to the government imposed restrictions. The tourist destinations need to be very careful as they open up to welcome tourist and travelers. They need to bring forward services while keeping in mind the purpose of travel of the people. This study has limitations as it shows only estimate of future tourist behavior belonging to a few industries in selected states. Further research analysis can be carried out on typology of the tourists, trends in destination management strategies. Future research may consider incorporating further constructs to enrich the model. As face to face interviews were not possible, sample size was small. The future researchers can increase sample size to increase the representativeness of the study.

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Gender Dimension of the European Union's Communication Ecology Problems in High-Technology Sectors

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Abstract. The article sheds light on the representation of women in the EU STEM education in 2021 in general and information and communication technologies education in particular via the lenses of analysis of social prejudices and negative communication practices. Modern social priorities substantiate the special focus on the communicative environment. Stereotypical approaches to a women's place in the EU society significantly affect their involvement in STEM. The authors suggest that relatively low participation of women in this area is due to educational prejudices. The influence of stereotypes about the weak potential of women in STEM leads to the refusal of girls and their parents to choose this profile in education. The article discloses problems connected with female involvement in the STEM education using quantitative indicators, the study of environmental principles of communication including social experience, empathetic behavior and emotional intelligence.

Keywords: Communication ecology · European union · Gender communication · Gender equality · Gender gap · Information and communication technologies · Social priorities · STEM

1 Introduction

Gender relations are constructs of social culture and at the same time the basis for the development of social culture itself. Gender is constructed through a system of socialization, division of labor and the establishment of cultural norms, roles and stereotypes in different societies, so it is a result of a person's socialization. Gender communication policies are designed to improve understanding of gender equality, the benefits of both sexes and public relations, to overcome prejudice, gender stereotypes and sexism.

Modern trends in the study of gender are based on the separation of psychological features of communication for each sex. The next step is to integrate certain qualities into communication regardless of gender. Communicative practices of both sexes have the same qualities, but to a greater or lesser extent. The psychology of communication aims

at forming a harmonious model of behavior which includes both traditionally "female" and "male" communication skills.

Despite such approaches in the formation of communicative practices, they still remain pure recommendations, and their active implementation is possible only with a purposeful policy of involving women in various spheres of life. It is the only way to apply harmonious models in business communication. After all, the formation of practices for communicative adaptation is possible only in the process of constant active cooperation among females and males.

The purpose of the article is to disclose the gender gap in the EU STEM education and identify communication strategies to foster female empowerment in high technology sectors.

The article consists of literature review, methodology, results of the study, conclusions, and references.

2 Literature Review

There is an extensive body of literature revealing different aspects of gender equality and female empowerment, including their peculiarities in different sectors of economy and groups of countries. For example, Vinska and Tokar in their research of correlation between female economic participation and GDP per Capita in the EU member-states have proved that there is no statistical significance between these two parameters and highlighted that economic empowerment itself without political, social and educational dimensions of gender equality is not enough for economic progress [28]. However, when comparing the level of gender equality (more profound index including not only economic dimension) and economic development in the EU member-states identifying groups of countries and clusters according to these two factors, these authors have found out that there are no gender equality laggards in the EU and absolutely all more developed countries (with GDP per capita above 90% of the EU average) are gender equality leaders [27].

Gender means "a set of social and cultural norms that society ascribes to people depending on their biological sex. Not biological sex, but socio-cultural norms determine, as a consequence, psychological qualities, patterns of behavior, activities, professions of women and men [17]. Gender equality includes the freedom to develop one's abilities regardless of gender stereotypes. However, gender equality is seen as the adoption of sexual characteristics with due respect for them.

Considering a modern stage of economic development which is highly based on automation and robotizing, we assume that for economic emancipation of women education in STEM plays a crucial role. Aksoy et al. [2] have discovered that innovations and technology have increased the gender pay gap in 20 analyzed European states, because while providing high salaries to both men and women the gender composition of work force in STEM shows significant prevalence of men, thus they profit more from technological progress. Portalatin J. [21] considers that technological development poses a more serious risk for women than for men when it comes to job market disruptions and their consequences for employment of both genders. Considering the above mentioned, female students' fear failure more than male ones and this personal perception prevents

them from taking STEM courses which deprives them of getting highly competitive but well-paid positions in STEM sphere thereafter as proved by Borgonovi and Han [5]. Females have particular anxiety of STEM fields because they face negative gender stereotypes in mathematics, as a result, it undermines their performance in this field as proved by Wu et al. [31].

However, nobody can tell that women are less talented than men in STEM, Abuwatfa et al. [1] showed that that the lack of women in STEM sectors is caused by social and cultural factors, mainly discriminative ones, they are the reason why so many women leave this sphere. However, the artificial intelligence could help to overcome this problem by measuring the diversity levels and taking actions to provide inclusion for women in STEM. Keune et al. [14] unveiled the role of recognition in STEM learning and further career, that's why honoring female expertise in this field stimulates their decision to stay in STEM. The notion of women's low expectation in STEM field is substantiated by Robnett et al. [22] using cluster analysis to define subgroups of women in STEM based on the interplay of female STEM success expectation and their academic experience. The findings stated that those women who doubted in their STEM achievement had lower level of peer support, STEM identity and STEM value. DiCosmo et al. [9] highlighted importance of workshops to attract more women into traditionally dominated STEM spheres, they underline that early exposure of women to STEM increases their interest in this sphere. Thus, it is vitally important to celebrate specific holidays, e.g. Ada Lovelace Day, which is basically an annual celebration of Women in STEM, as it draws more attention to this field among women and serves as a recognition of women who made a successful career in this sphere [6]. However, we should keep in mind that there is an opposition to this new trend of bringing more women to STEM as described by Danbold et al. [8], there are men who are concerned by growing representation of women in this field as they see males as STEM prototype. Acknowledging that some initiatives to attract women to this sphere were successful, they started to oppose this process, wanting women to conform to traditional norms of this field by expressing exclusion patterns towards women in STEM. Authors advice to enhance diversity programs to mitigate this phenomenon.

We should also highlight a research by Appleby et al. [3] exploring women's identities in the field of STEM, namely they focus on groups of early career females who search jobs in this sphere and prove that organizational image as a place promoting diversity plays an important role for them.

Jiang [13] uses extended Roy Model to study determinants of the gender gaps namely in the dimension of STEM and non-STEM education and job choices in this sphere. It is partly explained by education in mathematics that is very intensive in STEM field, but also by female personal choice of better work-life balance. Sassler et al. [23] used regression decomposing to indicate that marriage and family expectations work differently for males and females. However, they prove that the lack of women in STEM jobs is mainly caused by their low representation in computing and engineering sciences.

We should consider job environment in STEM sphere, e.g. Saxena et al. [24] provided empirical and non-empirical research proving that females working in the field of STEM face incivility at the workplace more than men do. It causes much higher level of stress

among women working in this sphere and higher turnover intentions. They provide specific practices to deal with this kind of incivilities to retain females in STEM by creating more positive working environment. Thus, to draw women into STEM field governments should use a wide range of measures that aim at diminishing barriers to women as well as supporting them in STEM education and career. Beeler et al. [4] benchmarked different institutional efforts to draw more women to this field based on Institutional Report Card for Gender Equality which evaluated the success of individual organizations on fulfilling their commitment to provide gender equality by quantitative and qualitative data on leaking pipeline of women in science. Shaw et al. [25] concentrated on institutional transformation to draw more women to STEM, they took data from surveys, conversations and interviews to understand the systems of oppression and their effects, particularly on the example of Oregon State University, they applied modern concepts of intersectionality and microaggressions to investigate specific institutional hierarchies and make necessary changes to hiring practices, promotion, retention, and institutional culture to create an inclusive environment for women in STEM. When attracting more women in STEM, it is important to promote their leadership there and avoid the issue of glass ceiling. We should not disregard a problem of glass cliff for women in STEM as described by Krishnan et al. [16], namely, women lose leadership positions in STEM easier than men in case of a single mistake. Notwithstanding that they prove the presence of a subtle rather than overt glass cliff effect in this field, it still should be overcome to create a ready fair working environment for all genders.

Gender aspects of communication are determined by most researchers based on the psychology of men and women, determining the difference between communication, attitudes in general, according to the average perception of women and men and at the same time forming this average perception. The Italian psychologist, Montuori [20] highlights, among other features, the ability of men for STEM, greater assertiveness in achieving the goal, which affects the positive business image of men. At the same time, women, according to psychologists, are not prone to STEM, less assertive, distract attention for the care of others' interests. However, the tendency to create partnerships is more typical of women.

This traditional approach is rooted in public international practice and significantly affects the formation of social attitudes in various spheres of life. Weininger's work "Sex and Character" had a significant influence on the formation of social attitudes towards women. "A woman is deprived of the originality of consciousness. The latter she borrows from her husband. She lives unconsciously, the man – consciously… And even the most intelligent women cannot be compared with male genius" [31, p. 108]. The feminist movements and gender research in the 21st century have somewhat changed the way men and women perceive each other in terms of their relationship.

Hofstede argues that individuals have "mental programs" formed by a certain culture at the level of early childhood, school, work organizations and which are expressions of national culture. The researcher believes that ethnic differences are the most striking and can be used to differentiate people from various countries. He surveyed 50 countries and developed five basic dimensions by which cultures are classified. Among the cultural dimensions of a particular ethnic group, Hofstede distinguished the predominance of femininity or muscularity as a criterion for determining ethnic characteristics. He defines

the strong division of gender roles as masculinity, and the weak division of gender roles as femininity. Courageous values dominate in courageous societies – activity, efficiency, self-sufficiency, sympathy for success. Women's societies are dominated by women's values – modesty, the dominance of human relations over money, protection of the weak, sympathy for losers [12].

The study of gender discourse is considered today to be one of the priorities in the language science. According to Lakoff [18] and Tannen [26], the speech of men and women are two relatively autonomous systems that differ greatly from each other. Among the gender-specific features of speech behavior, it is noted, of course, that "men are mostly direct, and women prefer indirect expressions" [28, p. 41]. A study of gender-based accusations (on the example of German-speaking culture) found that men are prosecuted much more often than women (65% and 35%, respectively), and address it to their members more often than women 46% and 19% respectively [15].

Malakhov considers that the culture of dialogue, in particular, is one of the fundamental human values, reinforced by established practices [19].

Considering the above-mentioned discourse, this article focuses on the study of environmental practices in communication based on the analysis of women's representation in the EU high-tech education.

3   Methodology

Our article combines traditional linguistic analysis and strict statistical methods of calculating average. We classify the EU member-states using the EU NUTS approach distinguishing 3 types of regions, namely more developed, transition and less developed ones [11]. Basing on the fundamentals of the above-mentioned classification, embracing abstract logic, analysis and synthesis, philological comparability, we enhance it to form groups the EU member-states regarding their level of gender equality in terms of STEM education attainment, as well as information and communication technologies attainment. We consider them gender equality leaders if the level of female attainment is more than 90% of the EU average; gender equality adopters when this figure ranges between 75% to 90% of the EU average; gender equality laggards when female attainment is below 75% of the EU average. The female STEM education attainment means percentage of female students engaged in this sector out of the total amount of female students enrolled in all spheres of education. Female to male attainment ratio of the STEM education attainment stands for the ratio of percentage of females and males studying in this sector out of the total amount of students enrolled in all spheres of education, for each gender separately. Information and communication technologies female attainment and female to male ratio reflects the situation with information and communication technologies sector, analogically to the STEM one.

4   The Results of the Study

Studies of the communicative features of gender are quite popular today. They are characterized by a cultural dimension that meets certain standards. Understanding the culture of communication in general and the culture of communication as its component in the

form of a superstructure consisting of purpose, practice and emotional background, can be described as an ecological direction of communication based on the principles of respect, actualization and emotional intelligence. Ecological communication can be determined as a conscious communication on the following principles: delicacy, which includes the practice of empathy; self-esteem and partnership, enshrined in communicative practices; awareness of personal boundaries - their own and partner; emotional intelligence, or emotional maturity, which is the ability to control emotions rather than create tension; desire to develop communication; ability to listen.

The gender aspect of communication ecology includes tolerance, which implies empathy and social sensitivity; respect for the chosen social role; acceptance of gender characteristics. The cultural background for the formation of environmental attitudes to gender is overcoming stereotypes, redefining social roles or their actualization.

As already mentioned, according to the traditional notion formed by the system of historically concluded social landmarks, the understanding of women in the field of high technology contradicts modernity. On the one hand, access to education regardless of gender should lead to a significant number of women in high technology; redefining the social role of women as an active subject of economic relations, a woman's desire for financial freedom determines her involvement in high-paying sectors of the economy. On the other hand, we witness social stereotypes, non-recognition of sexual characteristics, lack of respect for physiologically determined social roles.

In the high-tech sectors, women are far behind men. These sectors traditionally have higher wages for workers, so men are very attracted to this area. We can say that this area has acquired signs of masculinity. This is primarily due to a persistent gender stereotype, which significantly reduces women's ability to STEM. However, not all areas of STEM show the same representation of women. We notice larger gender gaps in computer science, engineering and physics than in biology, chemistry and mathematics [7].

Table 1 indicates that the average STEM education female attainment in 2021 was 13.81. It means that there were 17 gender equality leaders, 4 gender equality adopters (Finland, Lithuania, Hungary, and Slovakia), and 6 gender equality laggards (Malta, Latvia, Luxembourg, Cyprus, Netherlands, and Belgium). If we consider female to male ratio, there were 21 leaders, 2 adopters (Hungary and Austria), and 4 laggards (Latvia, Lithuania, Finland, and Belgium).

STEM representation among women is insignificant, according to statistics. Some countries have higher than average rates. EU member-states recognize that women have no parity in this area. At the same time, the community's attention to these statistics is needed, as the fourth industrial revolution should not leave stereotypical gender prejudices. Analysis of the place of women in high technology shows that this issue not only highlights the place of women in it, but also shows the extent to which individual countries pursue policies of gender equality, create material conditions, develop gender communication. It is necessary to create favorable conditions for women in the field of high technology and to overcome significant prejudices in national and individual cultures. It is possible only through communication mechanisms that will help recognize the problem. Recognizing the problem of gender gaps in opportunities is the first task and an important factor in shaping the directions of achieving equality in results.

Table 1. STEM education female attainment in EU member-states in 2021, %

Country	Female Attainment, %	Country	Female to male attainment ratio
Romania	20,25	Romania	0,5
Greece	20,22	Greece	0,48
Germany	19,16	Italy	0,46
Portugal	18,97	Portugal	0,44
Croatia	17,63	Croatia	0,43
Estonia	17,54	Poland	0,41
Italy	15,72	Denmark	0,4
Sweden	15,68	Bulgaria	0,38
Poland	15,25	Ireland	0,38
France	14,49	Estonia	0,36
Slovenia	14,46	France	0,36
Austria	14,29	Germany	0,36
Ireland	14,1	Republic of Cyprus	0,35
Czech Republic	13,86	Czech Republic	0,35
Denmark	12,75	Luxembourg	0,35
Bulgaria	12,46	Spain	0,33
Spain	12,44	Sweden	0,33
Finland	12,39	Malta	0,32
Lithuania	12,3	Netherlands	0,32
Hungary	12,17	Slovakia	0,32
Slovakia	11,91	Slovenia	0,32
Malta	10,31	Hungary	0,3
Latvia	10,24	Austria	0,29
Luxembourg	9,53	Latvia	0,26
Republic of Cyprus	8,95	Lithuania	0,26
Netherlands	8,68	Finland	0,25
Belgium	7,23	Belgium	0,24
Average, %	13,81	Average, %	0,35
90% of Average	12,43	90% of Average	0,32
75% of Average	10,36	75% of Average	0,27

Source: authors' own calculations and compilation based on [30]

There is a growing support for the idea that only with equal gender representation, interaction of different aspirations, goals, ways to achieve communication it is possible to ensure the harmonious development of business relations. The development of technology requires different views on their effectiveness and rationale. Gender diversity in the field of high technology will contribute to the diversification of the workforce, which will create conditions for productivity growth. However, we cannot deny that there is a difference between male and female physiological and mental characteristics. Views on the same technology through the prism of male and female assessment categories are important for the whole system of technology development, production and modernization. The discoveries made by women in the field of high technology show the demand for this segment and practicality, while determining the "female" direction.

It is not difficult to see this as gender discrimination in assessing the importance of women's and men's work under the same conditions. On the one hand, it reduces women's motivation, and, on the other hand, shows the power of male stereotypes and unwillingness to recognize women's equality. Therefore, overcoming discrimination in remuneration is an important environmental factor for the development of inclusive business culture.

One of the reasons for the low representation of women in high technology is education. Education is accessible to all in theory, but the education system is in its own way subject to gender stereotypes. Parents, as representatives of previous generations, can significantly influence their children's ability to obtain the level and profile of education. Their bias and gender stereotypes affect their child's involvement in a particular profile at a certain level of education.

Schools of all ages give children the opportunity to choose one or another profile in their studies. Parents can choose a profile for a child in the secondary education system. Due to this, there may be a negative impact of gender bias on education. For example, considering the possibility of such an impact in those countries that are presented in Table 1. Let's analyze the conditions for choosing the profile in those countries that lead the table on women's achievement in STEM, and in those that complete the table. We will highlight to what age the secondary school of a certain country permits choosing a profile arbitrarily, and all subjects are studied equally by both sexes. The total duration of compulsory education without profile distribution is given in parentheses.

Romania – up to 14 years (8 years).

Greece – up to 15 years (9 years).

Germany – up to 16 - 17 years (10 years).

Portugal – up to 15 years (9 years); it is obligatory to pass an exam in mathematics between cycles.

Netherlands – up to 11 - 12 years (8 years).

Belgium – up to 12 years (6 years), then there is an opportunity to differentiate education or choose a specialized school.

Thus, the profile of the school, on the one hand, creates an opportunity to choose a specialty by ability, on the other hand, may be under pressure from gender bias. As we can see, even in matters of education, it is important not only to provide opportunities, but also to understand threats arising from the peculiarities of the perception and strength of cultural stereotypes. After all, the early involvement of girls in STEM creates a positive

result in the achievements of women in high technology. And the presence of profile in the early stages of learning reduces this possibility.

Table 2 shows that the average information and communication technologies female attainment in 2021 was 1.82. There were 13 gender equality leaders, no gender equality adopters (Finland, Lithuania, Hungary, and Slovakia), and 14 gender equality laggards (Cyprus, Hungary, Czech Republic, Poland, Austria, Spain, France, Slovenia, Lithuania, Netherlands, Slovakia, and Portugal). If we consider female to male ratio, there were 10 leaders, 9 adopters (Croatia, Finland, Latvia, Malta, France, Portugal, Austria, Italy, and Poland), and 8 laggards (Hungary, Lithuania, Netherlands, Czech Republic, Spain, Slovenia, Slovakia, and Belgium).

Information and communication technologies are the areas that show the least representation of women in it. The situation with IT education in most of the countries represented is about the same and demonstrates that it is not necessary during the study. Mostly introductory courses are provided for students. Obtaining another profession takes a lot of time, and this raises concerns among both the girls and their parents about the appropriateness of such education. The barrier could be the fact that a woman may give birth to a child and be on parental leave or work combining it with caring for an

Table 2. Information and communication technologies female attainment in EU Member-states in 2021, %

Country	Female attainment, %	Country	Female to male attainment ratio
Romania	10,95	Bulgaria	0,41
Estonia	3,41	Greece	0,4
Ireland	2,8	Romania	0,39
Bulgaria	2,39	Sweden	0,26
Malta	2,31	Denmark	0,24
Luxembourg	2,18	Estonia	0,24
Finland	2,17	Ireland	0,24
Sweden	2,08	Germany	0,23
Denmark	2,03	Luxembourg	0,23
Croatia	1,94	Republic of Cyprus	0,22
Germany	1,78	Croatia	0,18
Greece	1,77	Finland	0,17
Latvia	1,77	Latvia	0,17
Republic of Cyprus	1,21	Malta	0,16
Hungary	1,19	France	0,15
Czech Republic	1,16	Portugal	0,15
Poland	1,15	Austria	0,14

(*continued*)

Table 2. (*continued*)

Country	Female attainment, %	Country	Female to male attainment ratio
Austria	1,05	Italy	0,14
Spain	0,92	Poland	0,14
France	0,89	Hungary	0,13
Slovenia	0,84	Lithuania	0,13
Lithuania	0,75	Netherlands	0,13
Netherlands	0,65	Czech Republic	0,12
Slovakia	0,65	Spain	0,12
Portugal	0,58	Slovenia	0,1
Belgium	0,31	Slovakia	0,08
Italy	0,28	Belgium	0,07
Average, %	1,82	Average, %	0,19
90% of Average	1,64	90% of Average	0,17
75% of Average	1,37	75% of Average	0,14

Source: authors' own calculations and compilation based on [30]

infant, unable to fully master a virtually new profession. Mastering a new profession in such conditions is too difficult, especially when society is not ready for it: men's stereotypes about women's involvement in high-paying professions, as well as women's fears about the under-representation of women in this segment and possible misunderstandings in the team. The time gap in mastering the profession and acquiring practical skills will negatively affect a woman's competitive advantages, certainly bringing her to the periphery of the industry and depriving her of the opportunity to receive a high salary. In this case, the acquisition of time before another profession allows establishing oneself in the business community.

Prejudice and the education system play a significant role in shaping gender disbalance in STEM and particularly in the field of information and communication technologies. European research links the growth of women's participation in job market and the diversification of the workforce with higher GDP. According to statistics, the EU member-states achieving gender equality by 2050 can provide GDP growth between 1.95 and 3.15 trillion euro, or 6–10% in GDP per capita additionally [10].

Communication in business relations and the perception of women in society, according to many scholars, is the basis for establishing gender equality in the field of STEM. Studies show that women have communication barriers: rudeness in communication; society's unwillingness to accept women in high-tech sectors; gender stereotyping in education; non-acceptance of motherhood for employment and promotion.

Communication is a dynamic life process that is not a postulate. It is changeable due to new social challenges and new social conditions. A study of the level of women's representation in STEM education, as well as separately in communication and information technologies, shows that barriers to gender issues begin with the cultural characteristics of society and the country. They grew mainly from the stable traditional ideas, which were formed predominantly under the influence of physiological characteristics of each gender. The variability of modern society built on greater social opportunities, scientific achievements, economic levers and understanding of personal freedom, dictates new rules for the development of social relations, recognition of gender and the formation of social relations based on equality of opportunity with tolerance and tolerance to gender. After all, gender equality implies achieving opportunities in different ways and mastering new areas by different methods.

Achieving gender equality in communications is necessary to create a basis for the formation of social gender equality. Establishing the ecological communication is one of the most important conditions for achieving gender equality. It includes the recognition of women's rights to social equality with men in high-tech industries, awareness of the social and physiological roles of women and men, based on work-life balance, responsible motherhood and fatherhood; understanding of barriers in business communication and public life. Failure to comply with any of these components leads to discriminatory practices in the field of STEM starting with education and ending with employment.

The ecology of social experience is an understanding of the fluidity of culture, which is not an imperative, but has signs of mobility in accordance with rapid changes in public life. The following ecological emotional practices are important for men and women: understanding the emotions of another, feeling the mirroring of emotions, understanding the experience of another; mastering the methods of non-conflict communication.

5   Conclusions

Improving the perception of gender equality in society, as well as understanding and upholding the basic principles of equality, according to the European Union approach, will ensure respect for individual rights and freedoms. Communication levers are the main ones, as the institutional readiness to accept gender equality is the basis for the successful implementation of mechanisms for both communicative and socio- economic efficiency.

A review of the literature has shown that women themselves emphasize the importance of environmental communication. The low representation of women in STEM is due to the lack of attention to this issue, stereotypes about the place of women in society and in STEM. The EU's projections of economic efficiency for women's involvement in high-tech sectors of the economy will have the advantage of diversifying the labor market. Prejudice in the traditional view of women's ability to STEM forms negative communicative practices, which are reflected in the manifestations of discrimination, sexism.

An early secondary education system reduces the chances of girls being involved in STEM. At the same time, the system of gender stereotypes plays not the least role here. Evidence from women that the communication barriers they face or have concerns about

them shows how important it is to understand and support women in new areas of activity. After all, STEM is a new socially unconditional area for women in which discriminatory practices are still in force. Our analysis of statistical data on female attainment in STEM education enabled to define 6 gender equality laggards (Malta, Latvia, Luxembourg, Cyprus, Netherlands, and Belgium), while the number of gender equality laggards in terms of female attainment in information and communication technologies included even larger number of EU member-states (Cyprus, Hungary, Czech Republic, Poland, Austria, Spain, France, Slovenia, Lithuania, Netherlands, Slovakia, and Portugal).

Environmental trends in communication to improve the situation are defined in three units: the environmental purpose of communication, which is formed on the basis of recognition of problems and the importance of gender; ecology of social experience, which should be based on the perception of new social challenges, and not so much on the stereotypical social conditions of the past; emotional ecology as a process of emotional empathy, emotional intelligence and non-conflict practices. These gender dimensions of the communication environment form the basis for developing communication strategies in various areas where women are underrepresented or socially pressured.

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Digital Administration of the Project Based on the Concept of Smart Construction

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Abstract. This study is devoted to the problem of updating the administration system of a construction project based on the integration of the concepts of process-oriented and project-oriented management in the context of the implementation of the latest technologies and digital models of smart construction, building information modeling (BIM) and the Internet of Things (IoT). In accordance with this significant transformations are subject not only to the operating system of enterprise management, but also to the course of business processes in the management environment of an investment and construction project. The result of the study is a model of a digital design company for construction lifecycle management. Such a model for managing a virtual design enterprise will optimize and reduce the costs of existing operating systems for managing a construction enterprise. The concept of introducing a life cycle management system for construction objects using BIM in the areas of reconstruction projects is proposed. With further development and implementation, this industry-specific BIM platform management model can form an information technology integration framework for reorganizing the business processes of a construction enterprise. The basic structure of the BIM platform is described, consisting of four components. There are cloud computing, big data analytics, Internet of Things and Blockchain information technologies. The need for the evolution of IoT information technologies from intelligent things to an intelligent planet is shown. In the future, it is planned to develop an integrated innovative structure of a holding type that supports the digital transformation of the operating system of enterprise management in the construction industry.

Keywords: Project management · Operational management system · Construction company · Digital transformation of administration systems · Information modeling in construction

1   Introduction

In the process of digital transformation of the economic structure, approaches and tools are being developed that offer a solution to digital control problems by creating a system of algorithms for information flows and organizational relationships between project participants and the real estate market in an integrated information environment [1, 2].

Digitalization and the spread of digital technologies for organizing and managing production occur intensively in all industries and countries. Initially, these processes were evolutionary and discrete, automating individual processes and production cycles [3]. Now the development of strategies for the digital transformation of business processes has become a priority task for most large organizations, regardless of the industry, production specifics or legislative specifics. Moreover, the introduction of information technologies for production management in many countries is implemented at the level of state programs for the digital transformation of the economy. For example, these are such programs as the American Advanced Manufacturing Technology, the German Industry, the strategic concept for the development of production in China, the English program Innovate UK, the Australian National Digital Economy [4–6].

In the investment and construction complex with the formation of new conditions and digital opportunities not only at the level of large corporations, but also at the industry level, there is also an urgent need to rethink the goals of information modeling and develop approaches with a focus on long-term information models of a capital construction object, its organization and management of its life cycle.

The authors of the works [7, 8] describe using of BIM technologies to solve the problems of information modeling of construction objects like as most widely used today, which have spread all over the world since the early 2000s. At the same time, until now, most users are adopting BIM mainly for working with graphic 3D models. In practice, the potential and capabilities of BIM technologies that provide information exchange functions for BIM models and other benefits for construction organizations and the state as a whole are rarely used.

The articles [9–11] give a detailed review of requirements on the field of information modeling in construction, regulations, standards and codes of practice are developed separately, in relation to different levels of maturity and BIM integration. In management with the use of information modeling technologies, a BIM platform is being developed for the purposes of managing the life cycle of construction objects, which should interact with other information systems to ensure urban planning activities.

According to these rules, the model of the construction object was formed as a set of archives of poorly structured information is the so-called information containers. This reflects the existing structure of these capital construction objects, contained mainly in reference books and catalogs of buildings, their individual parts and structures [12, 13]. This approach to modeling contains significant risks associated with the fact that the information container operates on the basis of internal closed proprietary data formats. It is proprietary software that works with proprietary formats. As a result, information modeling of the construction and operation of buildings and structures on this basis increases the import dependence of capital construction.

Structuring construction information remains a difficult problem. Until now, there has not been a unified approach to the principles of building a classifier of construction information. The professional community, industry organizations and associations express many comments regarding the existing versions [14]. The most significant shortcomings are associated with the absence of basic library elements for accounting for the life cycle of elements in classifiers and reference books, an incomplete resource composition of processes and prices, which does not allow automatically calculating the cost of construction resources and conducting an examination of the cost of construction.

Another group of risks of the information container model is the problem of open data transmission both between different information systems of the project participants and between successive stages of its life cycle. The problems are related to the specifically large and variable number of participants in the construction project and its specifically long overall life cycle. All this brings a special requirement to the information model of a capital construction object - the need for adequate reflection of data in the process of multiple transformations and for a long time [15].

Accordingly, the state, setting the task of developing information modeling in construction and the strategic goal of developing a unified federal system for managing capital construction facilities based on information modeling technologies, should receive its conceptual solution in an open format that does not depend on a specific developer. At the same time, the created concept of an industry digital platform should provide the ability to add and transform data of different formats throughout the strategically justified life cycle of a construction site.

The purpose of creating an integrated structure is to consolidate the accumulated experience and professional competencies to optimize and increase the efficiency of the implementation of BIM technologies in construction [16].

The analysis of the situation in the work [17] reports as a whole suggests that an urgent request has been formed in the professional environment and there is an urgent need for a unified systematic approach to industry information modeling technologies and in the development of an appropriate comprehensive concept and standards. The development of technical and regulatory documentation in the field of information modeling of capital construction objects has so far been carried out haphazardly and separately.

The authors of the work [22] describe evolution, taxonomy of architecture, communication technologies and applications of IoT and suggest available cross-layer solutions for main issues such as energy consumption, mobility, interoperability, security, privacy, and scalability, etc. This study highlighted the need for a more efficient system based on IoT to address the identified problems.

In the work [23] author had aimed to achieve optimized support vector machine based congestion control in wireless sensor network based on IoT. To control the congestion of data packets in wireless sensor network based on IoT, artificial flora algorithm-based support vector machine has been presented.The authors of the work [24] research hybrid approaches to address various challenges in wireless sensor network for IoT applications. Optimization provides a set of approaches to maximize the operational potential of wireless sensor networks and the IoT network.

The article [25] gives optimization for IoT multipath fault-tolerant routing developed. The proposed methodology focuses on selecting the optimal CH and best routing paths

based on multiple constraints.In the works [26], the authors provide the reengineering of the construction processes based on BIM-technology.

This research discusses the problem of the digital transformation in the construction company. A unified concept of data standardization has not been formed. Unified directions and stages of solving practical problems of informatization of the construction industry have not been.

There are no specialized integrated solutions. Further digital transformation of the construction industry requires:

– Formulate a single strategic building information modeling target.
– Determine the structure and logic of industry standards for information modeling within the framework of national and other standards.
– Develop directions for organizing a unified system of information modeling of buildings and structures.
– Substantiate practical approaches and the procedure for creating this system.

2 Main Research

The authors present their systematic approach to digital modeling of the design of a construction enterprise. Figure 1 shows system engineering of digital modeling in design activity.

On the presented logical-semantic scheme in the paradigm of cybernetics of problem-oriented modeling, the main subject-object (object-subject) horizontal connections of the constituent elements are abstractly distinguished, each pair of which is determined by the correspondence of its own level of digital modeling.

At the first (I) level of digital modeling of subject-object relationships (the top line of the names of the verticals of subjects and objects in Fig. 1), they are formalized, often in a simple arbitrary or established format, with a description that establishes a direct correspondence between a set of plans and a set of goals. The inverse object-subject connection presupposes the influence of the correction of goals on the plans for their implementation, and the conditionally symmetric subject-object connection (the bottom line of the names of the verticals of objects and subjects in Fig. 1) changes the scheme of priority of correspondence to the opposite - a set of goals is associated with a set of plans.

For the conceptual simplicity of the general logic of the scheme, the presented system technology of digital modeling of creative activity establishes a conditionally direct correspondence of the levels of digital modeling to the levels of BIM dimension. So, the first (I) level of digital modeling corresponds to the first (1D) level of BIM dimension. Similarly, in the logic of the system engineering scheme of digital modeling of creative activity, seven levels are distinguished, corresponding to six levels of aggregation of entities in terms of subject-object (object-subject) relationships: «plan-goal», «object-project», «process-time», «technology-economy», «system-resource», «complex-convergence».

At the second (II) and third (III) levels, the project formalizes two and three-dimensional models of some object of creative activity, respectively. A reverse object-subject relationship assumes the influence of a set of design conditions and constraints
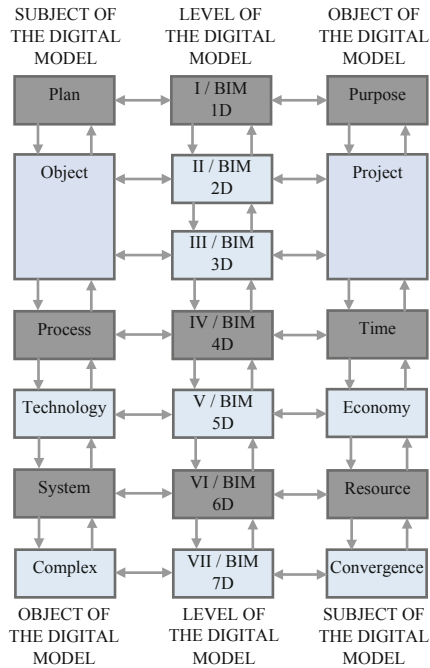
Fig. 1. System engineering of digital modeling in design activity

on the object itself, and a conventionally symmetric subject-object relationship changes the matching priority scheme to the opposite, when an object is created based on a design priority established for any reason (for example, using a typical project). It should be noted that the essence of the relationship «object-project» of the second (II) and third (III) levels of digital modeling is not limited to two and three-dimensional visualization of the object, but is the basis for the automation and optimization of variant design, design and intelligent parameterization of the project.

The second (II) and third (III) digital modeling levels are defined by the second (2D) and third (3D) BIM dimension levels, respectively.

At the fourth (IV) level, the processes that make up creative activity are formalized by the time necessary for them. Inverse object-subject communication assumes the influence of temporary conditions and restrictions on the processes under consideration, and conditionally symmetric subject-object communication changes the scheme of priority of correspondence to the opposite, when a set of processes is formed based on conditions and time constraints (for example, fixed terms of commissioning of critical for infrastructure object). The essence of the «process» in the scheme is aggregated by their exhaustive formulation of a specific task set (production, organizational, management processes, etc.).

The fourth (IV) level of digital modeling corresponds to the fourth (4D) level of BIM dimension.

At the fifth (V) level, technologies used in creative activity are formalized by an assessment of the cost of their application. Reverse object-subject communication

assumes the direct influence of economic conditions and restrictions on the technologies used, and conditionally symmetric subject-object communication changes the scheme of the priority of correspondence to the opposite, when technological schemes are formed based on financial conditions and restrictions (for example, the availability of one or another technological equipment).

The fifth (V) level of digital modeling is defined as the fifth (5D) level of BIM dimension.

At the sixth (VI) level, the considered objects, processes and technologies that make up construction systems are formalized by the aggregation of all types of resource support for creative activity, presented at the previous levels of digital modeling by economics and time. The inverse object-subject connection assumes the influence of resource conditions and restrictions on the systems under consideration, and the conditionally symmetric subject-object connection changes the scheme of the priority of correspondence to the opposite, when the construction system itself is formed based on the conditions and resource constraints (for example, construction in conditions of interruptions in the supply of construction materials or lack of qualified personnel). The essence of the «system» in the scheme corresponds to the definition of a «building system» as a finite set of functional components (elements, objects, construction complex) and the relationship between them, allocated in accordance with a specific goal within a certain time interval [1]. The essence of «resources» is aggregated by their exhaustive formulation of a specific task set (material, technical, labor, organizational, etc.).

The sixth (VI) level of digital modeling corresponds to the sixth (6D) level of BIM dimension.

At the seventh (VII) level, building systems that make up creative activity are combined into complexes that additionally include qualitatively different systems (for example, social or biosphere [9]) and constitute an object of digital modeling of a new class in terms of convergence. The inverse object-subject connection presupposes the influence of qualitatively different in relation to building systems on the complexes in which they are considered, and the conditionally symmetric subject-object connection changes the scheme of the priority of correspondence to the opposite, when qualitatively different in relation to building systems significantly affect the complexes of building systems regardless of their positioning in relation to the complex under consideration (for example, the influence of the geopolitical situation on the course of dependent construction projects).

It should be especially noted that the analysis and solution of most of the tasks of the new, mentioned above, stage of creative activity (stage 4 in Fig. 1) is formalized in terms of convergence precisely at this level of digital modeling.

The seventh (VII) level of digital modeling is defined by an extended seventh (7 + D) level of BIM dimension, which implies further abstraction of any next level of digital modeling of the qualitative convergence of components of systems of various properties (8D, 9D,…, ND), objectively limited, however, the actual state of the scientific, technical and social progress of society, on the one hand, the objectivity of necessity and elementary common sense, on the other.

Any scaling of the I-VI levels of digital modeling and the corresponding BIM dimension levels is currently objectively exhausted by the framework of the six presented levels

of entity aggregation in terms of subject-object (object-subject) relationships: «plan-goal», «object-project», «process-time», «technology-economy», «system-resource», «complex-convergence».

All levels of digital models of the presented system engineering of creative activity are connected by object, by object and by the logic of digital models itself arbitrarily.Any designated level of digital modeling of creative activity is open for organizing connections with digital modeling systems external to the complex under consideration (for example, weather forecasting).

The described approach to the construction of subject-object and object-subject direct and feedback links at the model level makes it possible to correctly understand the essence and revise the emphasis in many completely practical areas of innovative development and construction industry regulation.

3   Integration Bim and IOT

The most promising, reliable and meeting all the requirements way to achieve these goals is the use of BIM technologies. The concept of BIM technology is in the stage of deep development and is distinguished by the use of information technology in the construction industry. The fields of application, methods and specificity of the concept are rethought by different experts and scientists from different points of view with different fields of research. BIM technologies are interpreted in different ways: as integrated building models, virtual building models and models of individual buildings. That is why, at present, the definition of BIM technology does not have a uniform interpretation at the international level.

The concept is based on the relevant information data of the construction project as the basis of the model, establishes a 3D information model of the construction project and simulates the real information that the building receives through digital information modeling [18].

BIM technology has many features such as visual analysis, collision checking and construction schedule simulation. With the established BIM model, solar radiation, ventilation and lighting of buildings can be modeled to determine the most appropriate location and spacing of buildings, and to formulate reasonable structural design schemes and scientific approaches that effectively reduce the energy consumption of a building [19].

The concept of introducing lifecycle management system construction objects using BIM implementation in directions renovation projects presents in the Table 1.

Fourth direction of the concept for the implementation of a lifecycle management system for capital construction objects using information modeling technology, taking into account the proposed additions, which we considered earlier, provides for the introduction of the latest technologies that support business processes, government functions and public services within the framework of building and structure lifecycle management using information modeling. Within the framework of this direction, it is advisable to integrate BIM and IoT as an actively developing area of Internet infrastructure development in the world, providing enhanced connectivity of devices, systems and services and their interaction with each other.

Table 1. The concept of introducing lifecycle management system construction objects using BIM implementation in directions renovation projects

Directions	Description
First	Formation of the legal framework of implementation of life cycle management of buildings and structures with the use of information modeling
Second	Implementation of the construction information classifier and ensuring its interconnection with existing international and national classifiers
Third	Formation of methodological, regulatory and technical foundations for managing the life cycle of buildings and structures using information modeling
Fourth	Introduction of modern technologies and platform solutions that support business processes, state functions and public services within the lifecycle management of buildings and structures with the use of BIM
Fifth	Formation of legal, technological and organizational foundations for the exchange of data and ensuring their reliability and relevance in information resources that make up the digital ecosystem for managing the life cycle of buildings and structures using BIM
Sixth	Development and implementation of professional training programs for specialists in the field of BIM in construction
Seventh	Development and implementation of performance indicators of the life cycle management system for buildings and structures using information modeling
Eighth	Development and implementation of performance indicators for renovation projects of territories (residential areas), including complexes of buildings and structures using information modeling
Ninth	Strategic planning of the resource base for current and major repairs in order to extend the life cycle of buildings within the predicted time frame using information modeling
Tenth	Development and implementation of indicators of investment attractiveness and efficiency of renovation projects of territories (residential areas) using information modeling for the state and for business in the long term

Integrating BIM with real-time data from IoT devices is a powerful paradigm for applications that improve construction and operational efficiency. Numerous applications enable real-time data streams from the rapidly expanding set of IoTs for high-fidelity BIMs. However, research on the integration of BIM and IoT is still at an early stage, it is necessary to understand the current situation of the integration of BIM and IoT devices [20].

In essence, construction is project management. With digitalization, it turns into control based on data obtained automatically at the point of their origin from IoT devices and sensors, connected machines, platforms and equipment, which allow creating information and mathematical models and algorithms, and realizing more and more autonomous production and business processes having the property of adaptability.

That is, the basis for digitalization of construction is informational and mathematical modeling of end-to-end processes, which allows to optimize work in terms of cost, timing, business sustainability and minimization of negative environmental impact, and any other specified characteristics, based on high quality data (in terms of parameters – relevance, accuracy and completeness).

So, for almost 40 years of the existence of the IoT, according to a number of experts, 4 evolutionary stages have passed [20]. Let's present them in the Table 2.

Table 2. Evolution of the Internet of Things

Stage	Stage characteristics	Example
Stage I–Smart Things	Identification of each object is carried out separately. One fact remains unchanged - a person is needed to connect all objects. It was at this stage of development that the idea of effective interaction between all objects appeared	Indoor humidity data over a period of time; information about insufficient amount of washing powder in the machine
Stage II –Smart Building	A system of connected devices and objects that have the ability to communicate. The ability to delegate a significant part of your daily routine to the Internet of Things	Everything in the house, from the refrigerator to the curtains, is connected to each other, the level of illumination and temperature is regulated thanks to sensors and smart watches. The devices are able to make independent diagnostics, as well as inform about the need for repair work
Stage III – Smart City	Collective image. It shows a situation where every house will become smart. In other words, the prototype can be implemented if IoT technologies become available to everyone. The collection of individual nodes will create an infrastructure in which all objects will communicate with each other. Provides for the collection and processing of all information related to the inhabitants of the settlement, as well as individual districts, quarters and houses	All residential areas are under the control of a general analysis of the data that comes from things. Thanks to this feature, electricity consumption is regulated; various breakdowns are recorded and eliminated as quickly as possible. A smart city is an ecosystem in which everything from urban transport to the regulation of commodity and retail relations is shaped by the collection of data. Ultimately, the standard of living rises

Table 2. (*continued*)

Stage	Stage characteristics	Example
Stage IV – Smart Planet	Sensory planet. Acts according to the example of the third level, but already on the territory of the entire planet. When humans can create an ecosystem of smart things, it's time to shift their focus to Earth. With the help of a system of sensors, humanity will be able to control absolutely all natural processes. It will be possible to avoid the consequences of natural disasters; a base will be formed to track the health of the planet and the possibility of improving it; people will be able to effectively track, control and use resources	All cities and countries, all populated and uninhabited areas of the planet are under the control of a general data analysis that comes from things. Thanks to this opportunity, the consumption of natural resources is regulated, the negative consequences of dangerous natural phenomena are recorded and eliminated as quickly as possible, and possible disasters are prevented

Practical applications of IoT in the construction industry range from smart thing to smart home. The implementation of IoT in construction is complicated, among other things, by the need to take into account the impact on the environment, close ties with housing and communal services, energy and consumer electronics. Based on this, it is possible to determine the current areas of application of the IoT in this area.A serious advantage of the integration of BIM and IoT is that the Internet of Things is being introduced not only during the operation of the building, but also directly in the design and the stage of construction work.

Figure 2 presents BIM and IoT integration in smart construction. Consequently, in the process of new construction, as well as in the framework of the reconstruction of residential areas, builders and developers are invited to use the following formula to determine the promising directions of the company's development.

The integration of BIM and IoT in smart building spans different areas, uses an integration approach in the implementation process that includes a range of cutting-edge technologies, and faces a range of opportunities and challenges. In Fig. 1 presents the key aspects of BIM and IoT integration in smart building. In our opinion, first of all, it seems necessary to analyze the preferences of potential consumers. After analyzing this information, it is possible to determine the level of awareness of the population with the possibilities of Smart Construction, to understand which modern technologies used and developed in the world are advisable to invest funds, thereby providing themselves with real competitive advantages. The analysis will focus on those devices of the IoT world, the implementation of which will most significantly strengthen the company's position
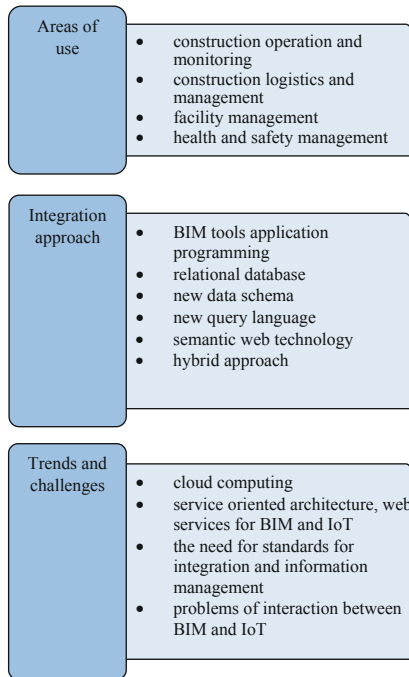
Fig. 2. BIM and IoT integration in smart construction

in the market. And the integration of BIM and IoT, in turn, will provide a synergistic effect.

4   Results

Information characterizing a capital construction object appears, replenishes and transforms during all stages of its life cycle − design, construction, operation and liquidation of the object. In fact, this is an information flow, therefore, the structural information model of organizing and managing the life cycle of a construction object can be represented as a set of interrelated information flows of project subsystems. The functionality of digital transformation of organization and construction management is determined, on the one hand, by the growing capabilities and tools of information and communication technologies, and on the other, by the specifics of information flows in construction [18].

Consolidation of many algorithms, tools and approaches of IT technologies leads to the formation of completely new conditions and opportunities for organizing and managing processes in the industry, determines the essence and strategy of changes in the corresponding information flows and forms their new infrastructure.

Let's single out the information and communication technologies that are closest to the industry-specific tasks of information modeling.

Figure 3 presents basic structure of the BIM platform. Firstly, these are cloud computing technologies, which make it possible for numerous project participants to work

with project information from different devices with minimal effort to manage their interaction. Cloud services, such as IAAS, PAAS, SAAS, and the like, are currently based on technologies for sharing resources in business processes.

Secondly, these are Big Data technologies that use horizontal scaling software tools to analyze and synthesize very significant amounts of diverse data from different sources. It is important that the tasks of organizing and managing the life cycle of a construction project are characterized by varied and unstructured source information.

Standard methods and tools for working with data do not allow solving management tasks of this level, and tools and methods of big data in relation to project lifecycle management correspond to the specifics of information flows of a capital construction object.

Big Data software products and methods make it possible to work with different, independent and often unstructured arrays of direct and indirect information related to the project, as well as to analyze significant amounts of data from different project subsystems, the information of which is growing, stored and updated with different frequency and speed.

To date, leading developers have created many software solutions for big data processing. There are programs from Microsoft, Oracle, IBM, Hewlett-Packard, EMC, Apache Software Foundation (HADOOP), etc. [19, 20].
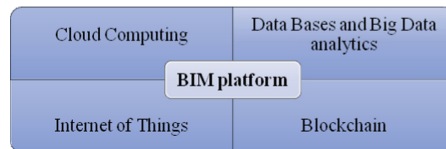
Fig. 3. Basic structure of the BIM platform

Another digital concept is the Industrial Internet of Things (IIoT) [20]. The essence of the concept is the unification of engineering developments for equipping with sensors and online connection of structures and devices. Their integration provides instrumental monitoring, organization and management of production processes in real time, remotely and automatically. The digital IIoT concept of the industrial Internet of Things is already forming the infrastructural basis of information flows for the organization and management of the project life cycle.

In the context of the openness and security of the format for managing the life cycle of a construction object, it is also advisable to consider the applied prospects of digital blockchain technology This technology is rapidly expanding the scope of various applications. The Blockchain functionality is designed in such a way that:

- Information exists in a distributed network built and maintained by network users.
- Data are copied in multiples, which ensures maximum stability and security of data storage.
- All information has an open history, which allows you to control the authenticity and origin of the data.

Taking into account the specifics of the information flows of the project life cycle in construction, the implementation of these functions is necessary and extremely in demand in the information management model.

Digital technologies in any industry lead to the economic feasibility of the transition from the number of automated business processes to their qualitatively new information and communication organization and a change in the production organization system. In recent years, on the basis of network communication tools, complex digital production concepts have been formed, which allow organizing the interactions of production participants on new principles.

The defining concept of sectoral digitalization in general, and the construction industry in particular, is the sectoral digital platform [22]. The platform consolidates all information and communication software tools necessary for solving industry problems, provides specialists and other participants with access to information and professional services for analytics, planning, organization, management, etc. Without a platform, it is impossible to track the full life cycle of a project and correctly reflect it with information flows. The backbone property of a digital platform is its functionality or an ordered set of algorithms for interactions between project participants and production in a single information space. The available interaction functions of the project participants and the corresponding algorithms determine the advantages, disadvantages, effectiveness and level of maturity of the digital platform. Platforms are classified depending on the functionality available. The industrial digital platform for capital construction must have comprehensive functionality that allows it to solve information tasks (access and work with data on the project and the real estate market), infrastructure tasks (access to digital resources), technological tasks (access to specialized tools and technologies) and corporate tasks (optimization of control processes).

To manage the life cycle of a capital construction object, a management model with a flexible organizational structure is proposed that meets the peculiarities of transformations of successive stages and the composition of participants in the life cycle of a capital construction object is a virtual design enterprise.

Figure 4 shows a model of a project company for managing the life cycle of a construction object.

During the life cycle of an object, a lot of resources are integrated under the project: financial, production, material, intellectual, information, communication, etc. Mobilization of the necessary resources for the needs of the sequential stages of the project can be based on the industry digital BIM platform within the infrastructure and functional services of the virtual project enterprise. The industry digital platform and its tools allow you to quickly organize the attraction of resources and constantly monitor the project. The platform makes it possible to use the resource in the required amount in the required period of time and reduce losses from downtime or resource search. A virtual project enterprise as a management model, along with organizational flexibility, reduces the use of its own resources to the necessary and sufficient minimum. In practice, an own asset in most cases is more expensive than the attracted resource, since it must be maintained in operational condition, even when it is not being serviced. In a virtual engineering enterprise, only those resources are used as its own assets that are required over a long

period of the project life cycle. This becomes another factor in increasing the efficiency of the project and its life cycle.
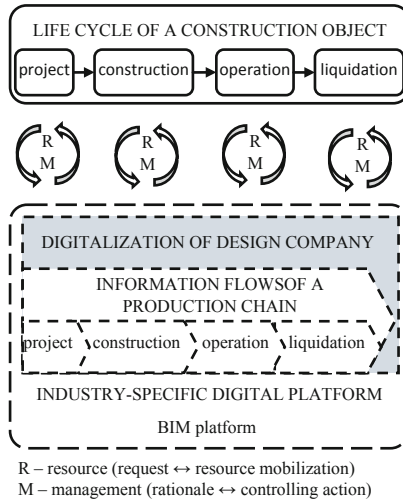

R – resource (request ↔ resource mobilization)
M – management (rationale ↔ controlling action)

Fig. 4. A model of a digital project company for management of the life cycle of a construction object

The virtual engineering enterprise operates in real and digital format throughout the entire life cycle of the facility. The information flows of the successive stages of the life cycle are built conceptually as a production chain on a single industry digital platform. All organizational and resource changes are recorded in the digital twin of the project in real time using cloud technologies, big data, the Internet of things and communication technologies for transferring large amounts of information.

5 Conclusion

Thus, we can conclude that information modeling technologies are an extremely promising topic. The topic of «relevance of BIM technologies» is raised at all kinds of forums and exhibitions. Due to the high interest of the state in the implementation of BIM technologies in the construction industry, construction organizations that are making the transition to the use of information modeling technologies can seriously count on state preferences. Today, some of the tasks set by the state for construction organizations seem to be impossible, however, as the experience of many countries shows, the solution of these tasks is just a matter of time.

An original scheme of systems engineering for digital modeling of creative activity is proposed. The scheme describes seven levels of digital modeling, corresponding to six levels of link aggregation: «plan-goal», «object-project», «process-time», «technology-economy», «system-resource», and «convergence complex». All levels of digital models of the presented system engineering of creative activity are connected by object, by object and by the logic of digital models proper is arbitrarily.

The urgent need to rethink the goals of BIM technologies in the direction of long-term economic models and life cycle management of capital construction objects was realized. From these positions, the production concept is promising a virtual design enterprise on a single industry BIM platform, combining digital tools that correspond to the specifics of information flows of the full life cycle of a project in construction.

The virtual design enterprise as a management model optimizes and reduces the costs of the existing management systems. With further development and implementation, this management model on the industry BIM platform can form the information technology basis for a new work organization and interaction between project participants − employees and companies. At the same time, a virtual project enterprise is proposed as a production concept and an organizational basis for the transition to full cycle BIM, to the management of the full project life cycle and the reengineering of the corresponding information flows.

Finally, the authors believe that integrated BIM, Cloud Computing, Internet of Things, Big data and Blockchain information technologies create an innovative framework supporting digital transformation in the construction industry.

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Factors Affecting the Growth of Investment in Achieving Economic Development in Jordan - an Empirical Study

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Abstract. Investment is one of the most important economic activities that enjoy great importance and attention in most countries of the world. The aim of this research is to shed light on the factors affecting the growth of investment in achieving economic development in Jordan. This study is based on a sample of 116 investment companies using the stratified random sampling technique, which is exploratory in nature and depends mainly on primary data and uses quantitative methods to analyze the data. This study aimed to identify the factors driving investment, which play an important role in the development of the Jordanian economy during the era of the Fourth Kingdom. The study revealed the presence of seven main important factors that encourage investment and include, according to their importance, security and political stability, incentives and facilities, guarantees, legal environment and stability of legislation, modern infrastructure, stability of the financial and banking system, openness of the country and easy access to global markets. As for the unimportant factors from the investors' point of view, which are not important in determining the decision to invest or not in Jordan, according to the study, they included quality of life, labor and workforce efficiency. The study also aimed to determine the most important benefits and obstacles to investing in Jordan from the point of view of investors. Where the results of the statistical analysis showed that the strong desire to increase income is one of the most important benefits desired from investment and contribute to improving the standard of living of individuals as the least benefit. While the most important obstacles to investment were the administrative bureaucracy and the least influential was the monopoly of feasible investment opportunities by a specific group of investors.

Keywords: Investment factors · Economic development · Economic stability · Investment benefits · Investment obstacles · Jordan

1 Introduction

Jordan is a developing middle-income country with a population of 10 million people located in the Middle East, bordered by Palestine, Saudi Arabia, Iraq, Syria, and the West Bank, with a parliamentary and hereditary monarchy headed by King Abdullah

II (Alawamleh et al. 2019). The country is rich in human resources, is relatively poor in natural resources, and imports most of its food and crude oil from Arab countries. Successive scientific and economic developments have contributed to expanding the base of economic openness, and this has resulted in more challenges for developing countries, including Jordan, which suffers from defects in their economic structures and dependency, which made them face many difficulties at the economic and social levels (Al-Froukh 2019). Which prompted these countries to work on to address this imbalance, by seeking to restructure their economies in a manner that prepares them for competition among themselves to attract foreign investments and benefit from their advantages.

If the investments are properly directed, they will lead to addressing economic distortions and structural imbalances in the national economy, as it is an important tool that contributes effectively to achieving balanced economic growth (Abdul-Khaliq and Abu Shihab 2010). Hence, economic studies have shown that there is a direct and direct relationship between investment, development and economic stability, and in order for investment to exercise its active role, it should be directed towards sectors with high added value (Mdanat et al. 2018). The process of attracting investments to any country should be a priority so that all the influencing factors that investors take into consideration if they decide to establish their investments in a specific country are studied in order to create an investment environment that attracts and incubates investment. In addition, focusing through the economic sectors and activities that the state should considers a priority in light of the state's peculiarity, its demographic, cultural and social structure, as well as its economic and development needs will be studied.

Jordan has undertaken numerous economic, administrative and legislative reforms to remove restrictions on the movement of its foreign trade, capital investment, and access to global markets (Al-abedallat 2017). In addition, Jordan has succeeded in achieving good growth rates as a result of these reforms. As Jordan was one of the countries that realized the importance of foreign direct investment as a major tool for correction and economic openness, and in order to achieve the desired goals of these foreign investments, the Jordanian government has taken many corrective measures and enacted laws and legislation in order to provide the appropriate investment climate to attract foreign investments in light of intense competition from neighboring countries (Shotar and Abdulrazag 2007).

2 The Investment Climate in Jordan

Investment is a word that means a lot to all countries of the world, and it is the main key to advancement and the important element in attracting and encouraging investment (Alalawneh 2020). The investment climate is defined as the totality of the political, economic, social and legal conditions and circumstances that affect the orientation and settlement of capital (Diebolt and Hippe 2019; Dinh et al. 2019). According to Mukhtarov et al. (2019) and Al-Froukh (2019) the observer of the Jordanian investment climate finds that the Kingdom is characterized by an attractive investment climate that provides the appropriate environment and success factors for investment projects through the creation of a stable political, economic and security environment and the creation of laws and legislation in line with global conditions and developments.

There are many strength factors that the Kingdom enjoys such as the diversity of economic activities, whether industrial, tourism, commercial, medical and therapeutic, or information technology, in addition to other strengths such as the availability of appropriate infrastructure such as road and communication networks, a developed banking system, stability of exchange rates, availability of foreign exchange, and policies, the open economy, as well as the availability of educated and qualified human resources capable of managing and operating investments (Hanushek 2013; Pandya and Sisombat 2017; Mukhtarov et al. 2019; Al-Froukh 2019). Furthermore, the Kingdom's proximity to consumption markets and its association with commercial relations and multiple agreements that qualify the Jordanian product from access and competition in global markets.

3   Objectives of the Study

The study objectives are as follows:

1. Getting to know the reality of the investment climate in Jordan
2. Identifying the impact of investments on economic development in Jordan
3. Determine the most important factors driving investment in Jordan
4. Determine the most important benefits that encourage investment in Jordan
5. Determining the most important obstacles that limit investment in Jordan

4   Driving Factors for Investment in Jordan and the Study Hypotheses

It is often known that investment is mainly related to the economy; Where investment is one of the basic criteria on the basis of which the extent of success of economic development and economic stability is measured, which in turn is considered one of the most important things that work to strengthen the state and improve its reputation. There are many previous studies that dealt with the factors that push individuals and companies to invest outside the borders of their countries (Alnagi, and Hamdan 2009; Al-Tarawneh 2011; Al-Azzam 2015; Oudat et al. 2016; Alamro 2017; Bani Hamad 2018; Al-Durgham and Adeinat 2020; Rahmana et al. 2020; Helala 2021). After examining all these studies, the most important factors driving investment in Jordan can be summarized into nine factors including: security and political stability, modern infrastructure, incentives and facilities, labor and workforce efficiency, the legal environment and the stability of legislation, the stability of the financial and banking system, openness of the country and ease of access to global markets, guarantees, and quality of life. All of these factors will be discussed in detail in the following sections.

4.1   Security and Political Stability

The security factor is considered one of the most important factors that the investor considers before making the decision to invest or expand in it, especially in a country

surrounded by areas of tension in most of its aspects (Yom and Al-momani 2008; Bani Hamad 2018). In addition to the balanced political relations with most countries of the world and the confidence that the world attaches to the political system in strengthening stability, which gives a competitive situation in all fields, foremost of which is the issue of investment. The political system in Jordan spares no effort in restoring political relations in areas of tension in the region and the world is witness to it in this regard. And the investor, as part of this process, realized the importance of the factor of security and stability for a country surrounded by places of tension and political fluctuations. Rather, it became a safe haven for those who were displaced from their country due to insecurity, which made this factor one of the most important factors attracting investment to and settling in the Kingdom. Thus, it is hypothesized that a positive association between the effective of security and political stability and economic development and stability in Jordan is as follows:

First Hypothesis: (H1) There is a positive effect of security and political stability in achieving economic development and stability in Jordan.

4.2 Modern Infrastructure

Around the globe the importance of infrastructure as the motor of economic development is rising owing to increasing mobility and the need to make urban territories accessible. As a result, infrastructure networks are among the most complex and significant design tasks today (Al-Omari 2006; Alnagi and Hamdan 2009). This research investigates how the design of infrastructure actively influences economic development in Jordan. Works of infrastructure are analyzed as footprints of civilization, as physical presence, as transformers of perception, and as new vessels of collective life. According to the World Economic Forum's Global Competitiveness Report 2017–2018; Jordan enjoys a stable and efficient institutional system, in addition to a good infrastructure, a spirit of innovation and a well-developed business environment. Jordan is investing heavily in integrating different technologies into key economic sectors such as health, education, energy, transportation, finance and communications, and this is part of the government's ambitious action plan. Thus, it is hypothesized that a positive association between the effective of modern infrastructure and economic development and stability in Jordan is as follows:

Second hypothesis: (H2) There is a positive effect of the modern infrastructure in achieving development and economic stability in Jordan.

4.3 Incentives and Facilities

Incentives and facilities are considered among the most important factors that affect economic development in any country (Sierzchula et al. 2014; Rahmana et al. 2020). A set of laws and legislations were issued in Jordan to encourage investment by containing many incentives and facilities to keep pace with the economic and social development that the country is going through in order to provide the appropriate investment climate without hindrances. In Jordan, incentives and privileges offered to investors are divided into financial incentives, such as tax and customs exemptions, and are also concerned with income, profits, social service taxes, buildings and land, incentives related to capital

transfer, salaries, wages for foreign workers, capital returns or non-financial incentives. Non Fiscal Incentives such as facilitating and simplifying investment procedures and others, in addition to ensuring that subsequent legislation is not applied to the establishment of the investment in a way that negatively affects its survival and continuity. Thus, it is hypothesized that a positive association between the effective of incentives and facilities and economic development and stability in Jordan is as follows:

Third hypothesis: (H3) There is a positive effect of incentives and facilities in achieving development and economic stability in Jordan.

4.4 Labor and Workforce Efficiency

Efficiency of labor implies the quality and quantity of goods and services which can be produced within a given time and under certain condition (Khawaldeh 2017: Kontsevaya 2018; Al-Durgham and Adeinat 2020). The human element plays a pivotal role in the operation of factories and companies. Despite this, efforts to increase productivity usually focus on the technical aspects of production processes and attracting and retaining motivated skilled workers is just as important. Jordanian education has a regional reputation for being cutting edge and for producing highly skilled and creative graduates in the fields of healthcare, engineering and information technology. In addition, the labor market in Jordan ranks high in terms of the quality of higher education and on-the-job training. Thus, it is hypothesized that a positive association between the effective of labor and workforce efficiency and economic development and stability in Jordan is as follows:

Fourth Hypothesis: (H4) There is a positive effect of labor and workforce efficiency in achieving development and economic stability in Jordan.

4.5 The Legal Environment and the Stability of Legislation

The legislation regulating the investment process is considered one of the most important features of the economy that attracts investment (Radu 2015; Jiao et al. 2015 and Helala 2021). This is because of the provisions contained in these legislations that regulate the investor's relationship with the state and his residence there, as well as the investor's ownership of the investments belonging to him according to special regulations regulating the process of ownership, as well as the rights, privileges and incentives granted by these legislations. Jordan is considered one of the first countries to enact special legislation and laws related to encouraging and motivating investment. The first law to encourage investment in the Kingdom was issued in 1967 and included many provisions for this purpose. Then a law was issued in 1988, which included fundamental amendments in the field of incentives and benefits, especially related to the development of less fortunate areas. Until finally, the issuance of the Investment Law No. (30) for the year 2014, which is currently in force, which included additional provisions and granting investments additional privileges and facilities. Thus, it is hypothesized that a positive association between the effective of legal structure and the stability of legislation and economic development and stability in Jordan is as follows:

Fifth Hypothesis: (H5) There is a positive impact of the legal structure and the stability of legislation in achieving development and economic stability in Jordan.

4.6   The Stability of the Financial and Banking System

The concept of financial stability means rehabilitating the financial sector to deal with and absorb financial crises and reduce the possibilities of their occurrence, which requires a great deal of transparency, corporate governance and performance discipline in the financial markets (Al Nimer et al. 2015; Oudat et al. 2016). Jordan has a very developed banking sector by regional standards, providing a wide range of business, investment and retail services (Almahadin et al. 2020). There are local and international banks in Jordan where they operate, grow and prosper. There are 28 banks in Jordan, 16 of which are Jordanian, 3 are Islamic, and 9 are non-Jordanian. Jordan also enjoys a comprehensive legal framework (the Central Bank of Jordan Law, Banking Law, Anti-Money Laundering and Terrorist Financing Law, Money Exchange Law, Public Debt Law, Foreign Currency Control Law, and Electronic Transactions Law). According to the World Economic Forum's Global Competitiveness Report 2017–2018, there has been an improvement in the availability of investment capital and access to credit over the past years. Therefore, based on the research, the following hypothesis was proposed:

Sixth hypothesis: (H6) There is a positive effect of financial and banking stability in achieving economic development and stability in Jordan.

4.7   Openness of the Country and Easy Access to Global Markets

Ensuring survival in the circle of competition and gaining more opportunities and increasing market share requires countries to adopt effective business models to manage their core capabilities in a way that enables them to present themselves in the global market (Almeida and Fernandes 2008; Meidayati 2017). And penetrate those markets effectively, and establish a foothold in them, especially if countries deal with sensitive products, important, and directly related to people's lives. The openness of the Jordanian state, its general policy, and its relations with other countries are among the positive factors that played a role in attracting foreign investments to the Kingdom, which is what distinguishes the Kingdom from other countries in the region. In addition to the role played by the political leadership in the Kingdom in strengthening it, given the acceptance and trust that this leadership enjoys. and respect in different countries of the world (Alamro 2017). Therefore, based on the research the following hypothesis was proposed:

Seventh hypothesis: (H7) There is a positive effect of the country's openness and ease of access to global markets in achieving development and economic stability in Jordan.

4.8   Guarantees

The guarantees granted to investors are considered one of the most important factors of investment attractions (McCollough 2010). They are regulated by the international agreements signed by the Kingdom with most countries of the world (between the investor and the host country for investment), starting with its agreement with the United States, European countries and various countries of the world in the field of protection and

encouragement of mutual investments between the Kingdom and these countries (Al-Azzam 2015). The United Nations Commission on International Trade Law (UNCI-TRAL) grants the investors of the Contracting States the treatment of the most favored investor, in addition to the freedom of the non-Jordanian investor to extract the capital he brought into the Kingdom, its returns, profits and the proceeds of investment liquidation freely and without restrictions. As well as not confiscating or expropriating the investment project except for the purposes of the public interest and in accordance with the national legislation in force, and paying fair compensation to the investor with the value of the investment on the eve of the decision to acquire and in a convertible currency. Therefore, based on the research, the following hypothesis was proposed:

Eighth hypothesis: (H8) There is a positive effect of the guarantees provided to the investor in achieving economic development and stability in Jordan.

4.9   Quality of Life

The concept of quality of life includes everything that an individual enjoys of housing, clothing, food and drink, and this is usually determined by his level of income, the environment in which he lives, and the social class to which he belongs (Ali et al. 2009; Al-Tarawneh 2011). Life is more than just work and therefore Jordan offers a diverse environment with all the amenities available in the twenty-first century. Where Jordan enjoys a developed infrastructure of airports, ports, road networks, communications, education and health, and seeks to establish a railway network linking the Kingdom with neighboring countries. Jordan is blessed with a mild and comfortable climate that gives those who love outdoor activities clear skies and low humidity. The state works to protect the marine, land and air environment to preserve the beauty of the country. Jordan is a party to more than ten international agreements on the environment in addition to deserts, nature reserves, health resorts on the Dead Sea and water sports in Aqaba (Al-Tarawneh 2011). Therefore, based on the research results, the following hypothesis was proposed:

Ninth hypothesis: (H9) There is a positive impact of quality of life on achieving development and economic stability in Jordan.

5   Investment and Economic Development

The issue of investment and its role in achieving economic development is one of the important issues. It is often known that investment is mainly related to the economy; Where investment is one of the basic criteria on which to measure the success of the economy, which in turn is considered one of the most important things that work to strengthen the state and improve its reputation (Louzi1 and Abad 2011). According to Alawamleh et al. (2019) the most important benefits that investment provides to the country's economy are the following: Works to increase the proportion of local products, which in turn increases the gross domestic product, which is considered one of the most important ratios and indicators that indicate the success of the country's economy. As well as increasing the proportion of investment projects and investments in general, which means employing the largest possible number of workers; Develop and improve

the country's economy as well as increase all domestic products and exports. Works to relieve the debt burden of the state; this leads to balancing the balance of payments, improving infrastructure, and developing all public utilities in society. Thus, we have a developed country that contains serious services that help provide social welfare and provide self-sufficiency for the state and the citizens who live in it, as well as exports from it abroad, which leads to the state obtaining financial revenues, providing foreign currency and improving the quality of the final outputs of local products.

6   Benefits and Obstacles to Investment in Jordan

There are many benefits that the investor aspires to achieve when thinking seriously about investing in Jordan. The benefits may differ from one investor to another, but in this study we have outlined most of the potential benefits and the investors were asked to point out their importance and determine their order in terms of priority (Afeef and Savenkova 2018; Al-Froukh 2019). These benefits included the desire to increase income and material profit, develop and improve the economy of the country in which it is invested, the desire to achieve future personal stability, contribute to improving the standard of living of individuals, Optimum utilization of human resources and reducing unemployment, desire to keep pace with scientific, social, personal and professional developments, benefit from the diversity and alternatives that exist in the countries to be invested in, benefit from investment guarantees in the countries to be invested in, desire to improve and support the national income, and benefit from facilities and incentives.

On the other hand, there are many obstacles that limit serious thinking about investing in Jordan, and the obstacles may differ from one investor to another, but in this study we have outlined most of the potential obstacles and the investors were asked to point out their importance and determine their order in terms of priority (Nagi and Hamdan 2009). These obstacles included the monopoly of feasible investment opportunities by a specific group of investors, high income and sales tax, administrative bureaucracy and the multiplicity of authorities required to be reviewed to obtain licenses, lack of marketing programs suitable for the Jordanian market, high production and financing costs, energy prices, and the political situation unfavorable, stability in the region and neighboring countries, the lack of clear strategies for investment.

7   Study Results and Hypothesis Testing

Multiple linear regression analysis was used on each of the independent study variables (the factors driving investment) to reveal the factors that have a positive impact on economic development (the dependent factor), as well as their arrangement in terms of importance from the point of view of investors in Jordan. Based on the aforementioned literature, nine (9) variables were examined, and the results showed that there are seven (7) variables or factors that have a positive impact on economic development, according to the P- value of less than 0.05, as summarized according to Table 1. These factors included the security and political stability, incentives and facilities, guarantees, legal environment and stability of legislation, modern infrastructure, stability of the financial and banking system, openness of the state and easy access to global markets.

Table 1. Stepwise regression results that show important variables for the research model

Model		Non-standard transactions		uniform transactions	t	Sig.
		B	Std. Error	Beta		
7	(Fixed)	.034	.128		.264	.792
	Security and political stability	.119	.020	.189	5.999	.000
	Incentives and facilities	.070	.013	.145	5.363	.000
	guarantees	.075	.017	.127	4.471	.000
	Legal environment and stability of legislation	.064	.012	.147	5.282	.000
	modern infrastructure	.065	.012	.157	5.609	.000
	The stability of the financial and banking system	064	.020	.098	3.183	.002
	Openness of the country and easy access to global markets	.069	.014	.133	4.771	.000
a. Dependent factor: (economic development)						

Looking at Table 1, it is also possible to reveal the order of each of the factors driving investment in terms of importance and in influencing economic development in Jordan, given the value of Beta. Where investors gave security and political stability the first priority as an incentive to invest in Jordan (0.189), followed by modern infrastructure (0.157), then the legal and legislative environment (0.147), followed by incentives and facilities (0.145), and then the openness of the country and ease of access to global markets (0.133). Followed by the volume of guarantees (0.127), and finally the stability of the financial and banking system (0.098).

As for the unimportant variables or factors from the viewpoint of investors in economic development in Jordan, according to the study, which have a P- value of more than 0.05, they included both quality of life. 0.243, and labor and workforce efficiency 0.897, as shown in Table 2.

Table 2. Stepwise regression results that show the excluded variables from the research model excluded variables

Model		Beta In	t	Sig.	Partial correlation
2	Quality of life	.041o	1.175	.243	.122
	Labor and workforce efficiency	−.006o	−.130	.897	−.014
a. Dependent factor: (economic development)					

As a result, and through Table 1, which shows that there are only seven (7) factors that have an impact on economic development in Jordan with P coefficients less than 0.05, and Table 2 which shows that there are only two factors that have no effect on economic development in Jordan with P coefficients of more than 0.05. From the point of view of investors for the companies located in Jordan for the period between 2000–2020, results are summarized for all the hypotheses as shown in Table 3.

Table 3. Summarizing the results of the hypotheses

Result	Hypothesis	Factor
Supported	First Hypothesis: (H1) There is a positive effect of security and political stability in achieving economic development and stability in Jordan.	Security and Political Stability
Supported	The second hypothesis: (H2) There is a positive effect of the modern infrastructure in achieving development and economic stability in Jordan.	Modern Infrastructure
Supported	The third hypothesis: (H3) There is a positive effect of incentives and facilities in achieving development and economic stability in Jordan.	Incentives and facilities
Not Supported	Fourth Hypothesis: (H4) There is a positive effect of employment and the efficiency of manpower in achieving development and economic stability in Jordan	Labor and Workforce efficiency
Supported	Fifth Hypothesis: (H5) There is a positive impact of the legal structure and the stability of legislation in achieving development and economic stability in Jordan.	The Legal Environment and The Stability of Legislation
Supported	The sixth hypothesis: (H6) There is a positive effect of financial and banking stability in achieving economic development and stability in Jordan.	The stability of the financial and banking system
Supported	The seventh hypothesis: (H7) There is a positive effect of the country's openness and ease of access to global markets in achieving development and economic stability in Jordan	Openness of The Country and Easy Access to Global Markets
Supported	The eighth hypothesis: (H8) There is a positive effect of the guarantees provided to the investor in achieving economic development and stability in Jordan.	Guarantees
Not Supported	The ninth hypothesis: (H9) There is a positive impact of quality of life on achieving development and economic stability in Jordan	Quality of life

8   Benefits of Investing in Jordan

The investors who participated in the study, through the questionnaire, were given a list of ten (10) potential benefits and were asked to rank them in terms of importance and priority that play a major role in their decision to invest in Jordan or not. The questions aimed to examine and analyze how the respondents were classified. The responses of investors in the scale ranged from one (negative effect) to five (a very beneficial effect). The statistical analysis showed the order of benefits that investors aspire to, as shown in Table 4 below.

Looking at Table 4 above, it is clear that the most important benefit that investors look into to investment in Jordan is to achieve an increase income and profit, with an average of 4.306. The desire to achieve future personal stability ranked second in terms of importance, with an average of 4.241, followed by the importance of benefiting from the facilities and incentives in the country with a mean of 4.083, and then benefit from the investment guarantees in the country to be invested in, 4.028. Then take advantage of the diversity and alternatives that exist in the country with an average of 4,000, followed by the desire to keep pace with scientific, social, personal and professional developments with a mean of 3.898, followed by developing and improving the economy with an average of 3.361, and then optimizing the exploitation of human resources and reducing unemployment with an average of 3.351, followed by the desire to improve and support the national income with an average of 3.275, and finally to contribute to improving the standard of living of individuals with an average of 2.989.

Table 4. Arranging the benefits that investors aspire to achieve to invest in Jordan

Benefits	Sample size	Order	Median	Standard deviation
Increase income and profit	116	1	4.306	.8025
Desire for future personal stability	116	2	4.241	.7346
Take advantage of the facilities and incentives in the countries you want to invest in	116	3	4.083	.7987
Take advantage of investment guarantees in the country you want to invest in	116	4	4.028	.8141
Take advantage of the diversity and alternatives that exist in the countries you want to invest in	116	5	4.000	.7734
Desire to keep pace with scientific, social, personal and professional development	116	6	3.898	.8421
Develop and improve the economy of the country in which it is invested	116	7	3.361	1.1145
Optimum utilization of human resources and reduction of unemployment	116	8	3.351	.7754
The desire to improve and support the national income in the country to be invested in	116	9	3.275	.8457
Contribute to improving the standard of living of individuals	116	10	2.989	.8162
(The sample is on the list)	116			

9   Investment Obstacles in Jordan

The investors who participated in the study, through the questionnaire, were given a list of seven (7) potential obstacles that investors fear and limit their investment in Jordan, and were asked to rank them in terms of importance and priority. The questions aimed to examine and analyzes of how respondents categorized the obstacles related to non-investment. The answers of investors in the scale ranged from one (not restrictive at all) to five (very severe restrictions). The statistical analysis showed the order of obstacles to investment in Jordan as shown on Table 5 below.

Looking at Table 5 above, it is clear that the most important obstacles that limit investment in Jordan are the administrative bureaucracy and the multiplicity of agencies required to be reviewed to obtain licenses, with an average of 3.56. The second obstacle is the high cost of production and financing with an average of 3.45 followed by high

Table 5. Arranging the obstacles that limit investment in Jordan

Obstacles	Sample size	Order	Median	Benefits
Administrative bureaucracy and the multiplicity of bodies required to be reviewed to obtain licenses	116	1	3.56	1.29
High cost of production and financing	116	2	3.45	1.39
High income and sales tax	116	3	3.29	1.35
Energy prices	116	4	3.14	
The unstable political situation in the region and neighboring countries	116	5	2.59	1.38
Lack of clear investment strategies	116	6	2.52	1.24
Monopolizing feasible investment opportunities by a specific group of investors	116	8	2.33	1.19
(The sample is on the list)	116			

income and sales tax with an average of 3.29. Then, energy prices ranked fourth with average of 3.148, then the unstable political situation in the region and neighboring countries ranked fifth, with a mean of 2.59, followed by the absence of clear strategies for investment, with a mean of 2.52, and finally came the monopoly of feasible investment opportunities by a specific group of investors, with an average of 2.33 The least important rank as a determinant of investment in Jordan.

10   Results

In this research, literary reviews related to the study of the investment climate were used and to identify the role of investment in achieving economic development and stability in the era of the Fourth Kingdom of Jordan. Use quantitative analysis to answer research questions and achieve research objectives. This study aimed to identify the main factors that affect investors' decisions to invest in Jordan and to identify the factors that motivate and encourage them to do so. The study also aimed to identify the hoped-for benefits and potential obstacles to investment through the experiences of investors. Moreover, this study worked on evaluating the impact of each factor that motivates investment on economic development and knowing the extent of its impact in order to come up with practical recommendations for the Jordanian government to determine the research outputs.

The specific results of the research can be summarized as follows:

1. From a review of the literature and the archives of the Jordan Investment Commission and the investors in Jordan, it was found that there were many factors that were necessary and play an important role in the decision to invest in Jordan. From these factors, a conceptual model was developed. This model consists of nine factors that were used to verify the role of investment in achieving development and economic stability during the era of the Fourth Kingdom of Jordan.

2. This study provides a contribution to the investment literature by identifying a number of variables that can play a major role in influencing investors' decision to invest in Jordan and its impact on economic development. From the regression test that was applied to the variables or factors that were developed from the literature review, it was found that there are 7 out of 9 variables that are important from the point of view of investors and push them to invest in Jordan. Where these factors included in terms of importance and in order security and political stability, incentives and facilities, guarantees, legal environment and stability of legislation, modern infrastructure, stability of the financial and banking system, openness of the state and easy access to global markets.

3. As for the unimportant variables or factors from the investor's point of view, which are not important in determining the investment decision or not in Jordan, according to the study, they included quality of life, employment and the efficiency of manpower. As for the quality of life, this can be explained by the fact that investors in most cases may have their country of residence outside Jordan, and therefore they may not be concerned with the quality of life, such as schools, universities, hospitals, recreational facilities, and others. As for the labor and the efficiency of the labor force, the reason for its lack of importance may be attributed to the possibility of importing manpower from outside Jordan, training it, and benefiting from the low wages and its commitment to work more.

4. The study showed that there are certain benefits that investors aspire to achieve through their investments and projects in Jordan. Investors categorized the desired benefits when investing in terms of their importance as follows: Achieving an increase in income and material profit. The desire to achieve future personal stability ranked second, followed by the importance of benefiting of facilities and incentives, and then benefit from investment guarantees, then benefit from diversity and existing alternatives, followed by the desire to keep pace with scientific, social, personal and professional developments, followed by developing and improving Jordan's economy, then optimizing the use of human resources and reducing unemployment, followed by the desire to improve and support the national income, and finally, the contribution in improving the standard of living.

5. The study showed that there are specific obstacles that hinder investment in Jordan. Investors categorized the obstacles that hinder investment in terms of their importance as follows: administrative bureaucracy and the multiplicity of bodies required to be reviewed to obtain licenses. The high cost of production and financing came in second place, followed by the rise in income and sales tax, then energy prices ranked fourth, then the unstable political situation. In the region and the neighboring countries ranked fifth, followed by the lack of clear strategies for investment, and finally came the monopoly of feasible investment opportunities by a specific group of investors in the least important rank as determinant of investment in Jordan.

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Does Ownership Structure Moderate the Relationship Between Corporate Governance and Corporate Social Responsibility Disclosures? Evidence from Emerging Countries

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Abstract. This paper aims at examining the ownership structure's impact on the relationship between corporate governance and social responsibility disclosure. The paper relied on content analysis of the financial reporting of the industrial firms listed on the Amman Stock Exchange (ASE) for a 5-year period (2016–2020), where the Panel Data method was adopted. The findings showed a positive relationship between social responsibility disclosure and gender diversity of the board of directors' members and. It also shows a negative relationship between social responsibility disclosure and the board of directors' independence, the audit committees' independence, and the size of the board. The results of the analysis also showed no relationship between social responsibility disclosure and nationality diversity, qualifications of board members, and CEO duality. Concerning the moderating impact of ownership structure, the results indicated that the ownership structure positively affected the relationship between (Independence of the board, nationality diversity, and social responsibility disclosure, and negatively affected the relationship between (Independence of the audit committee and board size) and social responsibility disclosure. These findings are valuable to explore the impact of corporate governance on social responsibility disclosure, along with the role of the ownership structure on the relationship between social responsibility disclosure and corporate governance.

Keywords: Corporate governance · Ownership structure · Corporate social responsibility disclosure

1 Introduction

The Federation of International Accountants has increasingly become interested in a new accounting branch known as social responsibility accounting. This is a result of increasing pressure from developed countries on companies to conserve the environment against pollution caused by these companies and the government's inability to afford the large costs of removing these wastes. Thus, companies have been obliged to preserve the environment and assume responsibility for the society that exploits its resources (Matar

2012). Hence the need to apply corporate governance, which imposes legal frameworks that monitor and compel the companies managements to disclose social information at their companies, carry out service projects, such as training, development, establish of health and medical facilities, and many other service projects (Ali and Atan 2013).

The social responsibility disclosure was considered an important type of disclosure that the companies' managements must abide by to contribute to giving a positive indicator to the company and because of the role it plays as a tool to attract investors and regain their confidence, in particular those who have great interest in service projects. The ownership structure plays a vital role in controlling the work of executives and reducing their opportunistic behavior and contributing to reducing the agency's cost, as the agency's theory suggests (Javeed and Lefen 2019). It also has an impact on the level at which companies provide their social responsibility because of the expected costs.

Due to the different results of research papers on the effect of governance variables on social responsibility disclosure, this has created an area for further studies to determine the extent to which corporate governance affects the social responsibility disclosure and the search for other factors, influencing the relationship between applying corporate governance and the social responsibility disclosure level, such as the structure of ownership. Because firms in Jordan are characterized by being centralized ownership, i.e. the shares of firms are concentrated in the hands of certain entities, such as family property, property of major shareholders, or government ownership, so the current work demonstrates the impact the ownership structure on the relationship between social responsibility disclosure and corporate governance.

Against this, the role played by the ownership structure is highlighted as a modified variable on the relationship between social responsibility disclosure and corporate governance. Also, this study focused on many mechanisms related to the board of directors' members themselves such as gender diversity, nationality, and scientific qualifications measured in a new method (certificates of members associated with the work of the company).

The scientific contribution focuses on the impact of corporate governance on the social responsibility disclosure, as well as the interest in knowing the extent to which the mechanisms associated with the board of directors' members themselves (gender, nationality, and scientific qualifications) affect the social responsibility disclosure on the one hand. On the other hand, as the Jordanian companies are characterized by high ownership structures, especially family ones, this study explores the ownership structure's role as a moderating variable on this relationship.

The remaining structure of this paper is divided into following sections. The following section reviews the extant literature and creates the research hypotheses, while section three describes the data and methodology used by this study. Section four shows the related empirical results. The conclusions, limitations, and some ideas for future studies are presented in the final section.

2   Literature Review

2.1   Corporate Governance and Social Responsibility Disclosure

Corporate governance's work is to regulate the relationships of the management and the board of directors and stockholders representing the internal parties (Board of directors, Ownership Structure, Disclosure, and Transparency) (Ajlouni 2007). The study focused on discussing corporate governance and its impact on corporate social responsibility disclosure. The world's current businesses show growing attention related to the companies' role in communities and the extent to which they care about this aspect. Social responsibility and disclosure are one of the most important aspects that indicate the extent to which the company contributes to the community (Desender 2009). Corporate social responsibility of the companies is a transparent and flawless business practice based on values, morals, and respect for employees, stockholders, and society (Ali and Atan 2013).

The social responsibility disclosure is now a significant issue and concerns are raised by the increased demand of stakeholders for information related to these activities, which went beyond traditional financial considerations, including the safety and validity of the activities carried out by the company and the extent to which companies affect the environment and society. This is why there has been an increasing demand by stakeholders, particularly investors, to provide data of the annual reports of the company to understand the company's activities and the good use of economic resources in internal and external business activities (Ali and Atan 2013; Hassan et al. 2020; Ibrahim and Hanefah 2016). Social responsibility disclosure has become a tool for attracting investors. The companies that disclose their social responsibility are more likely to invest in them than those that do not disclose their social responsibility because social responsibility disclosure has an effect on the reputation of the company, increased customer loyalty, and level of financial performance (Said et al. 2009).

Beji et al. (2020) aimed to demonstrate the extent to which the board of directors' features are linked to the companies' social responsibility at the global level. The study sample included 120 companies for the period (2003 to 2016). The results indicated a positive correlation between the large boards, gender diversity in the boards, the age diversity of the members of the board, the presence of independent directors with academic qualifications and experiences with the dimensions of social responsibility, and the negative correlation between the structure of CEO with limited and comprehensive social responsibility grades. Another related work done by (Vacca et al. 2020) aimed to show the role of diversity in the board of directors as a mediating variable in the relationship of the tax aggression and social responsibility disclosure, where the study sample included 168 Italian companies working from 2011 to 2018. The findings indicated that gender diversity of board members has positively influenced the social responsibility disclosure and improved the companies' orientation towards social responsibility. However, this has not influenced tax aggression, and that the gender of the CEO has positively impacted the relationship between the tax planning process and social responsibility reports. Mousa et al. 2018, examined the governance relationship statement and its impact on social responsibility disclosure. Mousa et al. 2018 study aimed to demonstrate the government's relationship and its effect on social responsibility disclosure. The

study included a group of firms listed on the stock exchange of the Gulf Cooperation Council GCC. The study sample consisted of 246 companies, including 104 industrial and 141 non-industrial companies, and considered the data for 2016. The results of the analysis indicated that both the board of directors' size and non-executive directors have positively affected the social responsibility disclosure. The findings indicated a negative relationship between the gender diversity of the board of directors' members, audit committees, and CEO duality and the social responsibility disclosure.

2.2 Independence of the Board of Directors

Past literature on corporate governance indicates the highest degree of professionalism of the independent members in the listed companies since their presence reduces the likelihood of complicity among executives. Their presence facilitates the implementation of tasks and the well-used use of fixed resources and enhances the oversight performance of executives. Ensuring the board of directors' independence is the primary objective of governance reforms for both emerging and advanced markets (Makhlouf et al. 2017). Beji et al. (2020) pointed out that independent board members positively affected the social responsibility disclosure's level.

In light of the agency theory, the independent board of directors can present an external opinion of great value to the company and seek to do more community activities and disclose its information. From the viewpoint of the theory of stakeholders, the main role played by managers is to preserve the interest of stakeholders by making good decisions that help improve the performance of the company in terms of financial and social aspects. The theory of reliance on resources is based on the benefit sought by the independent members (Triana 2009) On this basis, the first hypothesis is:

H1: There is a relationship between the independence of the board of directors' members and the social responsibility disclosure.

2.3 The Board of Directors' Demographic Characteristics

Board members' diversity is regarded as a significant and vital issue related to corporate governance (Barako and Brown 2008). Walt and Ingley (2003) have identified diversity in board members and recognized it as a diverse mix of features, experiences, and characteristics that distinguish each other and improve the Board's decision-making process and work. Diversity in the Boards has become important as a result of the high level of diversity in the labor force in terms of age, gender, nationality, and scientific qualifications (Darmadi 2011; Ibrahim and Hanefah 2016). From the agency theory's standpoint, the more diverse the Board, the better the control over management, the greater the diversity will increase the independence of members (Ibrahim and Hanefah 2016), resulting in the company's tendency to disclose more community information as it reduces agency costs and asymmetry of information and further protects the company's reputation. The concept of stakeholder theory increases the guarantee of greater protection of stakeholder interests. In the reliance on resources theory, diversity of members increases the resources delivered by Board members, namely: information, skills, and access to several decision-makers and suppliers. This theory believes that the real

diversity of board members will make them use high-quality information and improve the decision-making process (Ibrahim and Hanefah 2016).

2.4 Diversity by the Board Members' Gender

Among the most significant forms related to the concept of diversity on boards is the women's presence on boards (Riyadh et al. 2019). The female element's presence increases the level of social giving. Beji et al. (2020) pointed out that the female element is more interested in green issues and has a substantial role in improving the Board of directors' efficiency in terms of environmental policies. Diversity in the Boards is positively related to the social responsibility areas. Sundarasen et al. (2016) showed the excellence of the female element in having different professional values than men. It increases the level of concern for social responsibility because women have a high societal sense. Therefore, the second hypothesis is:

H2: There is a relationship between the female element's presence within the Board members and the social responsibility disclosure.

2.5 Diversity the Board Members' Nationality

The nationality's diversity of the board members provides good dealing with the company's different stakeholders and enhances the decision-making's quality due to the foreign member's high efficiency and performance. Ayuso and Argandoña (2009) pointed out that foreign members provide the company with various knowledge that helps improve the firm's strategic decision-making; such as corporate social responsibility reporting strategy. Masulis et al. (2012) pointed out that as foreign managers are highly independent because they are strangers, a huge amount of disclosure and transparency is expected to be executed by these foreign managers. Foreign members have extensive contacts with many different stakeholders who may benefit the company. Thus, the third hypothesis is:

H3: There is a relationship between nationality's diversity of the board members and social responsibility disclosure.

2.6 The Audit Committee's Independence

The audit committee has an impact on the entire corporate governance structure, as put by (Assenga et al. 2018). The company's potential for financial distress is mainly due to the auditor's report, which indicated that there was a small percentage of the company's risk of financial distress, but in fact, there are high rates to the contrary (Ali and Atan 2013). Ali and Atan (2013) showed the audit committee's independence's significant effect on the independence and objectivity of the external auditor and effectively improves the performance of the company. In other words, whenever the audit committee is independent, the company's performance and disclosure level of community activities is strongly improved. As a consequence, the fourth hypothesis is:

H4: There is a relationship between the audit committees' independence and the social responsibility disclosure.

2.7 CEO Duality

Separate roles improve the monitoring process and reduce the withholding of information, leading to improved quality of financial reports. However, CEO duality or so-called "CEO dominance" has negative affected the social responsibility disclosure's level where combining them reflects on issues of corporate governance. Having one person in two posts at the same time prevents the Board from exercising effective control and causes weak oversight of the CEO, allowing him to make decisions to maximize his or her benefit instead of shareholders benefit (Ali and Atan 2013). Based on the viewpoint of the agency theory, the agency's problems are becoming increasingly difficult with CEO duality(Adekunle 2014). Therefore, the fifth hypothesis is:

H5: There is a relationship between the CEO duality and social responsibility disclosure.

2.8 Scientific Qualifications for Board Members

The educational field is one of the most important aspects that enhance the performance of the company, the educational level reflects the experience and competence of members (Makhlouf et al. 2017). The qualified board members are characterized by their broad opinions (Boulouta 2013) as a result of their scientific expertise and backgrounds. In addition, they are may have research backgrounds on social responsibility and its importance, thus encouraging the company to perform well in social responsibility and disclose its information more (Homroy and Slechten 2016). Darmadi (2011) study found that a Board with members having postgraduate degrees (Master and Doctoral Degrees) or university degrees from prestigious local universities have creative ideas, intellectual strength, and distinctive perspectives that allow them to deal with different issues effectively. However, this study will deal with the study of scientific qualifications on a different side, which is the effect of having members with certificates in the same field of the company's work on the social responsibility disclosure. Thus, the sixth hypothesis is:

H6: There is a relationship between the scientific qualifications of the board members and the social responsibility disclosure.

2.9 The Size of the Board of Directors

The board of directors' size is defined as the members' number (Arora and Dharwadkar 2011). Ali and Atan (2013) showed that the board of directors' size positively affected the social responsibility disclosure's level and increased the board's efficiency and capability to better monitor the performance of executive directors. Beji et al. (2020) indicated that the big number of the board of directors is positively associated with the social responsibility disclosure. Therefore, the seventh hypothesis is:

H7: There is a relationship between the Board size and the social responsibility disclosure.

2.10   Ownership Structure as a Moderating Variable

Little literature has explored the effect of the ownership structure as a moderating variable on the relationship between corporate governance and social responsibility disclosure such as (Bansal et al. 2018). The results of his study including 29 countries from 2006 to 2014 indicated that family ownership decreases the concerns of the independent director about the reputational risks coming from misinformation, which contribute to reducing the agency's type 1 problems because the management will be of the same family on the one hand, but will create problems of the agency type II. Akben Selcuk and Kiymaz (2017) pointed out that the 4-year data of the non-financial firms working at the Istanbul Stock Exchange showed that social responsibility has positively influenced the companies' financial performance. The study also showed that the ownership structure has negatively affected the relationship between financial performance and social responsibility.

It has been noted that many studies have studied the structure of ownership as a moderating variable since the Jordanian environment is characterized by the presence of ownership structures, especially family property. Accordingly, the eighth hypothesis is.

H8: Ownership structure affects the relationship between the corporate governance in all its variables and the social responsibility disclosure.

3   Methodology

3.1   Study Sample and Study Population

The study sample includes all 46 industrial firms listed on the Amman Stock Exchange. Only 44 firms were selected to meet the required standards and have the necessary data to measure their variables. The study covered the period 2016 to 2020. The method of data analysis was used to analyze the content of the financial reporting of industrial firms listed on the Amman Stock Exchange using (Panel Data) method.

3.2   Variables Measurement

The social responsibility disclosure's dependent variable was measured using the data content analysis of the selected industrial firms listed based on several key items, namely: (information on environmental activities, employee care, rehabilitation courses, community participation, and information on products or services). Thirty-eight (38) sub-items were approved for the measurement. The social responsibility disclosure was measured by giving number (1) if the information related to social responsibility disclosure was disclosed and (0) if not disclosed. Then, the disclosure was calculated by the actual degree's rate granted to the firm. The following table summarizes the study variables (Table 1).

Table 1. Dependent variables (Social responsibility disclosure)

Social responsibility disclosure	TOIG	A number is given (1) if the information associated with the CSR disclosure is disclosed (0) if it is not disclosed
Independent variables (corporate governance)		
Board of directors Independence	NED	Ratio of independent board members to the full number of members
Diversity by the gender of board members	GD	Women's percentage on the board of directors
Diversity with the nationality of board members	ND	Foreign members' percentage of the board of directors
Independence of the Audit Committee	ACIND	Independent members' ratio of the Committee to the total number of members of the Committee
CEO duality	CEO	If the Board of directors' Chairman of is the CEO of the (1) company, (0) if otherwise
Education qualifications	ED	Percentage of board members with certificates related to the work of the company to the total number of members
Board size	SIZE	Board members' Number
Moderating variables (ownership structure)		
Ownership structure	OCEN	Ratio of family-controlled shares to total company shares
Control variables		
Firm size	FSIZE	Total assets' logarithms
Firm profit	PRO	Return on assets
Leverage	LEV	Total liabilities divided by total assets

4   Statistical Analysis and Results

4.1   Descriptive Analysis

The variables' descriptive statistics adopted in showing the impact of the ownership structure on the relationship between corporate governance and the social responsibility disclosure in Jordanian industrial firms are shown in Table 2. The results show that the average interest in the social responsibility disclosure in industrial companies is 34%, with a maximum of 0.743, and a minimum of 0.

4.2   Diagnostic Tests

Several tests were performed to ensure that there was no problem with the multiple linear correlations among the variables that lead to an unreliable independent variation

Table 2. Descriptive analysis

Variable	Obs	Mean	Std. Dev	Min	Max
TOIG	220	0.348	0.169	0	0.743
NED	220	0.390	0.338	0	1
ND	220	0.160	0.290	0	1
GD	220	0.024	0.094	0	0.8
ACIND	220	0.150	0.338	0	1
CEO	220	0.090	0.280	0	1
ED	220	0.332	0.280	0	1.56
SIZE	220	7.545	2.284	4	13
OCEN	220	0.154	0.121	0	0.955
FSIZE	220	7.231	0.606	5.556	8.996
PRO	220	0.0006	0.099	-0.36	0.42
LEV	220	0.335	0.224	0.005	1.495

coefficient (Gujarati 2015). In this study, the Pearson correlation coefficients were used as the first indicator to verify the problem, as the correlation matrix's results showed that the variables included in the standard model did not contain problems of self-correlation among the variables, thereby enhancing the results of the credibility and accuracy related to the regression analysis. To verify that there is no problem of linear correlation among the variables, the High Coefficient of Variation test and the inverse of the high correlation of variation for the two models of the study were conducted.

The first model clarifies the direct relationship between corporate governance and social responsibility disclosure. Whereas, the second model explains the impact of the moderating variable "the structure of ownership" on the relationship between corporate governance and social responsibility disclosure. The test's results indicated that there were no multiple self-correlation problems in the adopted model. The variation's high coefficient was less than 10 and TOL values exceeding 10% for all the variables. The (Heteroskedasticitiy) was conducted to determine whether the study data had any problems related to the testing measurement models. The test results indicated that the value of Heteroskedasticitiy was 0.783 and the probability value was 0.08. This indicates that there are no problems of homogeneity among the study variables. To know the nature of the data, a test of the study model was conducted. With that, the Hausman test was carried out. After performing analysis and comparison, it was concluded that the appropriate model is the fixed impact model.

5   Regression Analysis

Based on the tests conducted, we currently work on presenting the multiple linear test results for the direct relationship between corporate governance and the social responsibility disclosure as shown in Table 3. In model 1, the results indicated that the independent Board members' presence negatively affects the social responsibility disclosure and

this result corresponds to the results of the study of (Al-Zamil 2015; Abu Qa'dan and Suwaidan 2019). The findings also show a positive relationship between gender diversity of board members and social responsibility disclosure that is as per the results of the study (Beji et al. 2020; Ibrahim and Hanefah 2016; Mousa et al. 2018). The results also show that there is no relationship between the nationality diversity of the board members and social responsibility disclosure that is in line with the study of (Barako and Brown 2008; Ibrahim and Hanefah 2016). The results also indicated a negative relationship between the Audit committee's independence and social responsibility disclosure. This finding is elucidated by the fact that Jordan, as a country with family property structures, usually prefers its directors to control all activities and actions carried out by the company.

Therefore, the effect of the audit committee' s members' independence is low under the family-controlled company (Darus et al. 2013). The findings indicate that there is no relationship between dual roles and social responsibility disclosure and this finding is clarified by reference to the corporate governance guide of the Jordanian companies approved to alleviate and evade conflicts of interest and maintain the quality of control. Two different persons should be appointed to both positions. It is better to select an independent member to be the CEO of the company to guarantee the board of directors' effective performance (Corporate Governance Rules Manual 2017). The results indicated that there is no relationship between the practical qualifications of board members and social responsibility disclosure. The results also indicated that there is a negative influence between the size of the board and social responsibility disclosure. This result is in line with the second point of view in the study of (Mousa et al. 2018).

Table 3. .

Variable	Model 1		Model 2		Model 3	
	Coff	P-value	Coff	P-value	Coff	P-value
Ned	-0.008	0.067	-0.008	0.083	0.0002	0.093
GD	0.055	0.058	0.056	0.054	0.057	0.638
ND	0.955	0.111	0.963	0.109	0.059	0.368
Acid	-0.020	0.021	-0.020	0.223	0.086	0.070
CEO	0.002	0.926	0.012	0.932	-0.018	0.615
ED	0.031	0.467	0.089	0.475	0.0001	0.998
SIZE	-0.007	0.037	-0.008	0.049	-0.003	0.025
OCEN			-0.023	0.062	0.225	0.151
NED*OCEN					0.014	0.095
GD*OCEN					0.014	0.991
ND*OCEN					0.264	0.075
ACIND*OCEN					-0.214	0.098
CEO*OCEN					0.085	0.470
ED*OCEN					0.294	0.401
SIZE*OCEN					-0.058	0.078
FSize	0.048	0.222	0.138	0.625	0.040	0.318
POR	0.051	0.413	0.053	0.404	0.049	0.444
LEV	-0.029	0.371	-0.031	0.350	-0.031	0.367
R^2	0. 60		0.616		0.62	
F- statistic	$21.23^{(0.0000)}$		$20.94^{(0.0000)}$		$19.24^{(0.0000)}$	

Model (2) illustrates the impact of the entry of the moderating variable on the relationship of corporate governance and social responsibility disclosure. The results indicate that the ownership structure variable has not affected the relationship between (nationality diversity of board members, independence of the audit committee, CEO duality, scientific qualifications, and board of directors' size) and the social responsibility disclosure. However, it has a negative impact on the relationship between board independence and social responsibility disclosure and a positive impact on the relationship between gender diversity of board members and social responsibility disclosure.

As for the results of the interactive relationship between the ownership structure, moderating variable, and the social responsibility disclosure, the results indicate that the moderating variable and ownership structure have a positive impact on the relationship between the board members' independence and the social responsibility disclosure, which is consistent with the study of (Al-Samuni 2019). The ownership structure has negatively affected the relationship between the gender diversity of the board members and the social responsibility disclosure and this result can be justified by the lack of interactive capacity between shareholders with management. Since the ownership of the company is considered one of the most determinants that enhance the company's performance and this causes the agency's first-type problems between shareholders and management due to inconsistencies in information, including information on social activities (Al-Samuni 2019).

The ownership structure has a positive impact on the relationship between the board members' nationality and the social responsibility disclosure, and this result is in proportion to the findings of (Ibrahim 2014; Hu et al. 2016). The results indicated that the moderating variable and ownership structure negatively affected the relationship between the Audit committee's independence and social responsibility disclosure and this finding is considered acceptable by the fact that families interfere with the company's management and work to make decisions that have an impact on social activities (Rees and Rodionova 2015). This result is in proportion to the study's findings. The findings also indicated that the moderating variable and ownership structure have no impact on the relationship between CEO duality and social responsibility disclosure, and this finding is accepted by the fact that the participation of some family members in decision-making affects community activities (Rees and Rodionova 2015).

Besides, this finding is in agreement with the results of (Badawy 2017). The results also indicated that the moderating variable and ownership structure have no effect on the relationship of the scientific qualifications and social responsibility disclosure, and this result can be justified by the lack of interest of companies in optional disclosure about community activities and only in the mandatory disclosure of community activity information (Salehi et al. 2017). The results indicated that there is a negative trend relationship of the ownership structure variable on the relationship between the board of directors' size and the social responsibility disclosure, thus this finding is justified by the belief that some firms consider that there is no need to participate in community activities and therefore this causes the lack of interest in social responsibility disclosure.

6   Conclusion

The objective of the current work is to understand the relationship between corporate governance and social responsibility disclosure on firsthand. Conversely, it shows the impact of the ownership structure (family control) on the relationship between corporate governance and the social responsibility disclosure for the period (2015–2019). This study relied on the content analysis of the financial reporting of the industrial firms listed on the Amman Financial Market and used (Panel data) method to attain the study's results. The findings of the direct relationship indicated that the relationship between (the independence of the members of the Board of directors, the audit committee's independence, and the board of directors' size) and the social responsibility disclosure are negative. It is clear that the relationship between gender diversity of the board members and the social responsibility disclosure is positive, and that there is no relationship between (nationality diversity of the board members, CEO duality, and scientific qualifications of board members) and social responsibility disclosure.

It has been noted that the control variables (company size, company profitability, financial leverage) have no impact on that relationship. The results of the interactive relationship between the moderating variable (ownership structure) by corporate governance indicated that the moderating variable has positively affected the relationship between (board members' independence, nationality diversity of the board members) and social responsibility disclosure. The findings also indicate that the moderating variable (ownership structure) had a negative impact when multiplied by the independent variables represented in (the audit committee's independence and the board of directors' size). As for the interrelationship between the moderating variable (ownership structure) and multiplied independent variables (gender diversity of board members, CEO duality, and scientific qualifications of board members), the moderating variable has no impact on these variables, while the controlling variables represented in (company size, company profitability, and leverage) had no impact.

The results of this study provide a broad input and addition to the developing countries' studies similar to the economic situation of the sample country in understanding the relationship between corporate governance and social responsibility disclosure. In addition, the study also finds the impact of ownership structures on this relationship, the need for Jordanian industrial companies to abide by the rules of corporate governance and demonstrates that the large size of the board of directors has not positively affected the social responsibility disclosure, as well as highlights the importance of social responsibility and its disclosure. In future studies, the same study sample represented by the industrial companies can be replaced by another sample, for example, insurance companies, banks. Other methods can be followed to measure ownership structures instead of family property, which the study targeted with administrative and governmental property, along with taking more governance variables that were untargeted by the study.

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Intention Towards Using Loan in Income Generating Activities: A Conceptual Study Among Poor and Low-Income Households

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Abstract. Despite the fact that the country has done a remarkable job of reducing poverty, globalization has brought with it some serious problems and worries. As the country moves into a new category of poverty, the following issues must be addressed. Malaysia is an impoverished country with a diverse population segmented by ethnicity and religion. In reality, Malaysia has the potential to exacerbate social ills. In Malaysia, poor individuals in both rural and urban areas because poverty has long been considered primarily a rural issue in Malaysia, with more than half of all family units falling into this group. As a result, Malaysia Government tends to provide loans is not strict requirements to generate income. Despite this, there is currently a lack of study on the impact of anti-poverty efforts on community welfare in Malaysia based on the perspectives of poor and low-income households using the loan to generate income through entrepreneurial activity. Indeed, the Theory of Planned Behavior is justified as an underpinning theory for investigating the links between the origins of entrepreneurial intent. Besides, recommendations from past studies suggested that entrepreneurial education must be included to assess entrepreneurial intentions. As a result, this paper capable provided a conceptual framework related to the Theory of Planned Behaviour to justify the goals of low-income people in relation to the Malaysian government's incentive provided which is a non-strict requirement to obtain loans to improve their income through entrepreneurial activity by includes five variables: attitude, subjective norms, perceived behavioral control, and entrepreneurial competencies as well as entrepreneurial education.

Keywords: Attitude · Entrepreneurial competencies · Entrepreneurial education · Entrepreneurial intention · Perceived behavioural control · Subjective norms

1 Introduction

Despite the fact that the country has done a fantastic job in eradicating poverty, the globalization period has brought with it some significant challenges and concerns. The

following are important concerns that must be solved as the country enters a new category of poverty. Recent poverty research has shown the value of dividing a population into subgroups or districts based on ethnicity, religion, or other criteria. In actuality, it has the potential to aggravate social issues, particularly in Malaysia (Abdullah et al. 2016; Hassan and Rasiah 2017). In actuality, Poverty was a different way of looking at a multi-dimensional subject like a socio-economic problem (Abdullah et al. 2016; Mohd Ali et al. 2015; Hassan and Rasiah 2017). As a result, the widely accepted notion of low income has resulted in hardship and the inability to meet basic demands (Abdullah et al. 2016; Ravallion 2019). Furthermore, both of these hazards were connected to hunger and poor living conditions (Ravallion 2019). While the definition of poverty was once tied to one's degree of health and education, that was no longer the case (Abdullah et al. 2016; Ravallion 2019). According to Ravallion (2019) and Abdullah et al. (2016), poverty is exacerbated by unrestricted health and a lack of education.

The adopted political aims were stating the poverty problem (Abdullah et al. 2016; Ravallion 2019). This definition of basic essentials should include two important elements. To begin with, household consumption expenditures such as food, clothing, and other needs were usually sufficient to meet the minimum requirements. Second, essential services such as electricity, public transit, health, and education were evaluated using a household income comparison. The Poverty Line Income was the term used to describe this (PLI). Meanwhile, income, as assessed by the Base Line Poverty Level (PGK), which is either poor or not poor, determines the degree of poverty (Dawood and Khoo 2017). The word "relative poverty" refers to how money is distributed. Individual welfare levels are compared by contrasting them with those of other individuals. As long as there remains an imbalance or inequality in the income distribution, relative poverty will exist and will not be eased.

Even while absolute poverty can be alleviated, the greater the wealth disparity, the worse the relative poverty problem grows. When household income is compared to the PGK, Malaysian poverty is defined as absolute poverty, according to this definition (Dawood and Khoo 2017). Poverty has long been considered a rural concern, with more than half of all family units falling into this category (Gopal and Malek 2015; Islam et al. 2017). Because a large number of new poor family units are settling in metropolitan areas, the repercussions of poverty are severe. Innovative inner-city development policies and strategies must be executed with a strong commitment to programmed planning and funding allocation (Gopal and Malek 2015; Samer et al. 2015). The influx of international migrants including legal and unregulated combined with rural and urban migration result on exacerbated urban poverty (Gopal and Malek 2015; Samer et al. 2015).

In reality, although Malaysia government provided several social programmed such as non-strict loan requirement applications especially for poor or low-income individuals but the loan applied mainly for daily expenses instead for generate income through entrepreneurial activity. As a result, based on TPB theory, the goal of this study is to present a conceptual understanding about low-income people's intents with the loan for raising their income through entrepreneurial activity.

2   Literature Review

According to Abdulkareem et al. (2020) and AbdulKareem et al. (2019), the major aspects in TPB as predictors of behavioural intention offered in this study were chosen as the conceptual framework of this study (2019). The TPB consists three elements namely attitude, perceived behavioural control, and subjective norms has provided a systematic framework for investigating the factors that influence intention and behaviour, and it has been applied to a variety of activities, including entrepreneurial intents (Awang et al. 2016; Hong et al. 2020; Said et al. 2021; Usman 2019; Said et al. 2020). However, entrepreneurial competencies and entrepreneurial education should be included for studying the model regarding entrepreneurial intention based on the suggestion from Carruthers et al. (2019) and Maheshwari and Kha (2021). Hence, this study consists five variables namely attitude, perceived behavioural control, subjective norms, entrepreneurial competencies, and entrepreneurial educations.

2.1   Attitude

An individual's attitude as favourable or unfavourable, as well as cognitively and effectively analysing the behaviour, according to Anwar et al. (2021). Attitude is one of the key constructs used in TPB as a determinant factor for behavioural intention (Knauder and Koschmieder 2019; Nugroho et al. 2018; Said and Saad 2016; Seol et al. 2016). Non-industrial private forest owners in Norway are asked about their entrepreneurial views and the prospect of launching a business in a study of the TPB as applicable and stated that a start-probability up's is a function of perceived opportunity and risk aversion based on attitude (Poduška et al. 2020). Poduška et al. (2020) stated that a start-chance up's is based on the impression of opportunity and risk aversion (attitude) as reveal that the chance of establishing a business is linked to both opportunity recognition and risk aversion. Personality traits including risk aversion, accomplishment motivation, and a preference for innovation reviewed by Chen et al. (2018) and Olive-Tomas (2020) which help entrepreneurs spot possibilities more successfully than the general population. They also point out that the desire to succeed is a major psychological factor that impacts human behaviour and entrepreneurial behaviour (Chen et al. 2018; Olive-Tomas 2020).

Indeed, self-employment utility has been connected to the decision to act entrepreneurially (Hatak et al. 2015), with individuals with more favourable entrepreneurial attitudes and talents more likely to acquire higher levels of value in self-employment than in the workplace (Liguori et al. 2020). According to earlier research by Fragoso et al. (2020) and Liguori et al. (2020), risk tolerance, income, and the need for independence all play a part in the decision to work for oneself. People who have a higher risk tolerance and positive views about money and independence are more likely to want to establish their own firms. Despite the fact that their sample (MBA students) may not be representative of the general population in this respect, Liguori et al. (2020) noted that Douglas and Shepherd's study from 2002 showed no indication of a relationship between work effort views and entrepreneurial tendencies. Individual opinions on money, independence, risk, job effort, and net perquisites may differ, but those who

believe these characteristics will provide higher value (or less disutility) are more likely to have entrepreneurial inclinations.

As a result, the following is the hypothesis regarding attitude and entrepreneurial intentions:

H1: Attitude influences entrepreneurial intent positively.

2.2 Subjective Norms

Subjective norms are "a person's thoughts about whether significant individuals think he or she should engage in the behaviour," according to Santos and Liguori (2019). In a number of intention and behavioural studies, the subjective norms variable has been used as an antecedents or determinants factor of intention and behaviour. Subjective norms were used as one of the elements in the studies of Santos and Liguori (2019) and Yousaf et al. (2015) to examine if subjective norms impact entrepreneurial intention and what role family background plays in entrepreneurial intention. According to Santos and Liguori (2019) and Yousaf et al. (2015), the more beneficial subjective norms are, the greater the intention. If the objective behaviour is more desirable to the individual, the intention will be higher. People in the entrepreneur's circle feel he or she should behave in a certain way. The perceived societal pressure to pursue entrepreneurship as a vocation is one of the components that precede the choice referred to as the subjective norm.

In addition, persons in a person's surrounding environment, such as relatives, family, and friends, have an important part in his or her decision-making (Liguori et al. 2020; Yousaf et al. 2015). These normative attitudes are measured using the incentives of family or friends to influence their proposals, thoughts, or gestures (Hong et al. 2020; Said et al. 2021). These beliefs are measured in the field of entrepreneurship study using a trustworthy construct that looks at the expected support or motivation of significant people and friends for starting a business (Hong et al. 2020; Liguori et al. 2020; Said et al. 2021; Yousaf et al. 2015).

As a result, the following is the hypothesis for subjective norms and entrepreneurial intentions:

H2: Subjective norms influence entrepreneurial intent positively.

2.3 Perceived Behavioural Control

Perceived behavioural control is "an individual's perception of how simple or difficult it is to do the behavior", according to Dinc and Budic (2016). Hence, this definition has been adopted by a number of previous researchers in their study (Hong et al. 2020; Liguori et al. 2020; Said et al. 2021; Yousaf et al. 2015). Several additional research have discovered that perceived behavioural control may properly detect purpose in a large percentage of situations, and it has been identified as an important component of entrepreneurial aims (Hong et al. 2020; Liguori et al. 2020; Said et al. 2021; Yousaf et al. 2015). Ambad et al. (2021) and Tran and Von Korflesch (2016) use the Entrepreneurial Event Model (SEE) to assume that the desire to start a business stem from a natural proclivity to act as well as perceptions of desirability and feasibility, both of which are

influenced by cultural and social factors. The natural propensity to act on one's decisions is the tendency to act on an opportunity, and it is based on one's control perceptions.

Based on the notion of self-efficacy, which refers to a person's belief in their own capacity to do specified tasks or behaviours (Blaese et al. 2021; Fellnhofer 2017; Newman et al. 2019). Controlling a situation, according to Newman et al. (2019) and Fellnhofer (2017), is an act of personal consciousness. However, perceived behavioural control related to self-efficacy attributes which create a "learning experience", according to Newman et al. (2019), Blaese et al. (2021), and Fellnhofer (2017).

As a result, the following is the hypothesis for perceived behavioural control and entrepreneurial intentions:

H3: Perceived behavioural control influence entrepreneurial intent positively.

2.4 Entrepreneurial Competencies

The formation and evolution of entrepreneurial purpose are influenced by an individual's beliefs and probable reactions to external stimuli (Carruthers et al. 2019; Choi and Sung 2017). Each individual forms a collection of beliefs and possible responses to environmental events. Individuals' beliefs are formed based on personal factors as well as variables related to the workplace (Baluku et al. 2019; Bignotti and Le Roux 2016), as individuals are the result of changes in their social environment as well as their past experiences (experiential learning, vicarious learning, action learning, problem learning, trial and error learning, and so on) (Baluku et al. 2019; Bignotti and Le Roux 2016). Hence, individual entrepreneurial competences are based on a variety of methods of learning and the combination of an individual's skills (Baluku et al. 2019; Bignotti and Le Roux 2016).

These ideas and potential reactions are a type of "saved knowledge" that governs human behaviour and is influenced by personal (personal history, personality, and abilities) as well as contextual (social, political, and economic context) factors (González-López, Pérez-López, & Rodrguez-Ariza, González-López et al. 2020; Ngah et al. 2016). Individuals form expectancies and attitudes based on unsaved information, which influences the individual and his or her intentions (González-López et al. 2020; Ngah et al. 2016; Rezaei 2017). Thus, entrepreneurial competences are regarded to be a predictor of entrepreneurial objectives since they appear to be integrally linked to behaviour and performance (Rezaei 2017). Indeed, entrepreneurial abilities shape people's views and expectations of activities and expected performance (González-López et al. González-López et al. 2020; Ngah et al. 2016; Rezaei 2017).

As a result, the following is the hypothesis for entrepreneurial competencies and entrepreneurial intentions:

H4: Entrepreneurial competencies influence entrepreneurial intent positively.

2.5 Entrepreneurial Education

Entrepreneurial education refers to the abilities and characteristics that individuals should develop in order to assist them in developing new and innovative plans (Kabir et al. 2017). Therefore, entrepreneurial educational is concerned with equipping individuals

especially student with the information and skills necessary to support future start-ups and entrepreneurial success. Educational activities are designed to foster individuals' entrepreneurial intents by pushing them to pursue entrepreneurial pursuits. Thus, entrepreneurial Intentions refers to a person's desire to create their own firm or work for themselves. Hence, individuals' entrepreneurial intent refers to their readiness to start new businesses and their ambitions to do so in the future (Maheshwari and Kha 2021).

According to Liu, Lin, Zhao and Zhao (Liu et al. 2019), there is a favourable association between entrepreneurial education and entrepreneurial intention of Chinese students; nevertheless, the study showed no apparent influence on entrepreneurial mindset. Oyugi (2015) found a substantial link between entrepreneurial education and entrepreneurial intention among Ugandan students, with self-efficacy mediating the association. Despite high satisfaction and better learning efficacy toward entrepreneurship education programmes, Taiwanese students' entrepreneurial intents showed a slight decline, according to Chen et al. (2013), which was attributed to the students' realisation that starting a firm was difficult. However, despite the fact that entrepreneurship education has a negative link with students' entrepreneurial ambitions, it is critical to cultivate their entrepreneurial spirit and improve their future job-oriented mindset. Although subject from past studies are universities students, the entrepreneurial training programs provided from governments agencies or universities might affect individuals who using loan to generate income.

As a result, the following is the hypothesis for entrepreneurial education and entrepreneurial intention:

H5: Entrepreneurial education influence entrepreneurial intent positively (Fig. 1).

3   Conceptual Framework
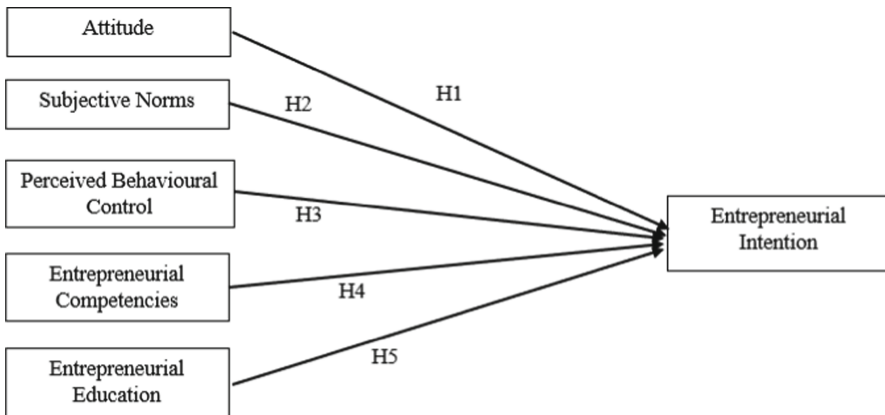
Fig. 1. The conceptual framework

4   Conclusion

Poverty has generally been considered as a rural issue, with more than half of all family units classified as poor (Gopal and Malek 2015; Samer et al. 2015). As a result, creative inner-city development policies and approaches must be implemented with a strong commitment to programme design and financial allocation (Gopal and Malek 2015; Samer et al. 2015; Zainudin and Kamarudin 2015). The flood of both legal and illegal foreign migrants, as well as rural and urban migration, increased urban poverty (Economic & Planning Unit, Malaysia 2010). As a result, the efficiency of anti-poverty programmes in improving the poor's living situations is a major problem. A study on the impact of anti-poverty initiatives on community wellbeing is still lacking in Malaysia, according to Zainudin (2021), despite the fact that Malaysia is an independent country with several social programmes, including economic and social investment. There is also a lack of understanding of poor or low-income people in Malaysia least use loan to generate income through entrepreneurial activity. As a result, the purpose of this research is to develop a conceptual understanding of low-income people's intentions regarding the loan obtained to help them improve their income using TPB theory and five variables: attitude, subjective norms, perceived behavioural control, entrepreneurial competencies, and entrepreneurial education.

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The Impact of the Corona Pandemic on Bank Credit: Case of Jordan

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Abstract. This study examines the impact of macroeconomic variables in addition to the Corona pandemic on bank lending in Jordan during 2008:01–2021:02, and thus using the Autoregressive Distributed Lag (ARDL) model, in order to reveal the long-term relationship between macroeconomic variables and bank lending. However, it became clear that all these macroeconomic variables contributed to bank credit in Jordan, and it was proven that there is a long-term relationship between them and bank credit. On one hand, the GDP, inflation, interest rate and coronavirus pandemic negatively affected the lending activities of commercial banks in Jordan, on the other hand, inflation had positively affected these activities.

Keywords: Bank credit · Unit root test · Co-integration · ARDL · COVID-19 · Jordan

1 Introduction

Banks play the intermediary role between the lender and the borrower by linking the two financial market parts; surplus and deficit. So, the commercial bank accepts deposits from customers who have surplus funds and uses them to grant loans for the deficit part of the financial market. Therefore, the role of credit is considered essential to economic growth and financial stability of the economy. Additionally, because commercial banks constitute an important sector in the Jordanian economy, and since credit is one of the main functions of the banking institution, this study attempts to identify the determinants of the lending behavior of commercial banks in light of the Coronavirus pandemic, and there are several studies that examined the determinants of commercial bank credit in different countries around the world (Al-Sawaie, 2020; Thaker et al. 2013, Shikumo and Mwangi 2016 & others). From the perspective of bank-specific characteristics and macroeconomic determinants; Al-Sawaie (2020) examined the impact of macroeconomic variables (interest rate, consumer price index, and gross domestic product) on long and short term bank lending in Jordan during the period 1980–2017.

Thaker et al. (2013) assures the existence of a long-term dynamic relationship between macroeconomic variables and bank credit, and it contributed positively to bank credit in Malaysia. Shikumo and Mwangi (2016) approved that bank size and liquidity significantly affect (positively and negatively, respectively) commercial banks' lending

to SMEs in Kenya. However, over the study period, the global economy witnessed the Coronavirus pandemic in 2019 besides the subsequent economic and social impacts on societies, including Jordan. The follower of Jordanian economic activity during the study period notes that the economy was affected by the slowdown, as economic growth declined by 1.55% at constant prices, so the study seeks to discuss the impact of this pandemic on bank credit in Jordan.

The main objective of this study is to test the impact of the Coronavirus pandemic and confirm the effectiveness of the determinants of bank credit in Jordan, which leads to fill the gap of the literature lack in this aspect by verifying the short and long term motives for bank credit in Jordan, the impact of the pandemic, too. Whereas, the model includes the total credit facilities granted by licensed banks as a dependent variable. While, GDP, interest rate, inflation and a dummy variable represent the coronavirus pandemic as independent variables. However, the current study contributes two main ways: the first, to our knowledge, presents relatively groundbreaking work investigating the determinants of bank lending in a pandemic, and the findings in the autoregressive distributed lag (ARDL) framework reveal both the short and long term time horizon. The current study is designed as follows, First, the introduction. Second, the literature review. Third, the study methodology and results. Finally, the summary.

2 Previous Studies

Several studies have been conducted on bank lending in Jordan, including Malawi and Al-Majali (2008) study of the bank credit impact on Jordanian economic activity during the time period (1970–2003) by applying vector autoregressive model to annual data, and using only two variables, namely, the gross domestic product (GDP), which is considered one of the important indicators for measuring the degree of economic activity and bank credit, and the results of the study showed the existence of a reciprocal influence relationship between the two variables of the study, and it was found that there is an explanatory power of credit in explaining most of the GDP changes in Jordan.

Whereas, Al-Sawaie (2020) study evaluated the macroeconomic determinants of bank credit in Jordan, such as interest rate, price level, and GDP, using the ECM model to analyze the long-term relationship between bank credit and macroeconomic variables for the period from 1980 to 2017. Therefore, results revealed a significant long-term relationship between bank credit and its determinants. Thaker et al. (2013) results assured this result.

As Abbas (2020) pointed out that there is a positive growth relationship of credit facilities for small and medium enterprises with time change. This emphasized the importance of focusing on projects despite the fluctuation in funding rates for these projects in Jordan during the period 2009–2018. On the other hand, Al-Shammari and El-Sakka (2018) examined the determinants of credit growth in the private sector for some OECD countries, the results indicated that the determinants of bank credit growth for OECD countries had significantly affect it in the long run.

In addition, Reginato et al. (2020) analyzed the determinants of domestic bank credit in South American countries during the period from 2000 to 2016. Meanwhile, the domestic liabilities and deposits for non-residents contributed positively to the growth

of private credit. As well as, the economic growth led to an increase in the demand for credit and an increase in it, while the rise in domestic and US interest rates reduced credit growth, and high inflation rates negatively affected the credit of the private sector, and thus inflation and domestic interest rates contributed negatively.

3 Methodology

3.1 Data

This study uses quarterly data during the period 1st quarter of 2008 to 2nd quarter of 2021 to verify the determinants of commercial bank lending in Jordan under the Corona pandemic, and data consisting of GDP, credit facilities, interest rate and price index were extracted from the website of the Central Bank of Jordan - statistical database.

3.2 Model

To determine the bank credit function, this study is relied on the model of Thaker et al. (2013) and Al-Sawaie (2020), as follows:

$$BC = f(i, \ CPI, \ GDP) \tag{1}$$

whereas:

BC = bank credit
i = interest rate
CPI = Consumer Price Index (base year: 2018 = 100)
GDP = gross domestic product

In order to determine the impact of Coronavirus pandemic, a dummy variable (COVID-19) was added, which was given (0) for the period before Coronavirus pandemic and (1) for the period of Coronavirus pandemic, so the model became as follows:

$$BC = f(i, \ CPI, \ GDP, \ COVID - 19) \tag{2}$$

3.3 The Unit Root Test and the Co-integration Test

We start the analysis in this study by determining the stationary variables of the model. Where, classical regression methods may be invalid if they are applied to non-stationary variables. This study uses the Dickey-Fuller test (ADF).

Table 1 shows the results of the Dickey-Fuller test (ADF), which indicate that bank credit, interest rate and price index contain a unit root at their level, and after taking the first variance, they became stationary at a level of 1% significance, while the GDP was stationary at the significance level of 1%, so that all variables are cointegrated from the degree I(0) and I(1). Thus, we move to the co-integration test to examine the long-term integration relationship, or the equilibrium relationship, in addition to that, because the degree of variables integration is a mixture of [I(0), I(1)], it is preferable to use the ARDL Bounds Testing Approach to Co-integration for the purpose of verifying the existence of

Table 1. Unit root test

Variable	ADF statistics		Degree of its integration
	Level	1st variance	
BC	−2.180169	−6.862500***	I(1)
I	−1.732652	−6.477773***	I(1)
CPI	−2.082995	−5.718950***	I(1)
GDP	−4.301802***	–	I(0)

Note: ***, ** and * refer to 1%, 5%, and 10% morale level, respectively
Source: Calculated by researchers.

co-integration using the ARDL estimation method to assess the short term coefficients and long term models.

Table 2 shows the results of the Bounds Testing Approach to Co-integration, where the Bounds test was found to be significant at the 1% level, and the results showed the presence of co-integration between the variables.

Table 2. F-bounds cointegration test.

	Value	*Sig*	*I(0)*	*I(1)*
F-statistic	25.06003	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Calculated by researchers.

3.4 Long-Term Relationship

The coefficients of the variables in the short and long run were estimated with optimal time delays of the ARDL model (1, 0, 1, 0, 0), and the results were as follows (Table 3):

The above equation shows long-term variables indicating a negative interest rate; where 1% interest rate increase would reduce bank credit by 8.2%. And this result agrees with the study of Reginato et al. (2020) for South American countries, as well as decreasing economic performance, and the results of our estimation show that the (CPI) has a positive significance in bank credit; So, if inflation (π) increases by 1%, bank credit will increase by 0.2%. In broad terms, when price of goods and services increases the demand for money and thus will increase the credit activity of the banks.

The Gross Domestic Product associated with negative sign indicates that an increase in gross domestic product by 1% leads to an improvement in the performance of the economy, an increase in the number of projects that become more profitable, an increase

Table 3. Estimated long-run coefficients (ARDL)

ARDL long run form:
Dependent variable: DLOG(BC)
Model: ARDL(1, 0, 1, 0, 0)

Variable	Coefficient	Std. error	t-Statistic	Prob.
I	−8.241427	2.334361	−3.530485	0.0010
GGDP	−0.031875	0.015740	−2.025047	0.0488
Π	0.210759	0.107133	1.967268	0.0553
COVID19	−1.306163	0.460830	−2.834367	0.0069
C	−9.577554	5.590911	−1.713058	0.0936

Source: Calculated by researchers.

in the net current expected value, and as a consequence, an increase in the demand for credit, but the result wasn't as expected. However, Friedman and Kuttner (1993) pointed out that an increase in permanent income has a positive impact on the demand for loans, and then an increase in the money market price raises the opportunity cost of other forms of financing such as bonds, etc., which makes lending more attractive. This mechanism also supports the demand and increases the interest rate on loans, while the impact resulting from the transitional part that is related to the impact of self-financing, which reduces the bank debt ratio.

Finally, the negative sign of Covid referred to the negative impact on bank credit, which declined by 1.3% from the quarters where there was no Coronavirus pandemic.

3.5   Error Correction Model

The presence of co-integration indicates that at least one of the variables responded to deviations from a long run relationship. Therefore, we will check if the bank lending corrects the imbalance, and if it has a dynamic causal relationship between variables; If the error term is significant, the slowing down of the dependent variable is important in predicting the current movements of bank lending, and this means that bank credit adjusts the error and returns to the previous equilibrium, also, the lag independent variables have a great explanatory power for the current bank credit.

Based on Table 4, the estimated ECT coefficient is significant at 1% level, which indicates that the imbalance of the past period of bank credit in the year is corrected at a speed of 0.02; This value means that any impact on bank credit will take it a long time to return to its equilibrium, unless there are other impacts.

Table 4. Error correction form for bank credit

	Coefficient	s.e.	t-stat.	Prob.
ECT	−0.021977**	0.001700	−12.92543	0.0000

Notes: *** indicates significance at less 1%.

4   Conclusion

The main objective of this study is to assess the macroeconomic determinants in addition to the Coronavirus pandemic of bank credit in Jordan, using three independent variables: interest rate, inflation and GDP, in addition to a dummy variable representing the pandemic and quarterly data during the period 1st quarter of 2008 to 2nd quarter of 2021. The ARDL of co-integration test framework and the ECM were used to examine the short run and long run relationships between the variables because their degree of integration is different: I(0), and I(1), and it is appropriate when there is one long-term relationship between the basic variables of a small sample. Also, it was clear from the results that all these three macroeconomic variables actively contributed to bank credit in Jordan between 2008:01 and 2021:02, and it was statistically proven that they have an important long run relationship with bank credit, while, the pandemic contributed to the decline of it.

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Prevalence and Associated Factors of Obsessive-Compulsive Disorder During COVID-19 Pandemic: A Cross-Sectional Study

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Abstract. The rates of obsessive behaviors were increased during the Corona Virus Disease 2019 (COVID-19) pandemic due to the preventive precautions against this virus. The study aimed to identify the prevalence and associated factors of obsessive-Compulsive Disorder (OCD) during COVID-19 pandemic. A cross-sectional design was used to assess the OCD among general population sample. A simple random sampling technique (n = 421) was used for data collection. The data collected using a questionnaire (Yale-Brown Scale) for OCD.

The prevalence of obsessive-compulsive behavior symptoms among the participants was (47.0%) during COVID-19 Pandemic. People with other diseases like hypertension, diabetes, heart disease, and others were 2.4 times more likely to have OCD when compared to others from healthy people. Furthermore, who have COVID-19 were twice as likely to develop OCD as non-infected people. On the other hand, People who did not adhere to safety procedures were 0.31 times less likely to develop OCD than others who closely adhered to these procedures. Besides, the study showed that people previously diagnosed with OCD are at 4.95 times risk of worsening their condition during this pandemic. The COVID-19 pandemic has a negative impact on the behavior of the Palestinian population, the majority of the participants have symptoms of OCD, and who had OCD have worsened their condition during the COVID-19 pandemic.

Keywords: Prevalence · Obsessive · Compulsive · Behavior · OCD · COVID-19 · Pandemic

1 Introduction

Obsessive Compulsive Disorder (OCD) is characterized by feeling that one needs to behave repetitive activities despite the fact that these behaviors are not accustomed with one's overall purpose (Luigjes et al. 2019). The novel COVID-19 has been declared a global pandemic by the World Health Organization (WHO), after the first instances were reported in Wuhan, China, around the end of December 2019 (WHO 2020). The

COVID-19 can influence mental health at this time, thus physical protection is the focus. Regardless, individual's mental health is equally vital as it has long-term negative consequences (Dong and Bouey, 2020). In countries like Palestine, as has been subjected to long-term occupation and internal conflict as well as the COVID-19 pandemic, health, particularly psychological well-being and quality of life, will be severely impacted (AlKhaldi et al. 2020). During the COVID-19 pandemic, Tanir and colleagues discovered that patients with OCD may have additional symptoms and that existing OCD symptoms may increase (Tanir et al. 2020).

The study will contribute to help in detecting obsessive-compulsive behavior during COVID-19 pandemic. The most important result of this study is the provision of mental health care to OCD individuals, especially people who have COVID-19.

2 Methods

2.1 Study Design

A descriptive cross-sectional design was used to identify prevalence and associated factors of obsessive-compulsive disorder during COVID-19.

2.2 Setting

The entrance of the Taj Mall in the center of Tulkarm city was the setting of communicating interviews with respondents. Totally, 421 participants from the people who entered TaJ Mall were recruited. Simple random sampling technique has been adopted for the purpose of the current study.

2.3 Data Collection

One out of every ten entering the Mall was selected. A questionnaire consisting of demographic information and a 10-item Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) was filled out by the study participants after explaining the instructions and the purpose of the study to them. Data were collected over a period of two months from the end of May to the end of July 2021, daily for 1–2 h, and from Sunday to Thursday (5 days).

2.4 Measures

The Y-BOCS was designed to address the problems of current rating scales by providing a specific measure of the severity of OCD symptoms that is not affected by the type of OCD or compulsions present. A 10-item scale was used, each item rated from 0 (no symptoms) to 4 (severe symptoms) (total range, 0 to 40), with separate subtotals for OCD severity (Okasha et al. 1994).

2.5   Statistical Analysis

After completing data collection, the data was digitally coded by the researchers and statistical analysis using the Statistical Package for Social Science (SPSS V24). Frequencies of independent variables were analyzed; also, the association between dependent and independent variables assessed by using logistic regression analysis.

3   Results

Table 1 showed the distribution of demographic characteristics. In which, most of the participants' ages ranged 18–29 years (43.2). The female participants outnumbered males by (62.2%) versus (37.8%) respectively. Regarding the marital status, high percentage were married (58.0%).

Table 1. Distribution of participants according to socio-demographic characteristics.

Variables		Frequency (n)	Percentage (%)
Age group	18–29	182	43.2%
	30–39	119	28.3%
	40–49	80	19.0%
	More than 50	40	9.5%
Gender	Male	159	37.8%
	Female	262	62.2%
Marital status	Single	158	37.5%
	Married	244	58.0%
	Divorced or widowed	19	4.5%
Residency	City	197	46.8%
	Village	170	40.4%
	Refugee Camp	54	12.8%
Monthly income	More than 400$	280	66.5%
	Less than 400$	141	33.5%
Previously diagnosis with any disease	Yes	63	15.0%
	No	358	85.0%
Having COVID-19	I don't know	60.0	14.3%
	Yes	134	31.8%

(continued)

Table 1. (*continued*)

Variables		Frequency (n)	Percentage (%)
	No	227	53.9%
Work	Yes	258	61.3%
	No	163	38.7%
Educational level	Master or more	24	5.7%
	Bachelors	177	42.0%
	Diploma	80	19.0%
	High school or less	140	33.3%
Compliance with safety precautions	I don't care	96	22.8%
	Some times	225	53.4%
	Strongly	100	23.8%
Previously diagnosed with OCD	Yes	30	7.1%
	No	391	92.9%

3.1 Prevalence of Obsessive Compulsive Disorder

Table 2 showed that (53%) of the participants complain of very slight OCD which is considered as basic data to compare other obsessive compulsive behavior levels with it. (33.2%) suffer from slight OCD, (10.9%) suffer from moderate OCD, and (2.9%) suffer from severe OCD. The overall prevalence of OCD symptoms among the participants was (47.0%).

Table 2. Distribution of the sample according to the level of obsessive-compulsive disorder

Level	YBS	Frequency (n)	Percentage (%)
Very slight	0–7	223	53.0%
Slight	8–15	140	33.2%
Moderate	16–23	46	10.9%
Severe	24–31	12	2.9%

YBS, Yale Brown Scale score.

3.2 Association Between Obsessive-Compulsive Disorder Categories and Socio-Demographic Parameters

Table 3 showed the results of an ordinal logistic regression analysis of the factors associated with slight, moderate and severe OCD among the study participants. The results

showed that there is a significant association between previously diagnosed with any disease and OCD. People with other disease were 2.4 times more likely to have OCD than others (95% CI 1.32–4.30). Also, those who had COVID-19 were more susceptible to OCD 2 times than those who did not have it (95% CI 1.32–2.99). The results also showed that people who did not adhere to safety procedures were 0.31 times less likely than others to develop OCD (95% CI 0.16–0.58). Besides, the study showed that people previously diagnosed with OCD are at 4.95 times risk of worsening their condition during this pandemic (95% CI 2.34–10.10).

Table 3. Ordinal Logistic Regression for factors associated with slight, moderate, and severe OCD compared with very slight OCD among participant

Variables		B	SE	OR	(95% C. I for OR)		P
					Lower	Upper	
Severe OCD		0.13	0.42	1.14	0.50	2.58	0.76
Moderate OCD		2.24	0.44	9.36	3.96	22.15	0.00
Slight OCD		4.18	0.51	65.07	23.73	178.43	0.00
Gender	Male	0a					
	Female	0.20	0.24	1.22	0.77	1.94	0.39
Age	More than 50	0.28	0.45	1.32	0.54	3.21	0.54
	49–40	0.37	0.36	1.45	0.71	2.95	0.31
	39–30	0.11	0.31	1.11	0.61	2.05	0.73
	29–18	0a					
Marital status	Single	0a					
	Married	0.11	0.30	1.11	0.62	2.02	0.72
	Divorced or widowed	0.82	0.54	2.27	0.79	6.55	0.13
Residency	City	0a					
	Village	0.12	0.22	1.13	0.74	1.73	0.57
	Refugee Camp	−0.33	0.34	0.72	0.37	1.41	0.34
Monthly income	More than 400$	0.13	0.25	1.14	0.70	1.85	0.61
	Less than 400$	0a					
Previously diagnosis with any disease	Yes	0.87	0.30	2.38	1.32	4.30	0.004
	No	0a					
Have COVID-19	I don't know	0.26	0.30	1.29	7.25	2.33	0.39
	Yes	0.65	0.23	1.92	1.32	2.99	0.004

(*continued*)

Variables		B	SE	OR	(95% C. I for OR)		P
					Lower	Upper	
	No	0a					
Work	Yes	−0.46	0.25	0.63	0.39	1.03	0.07
	No	0a					
Educational level	Master or more	−0.42	0.50	0.66	0.25	1.74	0.40
	Bachelors	0.20	0.25	1.22	0.74	2.01	0.43
	Diploma	−0.18	0.30	0.83	0.46	1.51	0.55
	High school or less	0a					
Compliance with safety precautions	I don't care	−1.19	0.32	0.31	0.16	0.58	0.00
	Some times	−0.73	0.24	0.48	0.30	0.77	0.002
	Strongly	0a	0.0	1	0.0	0.0	0.0
Previously diagnosed with OCD	Yes	1.56	0.36	4.95	2.34	10.10	0.0
	No	0a					

B: coefficient; **SE**: standard error; *statistically significant difference at p ≤ 0.05; **OR**: odds ratio.

4 Discussion

The results of the current study revealed that the overall prevalence of OCD symptoms was (47.0%). Our result was consistent with other study, where the prevalence of obsessive-compulsive disorder reached 67.3% among the participants (Darvishi, et al. 2020). Abba-Aji et al. (2020) also agreed with our current study results; found in their study that 60.3% of the participants reported symptoms of compulsive behavior. Furthermore, in an Arab study conducted by Taher and colleagues it was shown that 43% of 1644 study participants had symptoms of obsessive-compulsive disorder (Taher et al. 2021).

The current study results found that there is a significant correlation among the previously diagnosed of any disease like hypertension, diabetes, heart disease, and others and obsessive-compulsive behavior. People previously diagnosed with any disease were 2.4 times more likely to have compulsive behaviors compared to others. Therefore, our study finding is consistent with Khan's and his colleagues who found that people with mental illnesses are more likely to have OCD during COVID-19 pandemic (Khan et al. 2021). In addition, other study agreed with our study results, which showed that 48.1% of the sample who newly diagnosed with OCD, were previously diagnosed with other medical disease (Aguglia et al. 2018).

Our study has several limitations. First, Limitation of movement, transportation and quarantine during COVID-19 pandemic. Second, Lack of studies related to the impact of the COVID-19 pandemic on OCD, especially in Palestine. Third, some participants may be ashamed to fill in some questions clearly despite the privacy provided due to cultural

issues. Fourth, Inability to include more than Tulkarm city to increase the generalizability of the study.

5 Conclusions

The majority of the participants have symptoms of OCD, and the participants who had OCD have worsened their condition during the COVID-19 pandemic. In addition, participants who have had COVID-19 experience are more likely to have OCD than those who are not. Furthermore, respondents who were not interested in applying prevention and safety measures had almost no symptoms of obsessive-compulsive behavior.

Authors' Contributions. All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by MA, AS. The first draft of the manuscript was written by AS and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Availability of Data and Materials. The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declaration.

Ethics Approval. Ethics approval and consent to participate all procedures performed in this study involving human participants were in accordance with the ethical standards of An-najah National University's Research Ethics Board (Reference number 08/AP/0021) and the American Psychological Association (APA. 2010) and with the 2013 Helsinki Declaration.

Informed Consent was Obtained from all Participants.   Consent for Publication
Not applicable.

Competing Interests. The authors declare that they have no competing interests.

Abbreviations

COVID-19	Coronavirus Disease 2019
OCD	Obsessive Compulsive Disorder
Y-BOCS	Yale-Brown Obsessive-Compulsive Scale
SPSS	Statistical Package for Social Science
WHO	World Health Organization

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The Impact of the Coronavirus (COVID-19) Pandemic on the Profitability of Islamic and Conventional Banks (Comparative Study)

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Abstract. The current study aim is to compare the impact of the Coronavirus (covid-19) pandemic on the profitability between each of the Islamic and conventional banks, whereas the profitability of banks was measured through the (ROA), (ROE), and (EPS) indicators for the years 2019 and 2020. However, the researcher followed the inductive method and the descriptive-analytical method in this study, knowing that the study sample consisted of 10 Islamic banks and 10 conventional banks located throughout 5 Arab countries. The most important results of the study were the presence of a negative impact of the Coronavirus (Covid-19) pandemic on the profitability of all the banks of the study sample, but the Islamic banks, the study sample, were less affected compared to the conventional banks, also, the study recommended the need to conduct a comparative study between the performance of Islamic and conventional banks.

Keywords: Coronavirus (Covid-19) pandemic · Profitability · Islamic banks · Conventional banks

1 Introduction

The global financial crisis of 2008 cast a shadow on the global economy with its all components, especially its clear impacts on conventional banks, in complete contrast to what characterized Islamic banks during that crisis [8].

It is no secret to a follower of the economic situation in the region that the Coronavirus (COVID-19) pandemic left its negative impacts on most economic sectors, and from here the study came to shed light on the impacts of this pandemic, and in particular the comparison between the profitability of Islamic and conventional banks considering their impact on the Corona pandemic.

2 The Study Problem

The problem of the study lies in the variances between Islamic and conventional banks, and these variances are represented by the fundamental ones in contracts nature, methods

of investment and financing, and sources of funds for both parties, meanwhile, scientific studies have proven to have a positive impact on the performance of Islamic banks considering the global financial crisis that occurred in 2008. Hence, the questions of the study emerged to identify and compare the impact of the Coronavirus (COVID-19) pandemic on the profitability of Islamic and conventional banks. The problem of the study can be expressed through the following main question:

What is the impact of the Coronavirus (COVID-19) pandemic on the profitability of Islamic banks compared to the profitability of conventional banks?

The following sub-questions are derived from the main question:

1- What is the impact of the Coronavirus (Covid-19) pandemic on the return on assets (ROA) in Islamic and conventional banks?
2- What is the impact of the Coronavirus (Covid-19) pandemic on the return on equity (ROE) in Islamic and conventional banks?
3- What is the impact of the Coronavirus (Covid-19) pandemic on the earnings per share (EPS) in Islamic and conventional banks?

3 Study Objectives

The main objective of the study is to identify the impact of the Coronavirus (Covid-19) pandemic on the profitability of Islamic banks compared to the conventional ones. And as a result, the following sub-objectives are derived from it:

1- Recognizing the impact of the Coronavirus (Covid-19) pandemic on the return on assets (ROA) in Islamic and conventional banks.
2- Identifying the impact of the Coronavirus (Covid-19) pandemic on the return on equity (ROE) in Islamic and conventional banks.
3- Knowing the impact of the Coronavirus (Covid-19) pandemic on the earnings per share (EPS) in Islamic and conventional banks.

4 Study Methodology

The researcher followed the inductive method by presenting the theoretical side of the study and the analytical descriptive method by calculating profitability indicators and the maiden as well as the variances between them, which contributes to reaching the objectives of the study.

5   Study Hypotheses

The Main Hypothesis

There is no impact of the Coronavirus (COVID-19) pandemic on the profitability of Islamic banks compared to conventional banks.

The First Sub-hypothesis

There is no impact of the Coronavirus (COVID-19) pandemic on the return on assets (ROA) in Islamic banks compared to conventional banks.

Second Sub-hypothesis

There is no impact of the Coronavirus (COVID-19) pandemic on the equity of shareholders (ROE) in Islamic banks compared to conventional banks.

The Third Sub-hypothesis

There is no impact of the Coronavirus (COVID-19) pandemic on earnings per share (EPS) in Islamic banks compared to conventional banks.

6   Study Model
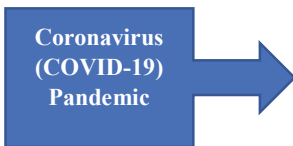
The Independent Variable   **The Dependent Variable**
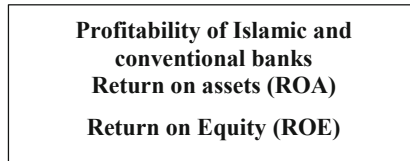
7   Study Population and Sample

The study population consists of all the conventional and Islamic banks operating in the Arab countries in addition to the fact that they are the most widespread.

Ordinarily, the study sample is represented by ten Islamic banks and ten conventional banks distributed in five Arab countries: Jordan, Kuwait, Saudi Arabia, the United Arab Emirates, and Qatar.

Notably, on the one hand, the studied Islamic banks are as follows: Jordan Islamic Bank, International Islamic Arab Bank, Safwa Islamic Bank, Kuwait International Bank, Kuwait Finance House, Bank Albilad, Al Rajhi Bank, Abu Dhabi Islamic Bank, Dubai Islamic Bank, and Dukhan Bank. While, on the other hand, the studied conventional banks are the Housing Bank, Cairo Amman Bank, Jordan Bank, Burgan Bank, National Bank of Kuwait, National Commercial Bank, Riyad Bank, First Abu Dhabi Bank, Mashreq Bank, and Qatar National Bank.

8 Study Theoretical Framework

8.1 The Concept of Profitability

Profitability is a primary goal for all banking institutions to ensure survival and sustainability. Profitability can be defined as "the relationship between the profits achieved by the institution and the investments that contributed to achieving these profits" [1].

Profitability is measured either through the relationship between profits and sales or through the relationship between profits and investments that contributed to achieving them, knowing that what is meant by investments is the value of assets or property rights. [4].

8.2 Factors Affecting the Profitability of Banks

I. **Managing the bank**

> The profitability of commercial banks is affected by the extent to which the management of these banks can balance returns and risks, reduce costs, and increase revenues, and this is achieved through the management's experience and ability to plan, organize, direct and, control. [4]

II. **The size of the bank.**

> The size of the bank is usually measured by the number of assets and property rights owned by the bank. Whereas the large size of the bank measured by assets leads to a lower rate of return on assets [2].

III. **Liquidity.**

> Liquidity means the ability of the bank to meet its obligations immediately, by converting any of the assets into liquid cash quickly and without loss in value, as this cash is used to meet depositors' requests to withdraw from their deposits and provide credit in the form of loans and advances to serve the community. Therefore, liquidity helps the bank to avoid the loss that may occur because of the bank being forced to liquidate some of its illiquid assets, and thus it can be said that for bank, liquidity represents an element of protection and security, meanwhile, maintaining the ability of the banking system to meet credit requests at any time [4].

IV. **Interest rates.**

> It can be said that, once the profitability of commercial banks increases, the interest rate margin on loans increases [5].

V. **Deposit structure.**

> Generally, the more deposit-taking, the profitability through investment increases in a greater manner [2].

VI. **Recruitment of resources.**

> As a matter of fact, when banks direct their investments and credit facilities to aspects that achieve greater profitability, then the profitability of these banks' increases, at which the revenue generated by them is the main source of the bank's profitability [4]

VII. **Monetary policy.**

   Monetary policy plays a very important role in influencing the management of banks' assets and liabilities through the supervision of bank credit. However, when the central banks' policy is directed towards mitigating interest on loans and easing rediscount rates and the requirements of the legal cash reserve, this encourages the demand for loans and thus encourages financing and investment. Consequently, achieves revenues for the bank and increases its profitability rates [2].

VIII. **Political and economic conditions.**

   The profitability of the bank is greatly affected by the stability of the economic and political conditions in the country and in the neighboring countries, especially those with strong commercial and economic interests.

IX. **Banking awareness.**

   Profitability is affected by the extent of banking awareness in the community. The higher the level of banking awareness in the community, the more the community deals with bank credit, and consequently increasing the possibility of money creation for these banks [4].

X. **The competition.**

   It directly affects the banks' profitability considering the limited availability of resources [2].

XI. **The size and rootage of the bank.**

   The size of the bank and its reputation greatly affect the ability of the bank to build confidence among customers, because customers head to banks with great capital, branches, and commercial encyclopedias [2].

8.3 Profitability Indicators

To measure profitability, there are many indicators to be utilized. Thus, profitability will be measured in this study through the following indicators:

I. **The rate of return on assets.**

   This rate measures the relationship between operating profit and the size of assets, that is, the extent to which the monetary unit invested in assets can generate operating profits, however, it reflects the efficiency of operations and investment activities, not financing activities [7].

$$\text{Return on assets} = \text{Net earnings after tax/Total assets}$$

II. **The rate of return on shareholders' equity.**

   This rate measures the amount of profit that the bank achieves by operating the money of its shareholders, and this rate can be calculated by the following equation [3]:

$$\text{Return on Equity} = \text{Net Income/Equity}$$

III. **The rate of earnings per share.**

This rate shows the share profitability; besides, this indicator can be calculated by the following equation [6].

$$\text{Earnings per share} = \text{Net profit after tax/Number of shares}$$

9   The Practical Aspect of the Study

9.1   Profitability Indicators of Islamic and Conventional Banks, Namely, the Study Sample

(See Tables 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10).

Table 1. Kuwaiti Islamic banks

Bank	EPS		ROA		ROE	
	2019	2020	2019	2020	2019	2020
Kuwait International Bank [22]	14.29	(5.09)	0.008	(0.001)	0.057	(0.011)
Kuwait Finance House [21]	33.12	19.52	0.017	0.007	0.132	0.064

Table 2. Kuwaiti conventional banks

Bank	EPS		ROA		ROE	
	2019	2020	2019	2020	2019	2020
Burgan Bank [13]	24.10	9.40	0.012	0.005	0.089	0.039
National Bank of Kuwait [24]	57.00	32.00	0.019	0.009	0.114	0.052

Table 3. Saudi Islamic banks

Bank	EPS		ROA		ROE	
	2019	2020	2019	2020	2019	2020
Al Bilad Bank [11]	1.67	1.81	0.014	0.014	0.132	0.126
Al-Rajhi Bank [10]	4.06	4.24	0.031	0.026	0.198	0.182

As shown in the previous tables, all the calculated profitability indicators for Islamic and conventional banks in the study sample demonstrate a decrease in the year 2020, except for the earnings per share results in concern with the Saudi Islamic banks, namely, the study sample and Safwa Islamic Bank in Jordan.

Table 4. Saudi conventional banks

Bank	EPS		ROA		ROE	
	2019	2020	2019	2020	2019	2020
Saudi National Bank [30]	3.67	3.57	0.025	0.020	0.182	0.146
Riyad Bank [27]	1.87	1.57	0.025	0.018	0.138	0.106

Table 5. Emirates Islamic banks

Bank	EPS		ROA		ROE	
	2019	2020	2019	2020	2019	2020
Abu Dhabi Islamic Bank [9]	0.632	0.364	0.021	0.013	0.136	0.084
Dubai Islamic Bank [15]	0.69	0.38	0.024	0.011	0.134	0.064

Table 6. Emirates conventional banks

Bank	EPS		ROA		ROE	
	2019	2020	2019	2020	2019	2020
First Abu Dhabi Bank [17]	1.10	0.93	0.018	0.013	0.117	0.097
Mashreq Bank [23]	11.63	(7.20)	0.016	(0.010)	0.108	(0.067)

Table 7. Jordanian Islamic banks

Bank	EPS		ROA		ROE	
	2019	2020	2019	2020	2019	2020
Jordan Islamic Bank [20]	0.272	0.261	0.012	0.011	0.129	0.110
Islamic International Arab Bank [19]	0.344	0.304	0.015	0.012	0.161	0.124
Safwa Islamic Bank [28]	0.01	0.012	0.007	0.006	0.070	0.066

Table 8. Jordanian conventional banks

EPS		ROA		ROE	
2019	2020	2019	2020	2019	2020
0.257	0.116	0.010	0.005	0.078	0.039
0.148	0.096	0.009	0.005	0.077	0.047
0.201	0.179	0.014	0.016	0.092	0.091

Table 9. Qatar Islamic banks

Bank	EPS		ROA		ROE	
	2019	2020	2019	2020	2019	2020
Dukhan Bank (Previously Barwa) [16]	1.690	1.590	0.010	0.007	0.067	0.049

Table 10. Qatar conventional banks

Bank	EPS		ROA		ROE	
	2019	2020	2019	2020	2019	2020
International Bank of Qatar [29]	1.450	1.190	0.015	0.012	0.153	0.125

9.2 Maiden of Profitability Indicators for Islamic Banks, Namely, the Study Sample

Maiden of the (EPS) indicator.

2019	2020
5.167	2.339

And the decrease in the average of this percentage, is calculated as follows:

$$5.167 - 2.339 = 2.828$$

Whereas the maiden of (ROA) indicator.

2019	2020
.0159	.0106

However, the decrease in this ratio average, is calculated as follows:

$$.0159 - .0106 = .0053$$

While the maiden of return on equity (ROE).

2019	2020
0.1216	0.0858

The decrease in this indicator (ROE) average is calculated as follows:

$$0.0858 - 0.1216 = -0.358$$

9.3   Maiden of Profitability Indicators Regarding Conventional Banks, Namely, the Study Sample

Maiden of the earnings per share indicator (EPS).

2019	2020
10.1426	4.1851

To calculate the decrease in the maiden of the indicator: (EPS).

$$10.1426 - 4.1851 = -5.9575$$

While the maiden of return on assets (ROA).

2019	2020
0.163	.0093

And the decrease in the maiden of the indicator (ROE), is calculated as follows:

$$0.163 - .0093 = .007$$

Whereas the maiden of return on equity (ROE).

2019	2020
.1148	.0675

The decrease in the maiden of the indicator (ROE), is calculated as follows:

$$.1148 - .0675 = .047$$

9.4   Comparing the Decline in Each of the Profitability Indicators Between Islamic and Conventional Banks

Comparing the decrease and the maiden of the EPS ratio.

Islamic banks	2.828
Conventional banks	5.957

Comparing the decrease and the maiden of the ROA ratio.

Islamic banks	.0053
Conventional banks	.007

Comparing the decrease and the maiden of the ROE ratio.

Islamic banks	.0358
Conventional banks	.047

10   Study Results

I.   According to the study sample, the Corona (Covid-19) pandemic has negatively affected the profitability of Islamic and conventional banks.
II. Based on the study sample, the coronavirus (COVID-19) pandemic impact on the profitability of Islamic banks is less compared to the conventional banks, despite the similarity of the measures taken by the central banks and the countries in which the study sample operate, where theory and practice.

11   Recommendations

I.   Working on wider studies for the purpose of comparing the performance of Islamic and conventional banks.
II. Spreading awareness among customers in accordance with the advantage of Islamic banks in facing the banking system crises that they might be exposed to.

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Exploring the Expected Moderating Effect of COVID-19 on the Effectiveness of ISA 520 - Analytical Procedures - on the Quality of Auditors' Reports in Jordan

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Abstract. The current study aimed to ensure the effectiveness of implementing analytical procedures in improving the quality of auditors' reports in Jordan during the COVID-19. In order to perform the present study, a quantitative approach was adopted to collect and analyze data. Thus, from 150 distributed questionnaires the researchers could retrieve and analyze 86 questionnaires. According to the descriptive analysis and multiple regression results the researchers found that there is a significant positive relationship between the implementation of analytical procedures and the quality of auditors' reports at the significance level of 0.01. In addition, the results showed that there is no significant moderating effect of the COVID-19 on the relationship between the implementation of analytical procedures and the quality of auditors' reports. Based on these results, the researchers recommended auditors in Jordan to continue their reliance on analytical procedures as one of the main methods in the audit process due to its effectiveness in enhancing the quality of auditors' reports in various circumstances. Further, the researchers recommend auditors to develop innovative methods to overcome any obstacles that would affect the effectiveness of analytical procedures. Finally, the researchers recommend auditors in Jordan to benefit from the great development in information technology and communications in overcoming any obstacles they may encounter when implementing analytical procedures under exceptional circumstances such as the COVID-19.

Keywords: COVID-19 · ISA 520 · Analytical procedures · Quality of auditors' reports

1 Introduction

Analytical procedures are one of the main methods to collect audit evidence on which auditors base their opinions when judging the fairness of financial statements [15]. In order to implement these procedures, auditors connect and compare the financial information appear in the financial statements with the non-financial information available

about companies in the market to ensure the reasonableness and logicality of information provided by the companies' managements [17]. Due to the importance of analytical procedures in the audit process, the International Federation of Accountants (IFAC) issued a special standard (ISA 520) in 2010 to guide auditors when implementing analytical procedures to ensure the effectiveness of these procedures in achieving the objectives of audit process in general and the validity of the auditors' opinions in particular [7].

Since the issuance of ISA 520 (Analytical Procedures), many researchers over the world have studied these procedures and their effectiveness in the audit process. Accordingly, many of them pointed to the importance, effectiveness, and significance role of analytical procedures in the audit process and the role of these procedures in improving and increasing the reliability of auditors' opinions regarding the fairness of financial statements [14]. Despite that, unexpected changes facing the whole world, represented by the emergence of COVID-19 and the accompanying precautionary measures, generate doubt about the effectiveness of using analytical procedures in helping and enabling auditors to reach reliable opinions about the fairness of financial statements and the correctness of their data.

1.1 Problem and Questions of Study

In light of the COVID-19, which has affected the whole world; it has become difficult for auditors to implement the analytical procedure effectively [14]. The reasons are the imposition of curfews, the closure of markets and the lack of face-to-face business interactions between traders and companies [13]. Accordingly, there was a lack of non-financial information about companies in the markets in general. Consequently, it becomes hard for auditors to collect the required non-financial information about companies, which may affect the effectiveness of using analytical procedures in the audit process.

Before the COVID-19, many studies have pointed out to the importance, effectiveness, and significance role of analytical procedures in the audit process. However, after the COVID-19 some important questions about the effectiveness of analytical procedures in the Jordanian context arise, namely:

1. Do analytical procedures play an effective role in improving the quality of auditors' reports in Jordan?
2. Does the COVID-19 lead to a lack of non-financial information about companies in the Jordanian market?
3. Does the COVID-19 affect the effectiveness of analytical procedures in improving the quality of auditors' reports in Jordan?

1.2 Aims of Study

The current study aims mainly to ensure the effectiveness of implementing analytical procedures, as one of the main instruments of collecting audit evidence, during the COVID-19 and the role of these procedures in improving the quality of auditors' reports in Jordan. Thus, a certain level of reassurance can be provided to auditors regarding their use and implementation of analytical procedures in audits during the COVID-19.

In addition, the current study seeks to increase public confidence in the audit profession by ensuring the quality of auditors' reports in various circumstances.

1.3 Significance of Study

The significance of the current study lies in its quest to ensure the quality of auditors' reports in Jordan and the effectiveness of the procedures they rely on during the emerging conditions represented by the COVID-19. Accordingly, the results of the current study may shed the light on some limitations or obstacles that might affect the quality of auditors' reports and alert those auditors to them. In addition, the study seeks to enhance the public's confidence in auditors' services and the validity of their reports and opinions in various circumstances, as this constitutes the main motive for requesting auditor's services in general. Since any defect in the quality of auditors' reports could lead to a loss of confidence in the audit profession and auditors, the effectiveness of the procedures on which these reports are based should be ensured at all times and circumstances.

2 Literature, Theoretical Framework and Developing Hypotheses

Since the issue of ISA 520 on analytical procedures, many researchers have addressed the importance of these procedures and their effects on various aspects of the audit process. Most of the previous studies have indicated the importance and role of analytical procedures in the audit process as a whole. In this context, [15] has found that analytical procedures play an important role in understanding the business environment of clients, which enhances auditors' abilities in estimating potential misstatements in financial reports. In addition, [16] have found that although auditors in Croatia understand the importance of analytical procedures in blockchain technology auditing, they still need specialized education in order to be able to carry out these procedures efficiently and effectively. Further, [17] have discovered that due to the importance of analytical procedures and their effective role in the audit process, whether internal or external audit, internal auditors should take advantage of analytical procedures to improve the quality and effectiveness of the internal audit process. Moreover, [16] have found that the implementation of analytical procedures reduces the cost of tax audit at all stages of auditing process, especially the final stage [15]. In similar context, [6] have found that the integrity and ethical values, and audit committees effectiveness affect positively the overall auditing process including the analytical procedures. Furthermore, [3] have discovered that the use of analytical procedures enhances the quality of the audit process, specifically the use of financial ratios, the comparison of financial ratios, and extracted information with predetermined standards (financial analysis standards). Similarly, [11] have found that the application of analytical procedures can improve the audit quality, save time through focusing on more significant details, identify incorrect reflections of economic activities facts.

As for the quality of the auditors' reports, previous studies have presented many interesting results regarding the factors affecting this quality. In this vein, [9] have found that audit quality, including audit opinions, is sensitive to many factors, such as corporate governance, signing auditors, and audit firm characteristics. Therefore, to improve

the audit quality in an effective way the aforementioned factors should be taken into consideration, especially the diversity of signing auditors. In the same context, [2] have discovered that although the relationship is not statistically significant, the quality of the auditors' reports is positively affected by the board size as an element of corporate governance, the size of the audit firm and the size of the company under audit. In addition, [10] have figured out that audit quality has affected by the financial distress and auditor switching on one hand. On the other hand, audit tenure, company size, audit fees, and asset growth did not affect audit quality. Further, [17] found that auditors who have charitable activities present better audit quality, as they earn lower discretionary accruals and more be conservative in issuing modified audit opinions. Finally, [8] have discovered that audit quality may be affected by the time budget pressure as it push individuals dysfunctional audit behavior as gathering insufficient evidence, premature sign-offs, and the lack of audit procedure [8]. All previous studies indicated the importance of analytical procedures in the audit process as well as the factors that affect audit quality, specifically the quality of auditors' reports. The current study focuses on exploring the quality of auditors' reports that relied on analytical procedures during the COVID-19 in the Jordanian context.

2.1 Theoretical Framework

As mentioned earlier, analytical procedures depend on linking the financial information of entities with the non-financial information available about these entities in the market and reviewing the extent of correlation and reasonableness between this information. In this vein, due to the precautionary measures that resulted from the COVID-19 in the global markets, the information available about entities in the markets might be limited. Consequently, the extent of auditors' abilities to use analytical procedures and the effectiveness of these procedures in the audit process, and the quality of their opinions might be affected.

In this vein, the contingency theory indicates that in unusual circumstances, such as COVID-19, new factors may appear in society. Thus, these factors may affect the effectiveness of the procedures followed by practitioners and facilities, which requires modifying the procedures followed to maintain their effectiveness [1].

2.2 Hypotheses of Study

According to the aforementioned discussion, the current study presents the following three hypotheses:

H.1. Analytical procedures do an effective role in improving the quality of auditors' reports in Jordan.
H.2. The COVID-19 led to a lack of non-financial information about companies in the Jordanian market.
H.3. The COVID-19 affect the effectiveness of analytical procedures in improving the quality of auditors' reports in Jordan.

2.3 Model of Study

Relying on the prior hypotheses, Fig. 1 shows the model of current study.
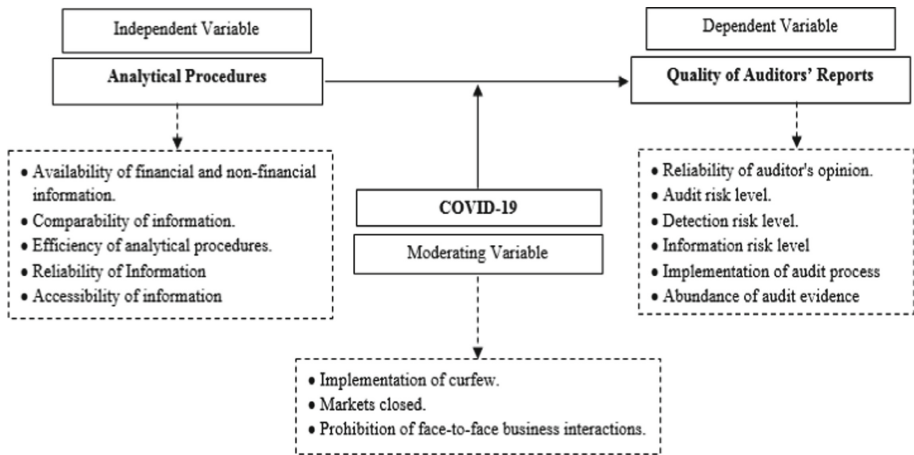
Fig. 1. Model of study

3 Methodology of Study

In order to perform the present study, a quantitative approach was adopted to collect and analyze data. As for collecting data, the study used a survey questionnaire. The questionnaire divided to three sections. The first section included 7 questions related to the demographic information of respondents. While the second section involved 17 questions explored the analytical procedures used by auditors and the role of analytical procedures in forming and enhancing auditors' opinions in Jordan. The third section contained 18 questions investigated the precautionary measures during the COVID-19 and their impact on the implementation of analytical procedures in Jordan.

All the licensed auditors who practice the profession of auditing in Jordan represent the population of the current study, which numbered (600) licensed auditors[1]. The questionnaire was sent randomly to 150 auditors, who represent the sample of study, by email. Accordingly, the total number of retrieved analyzable questionnaires was 86 questionnaires.

4 Data Analysis

Prior to analyze the collected data and test the relationships between variables, Cronbach Alpha was tested to ensure the questionnaires' reliability, as well as Skewness and

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[1] Source: Jordanian Association of Certified Public Accountants. See. https://jacpa.org.jo/Portals/0/JACPA-AUD.pdf.

Kurtosis[2] were measured to ensure the normality. The Cronbach Alpha Scale scored 0.77, which indicate that the questionnaire is reliable. In addition, the results of Skewness and Kurtosis ranged among −0.77 and 1.95, which is also indicate that the normality is acceptable.

In order to test the first and second research hypotheses, the descriptive measures were calculated. The descriptive analysis was used to explore the auditors' point of view regarding the role of analytical procedures in improving the quality of auditors' reports. In addition to exploring the auditors' point of view regarding the impact of the COVID-19 on the abundance of non-financial information about entities in the Jordanian market.

4.1 Descriptive Analysis Test

In addition to the multiple regression tests, the mean, standard deviation, minimum, and maximum are descriptive statistics used as supportive measures to tests the first and second hypotheses. Table 1 shows the descriptive results for the role of analytical procedures in improving the quality of auditors' reports and the impact of the COVID-19 on the abundance of non-financial information about entities in the Jordanian market from the auditors' point of view.

Table 1. Descriptive statistics of variables

Variable	Mean	Std. Dev.	Min	Max
Role of analytical procedures in improving the quality of auditors' reports	3.93	0.41	1	5
The impact of the COVID-19 on the abundance of non-financial information about entities in the Jordanian market	3.14	0.98	1	5

According to the descriptive results in Table 1, the mean of the auditors' point of view regarding the role of analytical procedures in improving the quality of auditors' reports was 3.93, while the standard deviation for the same variable was 0.41. Using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), the results indicate that the majority of auditors in Jordan agree that analytical procedures improve the quality of auditors' reports in terms of providing more evidence and facilitating the process of making an optimal opinion regarding the fairness of financial Statements.

Regarding the impact of the COVID-19 on the abundance of non-financial information about entities in the Jordanian market, the results showed that the mean was 3.14 and the standard deviation was 0.98. These results indicate that more than half of the auditors believe that the COVID-19 has led to a reduction in the volume of non-financial information available about entities in the Jordanian market. However, given the standard deviation result, the researcher expects that this result might be affected by the bias of some respondents' answers.

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[2] Skewness shows the symmetry or the lack of symmetry of the dataset. In addition, Kurtosis shows if data are heavy-tailed or light-tailed relative to a normal distribution.

4.2 Multiple Regression Tests

To test the third hypothesis of the current study that explores the expected moderating effect of the COVID-19 on the effectiveness of analytical procedures in improving the quality of auditors' reports in Jordan, the multiple regression tests were adopted. Accordingly, two regression models were developed and applied. The first is multiple regression to investigate the relationship between analytical procedures and the quality of auditors' reports. While the second is multiple regression to investigate the moderating effect of the COVID-19 on the relationship between analytical procedures and the quality of auditors' reports.

   - First regression Model

$$QAR = a0 + a1\,AP + ei$$

Where:	
* QAR = Quality of Auditors' Reports	* a_0, a_1 = The constants of the equation
* AP = Analytical Procedures	* ei = The error terms

   - Second regression Model

$$QAR = b0 + b1\,AP + b2\,APCOVID + \varepsilon i$$

Where:	
* QAR = Quality of Auditors' Reports	* b_0, b_1, b_2 = The constants of the equation
* AP = Analytical Procedures	* εi = The error terms
* $APCOVID$ = Analytical Procedures moderated by COVID-19	

   Table 2 shows the results of applying the aforementioned two regression models.

Table 2. The relationship between analytical procedures and the quality of auditors' reports, as well as the moderating effect of the COVID-19 on the relationship between analytical procedures and the quality of auditors' reports. (N = 86)

	QAR	QAR
Variables	Coefficient estimate	Coefficient estimate (Moderating)
Independent & moderating variables		

<div align="right">(continued)</div>

Table 2. (*continued*)

	QAR	QAR
Constant	0.015	0.622
	(0.078)	(0.021)
AP	0.367**	
	(0.005)	
APCP		0.057
		(0.091)
R Square	0.145	0.601
Adj. R Square	0.131	0.540
F-value	160.012	285.732
Sig. Level	0.003	0.026

P-value (Sig. Level) is reported in parentheses
* Indicates p value is significant at level 0.05, ** Indicates p value is significant at level 0.01
Keys: (QAR) Quality of Auditors' Reports. - (AP) Analytical Procedures. - (APCOVID) Analytical Procedures x COVID-19.

5   Results

According to the results of testing the first regression model that tests the relationship between analytical procedures and the quality of auditors' reports in Table 2, the coefficient measures show that there is a significant positive relationship between the implementation of analytical procedures and the quality of auditors' reports at the significance level of 0.01. Back to the descriptive results in Table 1, it was found that the majority of auditors in Jordan (3.93 out of 5) agree that analytical procedures improve the quality of auditors' reports, which is consistent with the result of regression model test. Consequently, the first hypothesis of the present study is accepted.

In addition, the coefficient measures of testing the second regression model that explores the moderating effect of the COVID-19 on the relationship between the implementation of analytical procedures and the quality of auditors' reports indicate that there is no significant moderating effect (relationship) in this regression. In contrast, the descriptive results in Table 1 indicate that more than half of auditors in Jordan (3.14 out of 5) agree that the COVID-19 affected the abundance of non-financial information about entities in the Jordanian market. The discrepancy between the coefficient measures and the descriptive results in this relationship may be attributed to the high value of the standard deviation that scored 0.98 (which is close to 1). Accordingly, the second and third hypotheses of the current study are rejected.

5.1   Discussion and Conclusion

The results of the current study have confirmed the effectiveness of analytical procedures in improving the quality of the auditor's reports. The researchers believe that this

result may be due to the fact that analytical procedures provide auditors with additional evidence that clarify many aspects of the financial statements. In this vein, [15] has found that analytical procedures play an important role in the audit process, specifically understanding business environment of clients, and expecting the potential misstatements in their financial reports. Similarly, [16] have discovered that the implementation of advanced analytical procedures increases the effectiveness and efficiency of business operations for companies. Further, [11] have also found that applying analytical procedures improves the audits' quality, saves time, and identifies incorrect facts of economic activities. Furthermore, [17] have concluded that Internal auditors must apply analytical procedures to improve the quality and effectiveness of the internal audit process. Finally, [14] have deduced that avoiding the application of substantive analytical procedures may decrease the effectiveness of substantive tests in the auditing process.

In addition, the study found that the COVID-19 did not affect the abundance of non-financial information about entities in the Jordanian market, nor the effectiveness of analytical procedures in enhancing and improving the quality of auditors' reports. The researchers expect that this result may be due to the auditors' use of advanced technological tools via the Internet, which may enable them to obtain the necessary financial and non-financial information without the need to move from one place to another. In this regard, [13] have found that the COVID-19 did not affect the audit procedures followed by 97% of audit firms in Australia. As well, [4] have discovered that auditors have introduced some new procedures in the audit process to maintain the quality of the audit process during the COVID-19. Therefore, the COVID-19 did not affect the quality of the audit process. Conversely, [4] have concluded that the COVID-19 social distancing has affected many aspects of the audit process [10]. Finally, [12] have deduced that the quality of audit did not affected by the use of information technology and the cost of audit during the COVID-19. On the other hand, they have discovered that the audit quality has affected by the auditors' competence during the COVID-19. The researchers believe that the discrepancy between the results of previous studies may be due to differences in the populations of studies, the methodology used in conducting the studies, or the measures of variables.

5.2   Recommendations of Study

Based on the above-mentioned results, the researchers first recommend the auditors in Jordan to continue their reliance on analytical procedures as one of the main methods in the audit process due to its effectiveness in enhancing the quality of auditors' reports in various circumstances. Second, when using analytical procedures during exceptional circumstances such as the COVID-19, researchers recommend auditors to develop innovative methods to overcome any obstacles that would affect the effectiveness of these analytical procedures. Finally, due to the great development in information technology and communications, the researchers recommend auditors in Jordan to benefit from these technologies in overcoming any obstacles they may encounter when implementing analytical procedures under exceptional circumstances such as the COVID-19.

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Financial Statements Auditing Process Within COVID-19 Pandemic (Case Study)

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Abstract. Auditors must evaluate whether the financial information that disclosed in the financial statements are adequate and not biased. Because in some cases, managements attempting to reduce the negative impact of uncertainties included economic crisis to keep the financial statements attractive to both current and potential investors.

The financial statements of a company as a case study analyzed for the previous period of Covid-19 crises (2019) and the period within Covid-19 crises (2020) and a set of recommendations formed and provided to the external auditors to support conducing audit process efficiently.

The study revealed that management of the company must understand and determine the effect of pandemic such as COVID 19 in its impact on the financial statements. In addition, the study recommended that management must attempt to predict future economic (not only debit or financial) crisis and its impact on their financial statements.

Keywords: Auditing · Financial crises · Covid-19 pandemic · Jordan

1 Introduction and Theoretical Background

In 2008 the faced crises consider as debit and financial crises related almost to banking sector [8, 11] and [9].

Due to the spread of coronavirus from one country to another, the disease was classified and considered as a rapidly spreading pandemic, as result, it was closed the countries' borders, airports and ports, companies and factories, and even Mosques and churches as well as people prevented from even exist from homes. These procedures lead to slow down of the economic and business [5]. This crisis may consider as economic one facing the entire economics around the world.

Hence, companies management started to reveal the effect of the widespread in their supplementary data or the note within financial statements included the impact of hinder of operation, company structure, lawful system, liquidity and working capital, evaluate valuation, and the effect of the hinder on the going concern and its future plans [2, 7] and [10].

On another hand, auditors under the responsibility to decide whether the companies had legitimately gotten it and distinguish the effect of COVID-19 on the Company's financial statements and whether uncover the impact on the related notes [14]. Further, consider management assessment of going concern and the required of audit process procedures in order to ensure of the validity of discloser and management assessment. Also, respond to the risks related to the management's assertions.

Defense law in Jordan within quarantine period affected domestic economic [13]. Revealed that Widening Credit Default Swap (CDS) spreads prior to the regulation, and stable CDS spreads following the introduction of the regulation. In particular, sovereign CDS of European crisis-hit entities are stable since the regulation was introduced [3, 12] and [15].

Within covid-19 pandemic there are many challenges that faced the management of the companies such as fraud risk factors [4], business slow down, competitor's actions, customers demanded and loyalty, government laws and regulation, market requirements, customer needs and wants, uncertainties, etc.

However, the most critical challenge these days' that faced the management are uncertainties; which is a general and comprehensive concept included uncertainties about the contingencies, management estimates, market requirements, government laws and regulation and economic crisis such as coronavirus, etc.

In the light of coronavirus and its effect of the economic in 2020, management today should understand and determine the effect of coronavirus on the audited (2019) and (2020) financial statements as well as disclosed the impact into the notes related to the financial statements. Failure to disclose the impact of the coronavirus or any type of crisis or uncertainties may be will make the financial statements materially misstated and of sure will lead the users to make wrong decisions. Further, as we mentioned before, also the board of director has oversight function to ensure that the management make good responses not only in operation wise and on reporting wise.

Therefore, the general objectives of the research are to ensure that the management understand and determine the impact of COVID-19 on the audited financial statements, and ensure that the management disclosed the effect of COVID-19 in notes related to the financial statements, in addition to determine the independent auditor's responsibility regarding the uncertainties in their audit procedures (Tables 1, 2 and 3).

2   Methodology

The research attempting to measure the relationships between uncertainties within Covid-19 and the audited financial statements for a company that operating in tires industry as a case study.

Therefore, the study used the financial statements for certain company to compare the balance sheet and income statements figures in the financial year ended at December 31, 2019 and December 31, 2020 and December 31, 2019 and December 31, 2020 respectively to determine positive or negative impact of COVID 19 on the financial statements and the financial ratios. Then, depending on the results and conclusions a recommendations formed to auditors in practical field to support conducting audit process with more efficiency.

Table 1. Statement of financial position as of December 31, 2020

	Note	December 31, 2020	December 31, 2019
Assets			
Current assets			
Cash and bank balances	5	9,979,586	16,808,808
Trade receivables	6	25,135,320	28,886,412
Inventories	9	36,204,150	26,642,613
Total current assets		71,319,056	72,337,833
Non-current assets			
Property and equipment	10	566,484	656,201
Right of use assets	11	10,006,883	12,300,772
Deferred tax assets	12	4,241,132	4,241,132
Total non-current assets		14,814,499	17,198,105
Total assets		86,133,555	89,535,938
Current liabilities			
Trade payable, accrued and other liabilities	13	15,728,452	7,382,123
Due to related parties	7.4	43,037,522	44,400,519
Tax and income tax provisions	12	365,039	365,039
Current portion of lease liabilities	14	5,080,531	5,080,531
Total current liabilities		64,211,544	57,228,212
Non-current liabilities			
Employee benefits liabilities	15	397,624	266,006
Non-current portion of Lease liabilities	14	5,026,821	7,290,674
Total non-current liabilities		5,424,445	7,556,680
Total liabilities		69,635,989	64,784,892
Equity			
Share capital	1	40,000,000	40,000,000
Accumulated losses	23	(23,502,434)	(15,248,954)
Total equity		16,497,566	24,751,046
Total equity		86,133,555	89,535,938

Table 2. Statement of profit or loss for the year ended at December 31, 2020

	Note	2020 June	2019 June
Sales	17	22,656,863	34,526,144
Cost of sales	7	(23,104,038)	(33,124,191)
Gross (loss)/income		(447,175)	1,401,953
Selling and distribution expenses	18	(7,470,202)	(6,918,173)
General and administrative expenses	19	(227,957)	(942,260)
Finance cost	7 & 11	(136,914)	(85,265)
Other income		28,767	210,230
Loss before tax		(8,253,481)	(6,333,515)
Tax	12	–	(176,813)
Deferred tax	12	–	1,690,600
Loss for the year		(8,253,481)	(4,819,728)
Other comprehensive income for the year:			
Items that will not be reclassified subsequently to Profit or loss:			
Re-measurement of employee benefits liabilities	15	–	81,099
Total comprehensive loss for the year		(8,253,481)	(4,738,629)

Table 3. Statement of cash flow for the year ended at December 31, 2020

	2020	2019
Cash flows from operating activities		
Net loss before income tax	(8,253,481)	(16,667,028)
Adjustments for:		
Depreciation	2,383,606	2,892,945
Finance charges on lease liabilities	136,914	170,529
Allowance for expected credit loss	–	530,634
Provision for employees' benefits	131,618	217,880
Changes in:		
Trade receivables	3,751,092	3,542,252
Inventories	(9,561,537)	8,090,193
Accounts payable, accrued and other liabilities	8,346,329	526,174
Due to related parties	(1,362,997)	(27,291)

	2020	2019
Cash used in operations	(4,428,456)	(723,712)
Tax paid	–	(171,080)
End-of-service indemnities paid	–	(55,669)
Net cash used in operations	(4,428,456)	(950,461)
Cash flows from investing activities		
Purchase of property and equipment	–	(35,340)
Net cash used in investing activities	–	(35,340)
Cash flows from financing activities		
Payment of lease liabilities	(2,400,766)	(2,814,037)
Absorption of accumulated losses	–	11,688,128
Net cash (used) from financing activities	(2,400,766)	8,874,091
Net (decrease)/increase in cash at banks	(6,829,222)	7,888,290
Cash at banks at the beginning of the year	16,808,808	8,920,518
Cash at banks at the ending of the year/period	9,979,586	16,808,808

3 Results

The following represent the main financial ratios, horizontal and vertical analysis in both years ended as of December 31, 2020 and December 31, 2019 and the reason for the changes (if any) (Tables 4, 5, 6, 7 and Figs. 1, 2, 3):

Table 4. The main financial ratios in both years ended as of Dec. 31, 2020 and 2019

#	Financial ratio	Formula	2020	2019	Trend	Analysis
1	Current ratio	Current assets/current liabilities	1.11	1.26	Decreased	Negative
2	Acid Ratio	Current assets (exclude inventory)/current liabilities	0.55	0.80	Decreased	Negative
3	Cash ratio	Cash and short-term investment/current liabilities	0.16	0.29	Decreased	Negative
4	Accounts receivable turnover	Net sales/average accounts receivable	0.84	2.2	Decreased	Negative

Table 4. (*continued*)

#	Financial ratio	Formula	2020	2019	Trend	Analysis
5	Accounts receivable turnover in days	365/accounts receivable turnover	435	166	Increased	Negative
6	Accounts payable turnover	Net purchases/average accounts payable	4.45	19.84	Decreased	Negative
7	Accounts payable turnover in days	365/accounts payable turnover	82	18	Increased	Negative
8	Inventory turnover	Cost of sales/average inventory	0.74	2.3	Decreased	Negative
9	Inventory turnover in days	365/inventory turnover	493	159	Increased	Negative
10	Operating cycle	Account receivable days + inventory days – accounts payable days	846	307	Increased	Negative
11	Assets turnover	Net sales/average total assets	0.26	0.81	Decreased	Negative
12	Fixed assets turnover	Net sales/average fixed assets	37.06	94.8	Decreased	Negative
13	Return on assets	Net loss/average total assets	(0.94)	(0.18)	Increased	Negative
14	Profit margin	Net loss/net sales	(0.36)	(0.22)	Increased	Negative
15	Earnings per share	(Net loss – preference dividends)/weighted average of equity	(0.50)	(0.61)	Decreased	Negative
16	Payout ratio	Cash dividends/net loss	–	–	–	–
17	Debt to assets	Total liabilities/total assets	0.81	0.72	Increased	Negative
18	Debt to equity	Total liabilities/total equity	4.22	2.61	Increased	Negative
19	Time interest earned	Net income before interest and tax/interest	(59)	97	Decreased	Negative
20	Cash debt coverage	Cash flow from operation/average total liabilities	(0.065)	(0.007)	Increased	Negative
21	Current debt coverage	Cash flow from operation/average current liabilities	(0.07)	(0.007)	Increased	Negative

Table 5. Horizontal analysis for the year ended as of December 31, 2019 and 2020

#	Accounts	2020	2019	Variance	%
1	Cash and bank balances	9,979,586	16,808,808	−6,829,222	−41%
2	Trade receivables	25,135,320	28,886,412	−3,751,092	−13%
3	Inventories	36,204,150	26,642,613	9,561,537	36%
4	Property and equipment	566,484	656,201	−89,717	−14%
5	Right of use assets	10,006,883	12,300,772	−2,293,889	−19%
6	Deferred tax assets	4,241,132	4,241,132	0	0%
7	Trade payable, accrued and other liabilities	15,728,452	7,382,123	8,346,329	113%
8	Due to related parties	43,037,522	44,400,519	−1,362,997	−3%
9	Income tax provisions	365,039	365,039	0	0%
10	Current portion of Lease liabilities	5,080,531	5,080,531	0	0%
11	Employee benefits liabilities	397,624	266,006	131,618	49%
12	Non–current portion of Lease liabilities	5,026,821	7,290,674	−2,263,853	−31%
13	Share capital	40,000,000	40,000,000	0	0%
14	Accumulated losses	(23,502,434)	(15,248,954)	−8,253,480	54%
#	Accounts	2020	2019	Variance	%
1	Sales	22,656,863	34,526,144	(11,869,281)	−34%
2	Cost of sales	(23,104,038)	(33,124,191)	10,020,153	−30%
3	Selling and distribution expenses	(7,470,202)	(6,918,173)	(552,029)	8%
4	General and administrative expenses	(227,957)	(942,260)	714,303	−76%
5	Finance cost	(136,914)	(85,265)	(51,649)	61%
6	Other income	28,767	210,230	(181,463)	−86%
7	Tax	–	(176,813)	(176,813)	100%
8	Deferred tax	–	1,690,600	1,690,600	100%
9	Re-measurement of employee benefits liabilities	–	81,099	81,099	100%
10	Total comprehensive loss for the year	(8,253,481)	(4,738,629)	(3,514,852)	74%

Table 6. Statement of financial position - Vertical analysis for the year ended as of December 31, 2019 and 2020.

#	Accounts	2020	2019	Variance 2020	Variance 2019
1	Cash and bank balances	9,979,586	16,808,808	12%	19%
2	Trade receivables	25,135,320	28,886,412	29%	32%
3	Inventories	36,204,150	26,642,613	42%	30%
4	Property and equipment	566,484	656,201	1%	1%
5	Right of use assets	10,006,883	12,300,772	12%	14%
6	Deferred tax assets	4,241,132	4,241,132	5%	5%
7	**Total assets**	86,133,555	89,535,938	**100%**	**100%**
8	Trade payable, accrued and other liabilities	15,728,452	7,382,123	23%	11%
9	Due to related parties	43,037,522	44,400,519	62%	69%
10	Income tax provisions	365,039	365,039	1%	1%
11	Current portion of Lease liabilities	5,080,531	5,080,531	7%	8%
12	Employee benefits liabilities	397,624	266,006	1%	0%
13	Non-current portion of Lease liabilities	5,026,821	7,290,674	7%	11%
14	**Total liabilities**	69,635,989	64,784,892	**100%**	**100%**
14	Share capital	40,000,000	40,000,000	242%	162%
15	Accumulated losses	(23,502,434)	(15,248,954)	−142%	−62%
16	**Total equity**	16,497,566	24,751,046	**100%**	**100%**

* Assets compared with total assets and liabilities compared with total liabilities and equity compared with equity section
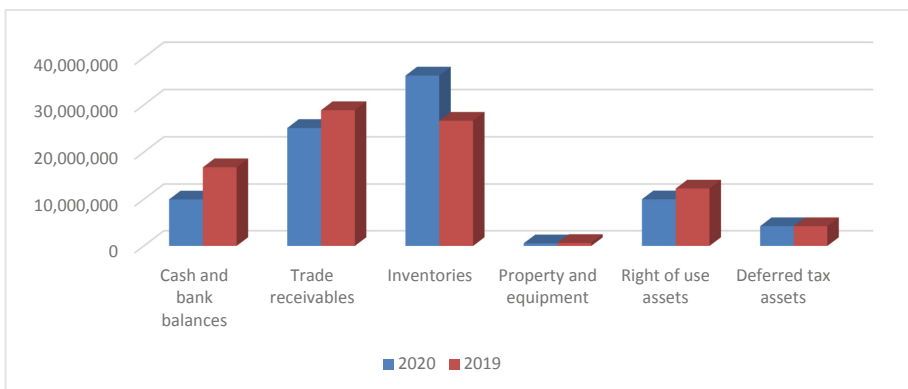
Fig. 1. Assets Comparison for the year ended as of December 31, 2019 and 2020
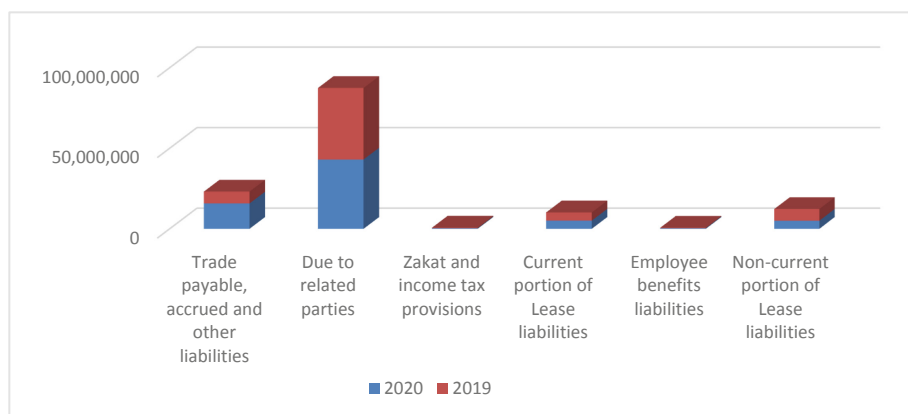
Fig. 2. Liabilities Comparison for the year ended as of December 31, 2019 and 2020

Table 7. Statement of profit or loss - Vertical analysis for the year ended as of December 31, 2019 and 2020.

#	Accounts	2020	2019	Variance 2020	Variance 2019
1	Sales	22,656,863	34,526,144	100%	100%
2	Cost of sales	(23,104,038)	(33,124,191)	−102%	−96%
3	Selling and distribution expenses	(7,470,202)	(6,918,173)	−33%	−20%
4	General and administrative expenses	(227,957)	(942,260)	−1%	−3%
5	Finance cost	(136,914)	(85,265)	−1%	0%
6	Other income	28,767	210,230	0%	1%
7	Tax	–	(176,813)	0%	−1%
8	Deferred tax	–	1,690,600	0%	5%
9	Re-measurement of employee benefits liabilities	–	81,099	0%	0%
10	Total comprehensive loss for the year	(8,253,481)	(4,738,629)	−36%	−14%

* Items have been compared with the net sales
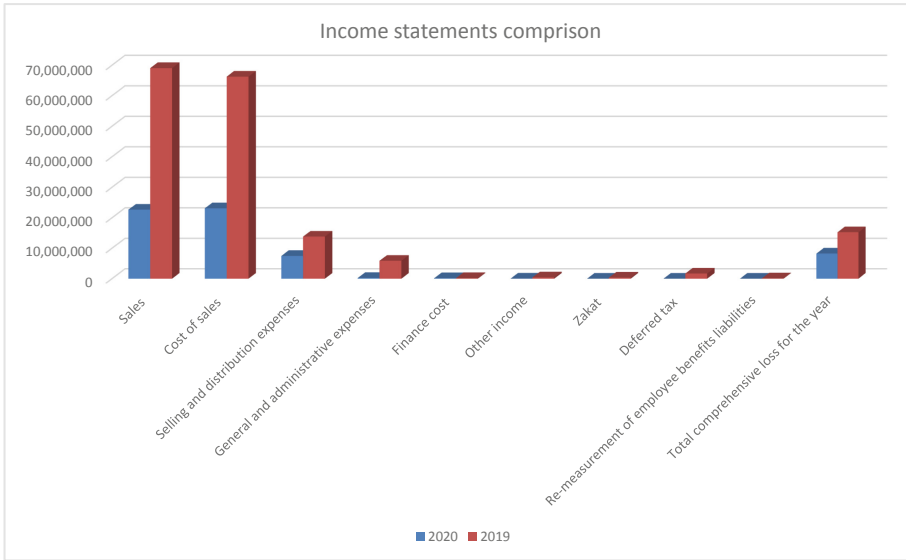
Fig. 3. Vertical analysis (Statement of profit or loss)

4 Conclusions

Based on previous results, we revealed that companies had been affected significantly due to the crisis of COVID 19. As well as, we believe that the management must identify and understand the effect of uncertainties due to economic crisis and disclose its impact in the financial statements in order to make the financial reporting consistent, enough, reliable and helpful to users to make their decisions.

Furthermore, auditor's responsibility is to express a reasonable an assurance that the financial statements are free from material errors, whether they are the result of a mistake or fraud by performing adequate, appropriate and appropriate auditing procedures to verify transactions, account balances and disclosures. As well as, the auditor's responsibility can be summarized as follows:

- Identify and evaluate the risks of material errors within financial statements, in addition to design and implement the procedures of audit process as a response to these risks and obtaining audit evidences that could be adequate and appropriate as a base for providing an auditor opinion.
- Obtain an understanding of internal control in order to design audit procedures appropriate to the circumstances and not to express an opinion on the effectiveness of the company's internal control.
- Evaluate the appropriateness of accounting policies used [6], and the reasonableness of accounting estimates and related disclosures made by management.
- Assessing of the going concern.
- Evaluating the overall of financial statements, including disclosures, presentation, it is structure and content, and determine whether their fair presentation of transactions and events.

5   Recommendations

Based on previous results and conclusions, may this recommendations helping the practical fields as of the following:

- The management of the company must understand and determine the effect of pandemic such as COVID 19 in its impact on the financial statements.
- The management must attempt to formalize their budgets depending on the COVID 19 crises impacts.
- The management may have to make cash reserves against any future probable crisis like coronavirus 'COVID 19'.
- The board of director must consume the responsibility to oversight the management and ensure:

  - Management determines and understands the pandemic impact on the financial reporting.
  - Management assesses risk and controls as well as governance periodically.
  - Management assesses the organization ability to continue as going concern and determine the future plans against any uncertainties.
  - Management responses that related to termination of employees and identify the effect on the structure of the Company.

- External auditor must ensure that the financial statements fair and consistent with the laws and regulation as well as with the international accounting standards and international financial reporting standards.
- The management must attempt to predict future economic crisis and its impact on their financial statements.
- In addition, may the external auditors consider internal auditors work within this economic crisis as a unique issue, similar to the case of continuous internal audit [1].

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The Impact of COVID-19 Pandemic on Tariffs: Case of Jordan

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Abstract. This study examines the impact of macroeconomic variables in addition to the COVID-19 pandemic on tariffs in Jordan for the period 2003–2020, by using Autoregressive Distributed Lag (ARDL) model, in order to reveal the long-run relationship between macroeconomic variables and tariffs. However, it became clear that all these macroeconomic variables contributed to tariffs in Jordan, and it was proven that there is a long-term relationship between them and tariffs. On one hand, GDP negatively affected tariffs in Jordan, on the other hand, imports and COVID-19 pandemic positively affected tariffs.

Keywords: Tariffs · Unit root test · Co-integration · ARDL · Covid-19 · Jordan

1 Introduction

Tariffs on imports play an important role in an economy, since tariffs represent a tool for protecting infant industries, promoting domestic production and jobs creation. The relationship between tariffs and economic growth depends on the characteristics of a country, it has been long argued for tariffs or free trade in economic theory (Orji and Ugwuany 2017). Additionally, because tax revenues are considered essential for economic growth and economic development in the economy of Jordan, and since tariffs are an important source of tax revenues, this study attempts to identify the determinants of tariffs in light of COVID-19 pandemic, and there are several studies that examined the determinants of tariffs in different developing and developed countries around the world (Vo and Tran 2021; Gnangnon 2020; Thornton and Molyneux 1995; & others). From the perspective of tariffs and macroeconomic determinants; Gnangnon (2020) examined the impact of tariff volatility and other macroeconomic variables (gross domestic product, terms of trade, institutional and governance quality, economic growth, per capita income and population size) on tariffs in 136 countries during the period (1995–2017).

In 2019, the global economy witnessed a health crisis due to COVID-19 pandemic which had a serious effect on global trade, costs of trade, jobs, consumption and human being (Vo and Tran 2021). In addition, Kumano (2020) argues that the economic recession caused by COVID-19 pandemic was different from past economic recessions, it was harmful for trade, production, consumption, profits of enterprises and employment. The period of the study, didn't exclude Jordan from being affected by COVID19 pandemic

besides the subsequent economic and social impacts on societies. The slowdown due to the pandemic caused a decline in economic growth and trade; therefor the study searches for the impact of this pandemic on tariffs in Jordan.

The main object of this study is to test of COVID-19 pandemic and confirm the effectiveness of the determinants of tariffs in Jordan, which leads to fill the gap of the literature lack in this aspect by verifying the short and long term motives for tariffs in Jordan, the impact of COVID-19 pandemic too. The model includes tariffs as a dependent variable while GDP, imports, and a dummy variable represents COVID-19 pandemic as independent variables. However, the study contributes to our knowledge, presents relatively groundbreaking work and investigating the determinants of tariffs in the pandemic. Moreover, the findings in Auto Regressive Distributed Lag (ARDL) framework reveal both the short and long term time horizon. The study is designed as follows, first the introduction. Second, the literature review. Third, the study methodology and results. Finally, the summary.

2 Previous Studies

Few studies have been conducted on tariffs in Jordan, including Mdanat et al. (2018) study of tax structure economic growth in Jordan for the period (1980–2015) by applying error correction techniques to annual data, and using many variables such as direct taxes, indirect taxes, Gross Domestic Product (GDP) which is one of the main indicators of economic activity and economic development and tariffs as taxes levied on imports. The study showed through results the existence of a relationship between tariffs and economic growth in Jordan, also it confirms the important role of tariffs in explaining GDP. Assche and Lundan (2020) study reviled a relationship between COVID–19 pandemic and import tariffs, where the pandemic affects trade costs.

In addition, Gnangnon (2020) analyzed the determinants of tariffs in 163 countries over the period (1995–2017) by using Feasible Generalized Least Squares (FGLS) approach to panel data. The results of the study showed that economic growth leads to a reduction in tariffs for some products such as primary products while imports contribute to tariffs. Moreover, Singh (2010) confirmed this result since economic growth motivates countries to reduce tariffs for trade liberalization.

Thornton and Molyneux (1995) examined the relationship between tariffs and some macroeconomic variables in Costa Rica during the period (1963–1992) by using Granger causality tests to annual data. The study confirmed a causal relationship between tariffs and real income, also between tariffs and terms of trade.

3 Methodology

3.1 Data

This study uses annual data during the period 2003 to 2020 to verify the determinants of tariffs in Jordan under COVID-19 pandemic. Data consisting of GDP were collected from the annual reports of the Central Bank of Jordan, and data consisting for both tariffs and imports subjected to tariffs were collected from the annual reports of Jordan Customs.

3.2   Model

To determine the tariff function, this study is relied on the model of Ancharaz (2003), Gnangnon (2018), and Gnangnon (2020), as follows:

$$Tf = f(M, GDP) \tag{1}$$

Whereas:
Tf = Tariff Revenues
M = Imports subjected to Tariffs
GDP = Gross Domestic Product

In order to determine the impact of Covid-19 pandemic, a dummy variable (Covid-19) was added, which was given (0) for the period before Coronavirus pandemic and (1) for the period of Coronavirus pandemic, so the model became as follows:

$$Tf = f(M, GDP, COVID - 19) \tag{2}$$

3.3   The Unit Root Test and the Co-integration Test

To avoid spurious regression, we start the analysis by determining the stationary variables of the model. Where, classical regression methods may be invalid if they are applied to non-stationary variables. This study uses the Dicky-Fuller test (ADF).

Table 1. Unit root test

Variable	ADF statistics		Integration degree
	Level	1st variance	
Tf	−3.137229***	–	I(0)
M	–	−2.684330*	I(1)
GDP	−2.673959***	–	I(0)

Note: ***, ** and * refer to 1%, 5% and 10% moral level, respectively
Source: Calculated by researchers

Table 1 shows the results of the Dickey-Fuller test (ADF), which indicates that imports contain a unit root at the level, but it became stationary at the level of 10% significance after taking the first variance, while tariffs and GDP were stationary at the significance level of 1%, so that all variables are integrated of degree I(0) and I(1). Therefore, we move to the co-integration test to examine the long-term equilibrium relationship. And since the degree of variables integration is a mixture of I(0) and I(1), it is preferable to use the ARDL Bounds Testing Approach to Co-integration for the purpose of verifying the existence of co-integration using ARDL estimation method to assess the short term coefficients and long term methods.

Table 2 shows the results of the Bounds Testing Approach to Co-integration, where the F-statistic was found to be significant at the 5% level, and the results showed the presence of co-integration between the variables.

Table 2. F-bounds co-integration test

	Value	Sig.	I(0)	I(1)
F-statistic	3.702725	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

Source: Calculated by researchers

3.4 Long-Term Relationship

The coefficients of the variables in the short and long run were estimated with optimal time delays of the ARDL model (1, 0, 1, 0), and the results were as follows (Table 3):

Table 3. Estimated long-run coefficients (ARDL)

Variable	Coefficient	Std. Error	t-statistic	Prob.
M	0.156251	0.027876	5.605310	0.0002
GDP	−0.000465	0.000862	−0.539541	0.0603
COVID-19	16.534538	8.660363	1.909220	0.0826
C	79.508075	33.390720	2.381143	0.0364

Source: Calculated by researchers
ARDL Long Run Form
Dependent Variable: Tf
Model: ARDL (1, 0,1, 0)

The above equation shows long-term variables indicating a positive import; where 1% increase in imports would increase tariffs by 0.15. This result agrees with the study of Malkawi (2019) and Ngeria (2013) which confirmed that higher imports leads to higher tariffs.

The negative sign of Gross Domestic Product indicates that an increase in Gross Domestic Product by 1% leads to increase in economic performance. Gnangnon (2020) pointed out that higher economic growth rates as a result of improvement in the institutional and governance quality generate a higher trade liberalization, but not in all products, and as a consequence, a decrease in tariffs for primary products and an increase in tariffs for manufactured products which contributes to lowering tariffs on all products.

Finally, the positive sign of COVID-19 referred to the positive impact on tariffs, which increased by 16.5% from the period where the pandemic didn't exist. And this result agrees with the study of Vo and Tran (2021) for WTO member countries which showed that COVID-19 pandemic contributed to volatile trade policies, weak global trade growth, and thwarting both investment activity and consumer demand for goods. Thus affected trade costs through increasing transport costs and tariffs.

3.5   Error Correction Model (ECM)

This approach allows us to overcome many problems in time series data, such as non-stationary, serial correlation and endogeneity of variables. The presence of co-integration indicates that at least one of the variables responded to deviations from a long run relationship. Therefore, we will check if tariffs correct imbalances, and if it has a dynamic causal relationship between variables; if the error term is significant, the showing down of the dependent variable is important in predicting the current movements of tariffs, and this means that tariffs adjust the error and returns to the previous equilibrium, also, the lag independent variables have a great explanatory power for current tariffs.

Table 4. Error correction form for tariffs

Cointegrating form				
Variable	Coefficient	Std. error	t-statistic	Prob.
D(IMPORTS)	0.096640	0.017040	5.671426	0.0001
D(GDP)	−0.002550	0.000856	−2.979355	0.0125
D(COVID_19)	7.203279	10.209328	0.705559	0.4951
CointEq(-1)	−0.574796	0.124648	−4.611366	0.0008
Cointeq = TARRIF - (0.1563*IMPORTS -0.0005*GDP + 16.5345*COVID_19 + 79.5081)				
	Coefficient	s.e.	t-stat.	Prob.
ECT	−.574796***	0.124648	−4.611366	0.0008

Note: *** indicates significance at 1%

Based on Table 4, the estimated ECT coefficient is significant at 1% level, which indicates that the imbalance of the past period of tariffs in the year is corrected at a speed of 0.57; this value means that any impact on tariffs will take it a long time to return to its equilibrium, unless there are other impacts.

3.6   Conclusion

This study aims to evaluate the macroeconomic determinants in addition to COVID-19 pandemic of tariffs in Jordan, using three independent variables: imports, GDP, and a dummy variable representing COVID-19 pandemic and annual data during the period of 2003 to 2020. The ARDL of co-integration test framework and the ECM were used to examine the short run and long run relationships between the variables since their degree of integration is different: I(0) and I(1), and it is appropriate when there is one long-term relationship between the basic variables of a small sample. Moreover, it was clear from the results that imports actively contributed to tariffs in Jordan between 2003 and 2020 while GDP negatively affected tariffs, and it was statistically proven that they have long run relationship with tariffs, and the study confirmed an increase in tariffs due to COVID-19 pandemic.

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Covid-19 and the Resurgence of the Hypodermic Needle Theory Applicability in Times of Crises

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Abstract. This study explored the continued applicability and relevance of Hypo-dermic Needle Theory, also named the Magic Bullet Theory. It used a quantitative research method using a survey tool designed to investigate a sample of citizens in Jordan in reference to their attitudes and behaviours of using both social media and traditional media during the Covid-19 pandemic. Regardless of all the criticism around the simplicity of the bullet theory and its assumption of an all-passive audience when it comes to receiving media messages, this research tests its applicability and relevance in times of pandemics and crises. The study found that Hypodermic Needle Theory remains of a much relevance to assess citizens behaviours during times of pandemics and crisis such as Covid-19. The study revealed that social media was more followed by the study sample during the pandemic to seek information. The perceived media effects were also higher for social media (M = 3.52) in comparison to traditional official media (M = 2.92). The study hypotheses shown no significant differences between males and females regarding their level of following Covid-19 topics and content which means they both follow it equally. Likewise, the study revealed no significant differences between the participants' age, education level and place of residence in relation to their following of Covid-19 over both social media and traditional media and its effects on the participants. Therefore, this study justifies the continued relevance of the bullet theory in times of crises such as Covid-19. These results also provide a stepping-stone for future empirical research in which investigates more on the effects of the media messages on audiences taking into account the scale of both information and misinformation online in times of crises.

Keywords: Covid-19 · Hypodermic needle theory · Magic bullet theory · Traditional media · Social media

1 Introduction

As soon as Covid-19 started in Wuhan, China, the root of the disease was quickly identified as a respiratory novel corona virus, and soon enough it has become a global pandemic that swept across many countries around the world [1]. The threat this pandemic has caused to public health is colossal [2]. Covid-19 created the largest global health crises humanity has ever lived [3]. Traditional media outlets as well as social media networks

including instant messaging applications were spaces to spread information about the pandemic [4, 5].

In Jordan, during the pandemic all media outlets served as spheres of knowledge to keep citizens informed of the unfolding events and developments around health precautions and guidance enforced by the government and the health ministry. On the one hand, traditional media provided timely coverage of the unfolding facts and other nuances around the virus and its ramifications through interventions by the World Health Organisation experts, government officials and health experts from the health institutions in the country [3, 6]. On the other hand, social media usage and penetration is high in Jordan, and it increased even more during the pandemic. It is reported to have gone higher between the period of January 2020 to January 2021 by 11 percent amounting to a total of 6.3 million of social media users in the country [7]. Globally, social media networks also emerged as platforms for disseminating health information to audiences [8, 9]. Nonetheless, social media networks were recognized by a considerable body of literature to be used to disseminate misinformation and fake news to citizens [10–13]. There is no denial that social media affordances such as the constant received notifications and updates from government officials, health institutions, voices shared by ordinary citizens, and celebrities, proved to be a place where everyone can get together to share their experiences about the virus. Likewise, it is considered an efficient source of information to keep citizens up to date with the ample amount of information about the pandemic [14, 15]. Equally, its wide adoption by citizens in the country, its practicality and accessibility made it a place that governments and health institutions could utilize to communicate their messages to Jordanians.

Prior to the pandemic, citizens relied on social media to obtain news updates not only about health issues but also about other subjects such as current affairs and politics. In addition, citizens in Jordan use social media constantly not only to get information but also in communication and sharing news information with others. Health scholars indicated that social media could provide many benefits and opportunities to spread and receive vital and relevant health information to patients [14, 16]. However, the nature of the Covid-19 pandemic has somewhat created a state of fear and worry which led citizens to seek help from the most timely and accessible channels of communication and information around them which could be traditional media outlets or social media networks [1, 17]. However, exposure to diverse media channels for long durations and frequency has led to psychological complications such as stress, anxiety, and depression [18]. Thus, this research is examining the degree in which Jordanians rely on either media i.e., mass media or social media networks to obtain information and updates about the pandemic and its effects on them.

2   Media Effects Through the Lens of Hypodermic Needle Theory

Research into media affects have been a core element of media and communication research since its inception [19]. Scholarship on media effects documents a wide variety of effects from little to large influences [20]. Over the years, media effects theories witnessed a continuous progress especially in the area of media effects on audiences [20]. The perception that the media holds a great power over people is one of the early lines

of research in media and audience studies which was brought to life by the prominent American political scholar Harold Lasswell. Afterwards media scholars used the term "bullet theory" interchangeably with "the stimulus- response theory", "the magic bullet" or "the hypodermic needle theory" [21–23]. The magic bullet theory was first conceptualized by Lasswell's book titled "Propaganda Technique in the World War" which was published in 1927. The Hypodermic Needle Theory indicates that the media including all mass media channels have a straight away direct impact upon audiences. This effect is also immediate and powerful like a magic bullet one it is shot it will have knock on effect upon those who received it. The theory hypothesizes that mass media could produce certain desired responses through injecting massages to a wide group of audiences [24]. However, this liner stream of understanding of the effects of media's messages on audiences was faced with criticism by the American sociologist Paul Lazarsfeld through his studies on elections and in the book "The People's Choice" [25]. It is described as an old fashion theory that does not take into account all the individualistic reception differences [25]. However, according to knowledge of the researchers, the theory has never been tested during the times of crises or pandemics like the one we live today. Thus, we argue that the media provides stimuli which then trigger some actions or responses. At the early days of the pandemic, media messages were so effective due to the serious of the matter and the lack of enough information around the virus.

3   Research Problem

During the pandemic, several government restrictions were applied to limit citizens interactions with each other in an attempt in fighting and curb the spread of the virus in Jordan. Jordanians had to stay at home and watch the media to keep informed about the virus, its impact upon individuals, learn how to fight it, and know how to behave socially and publicly around others. Therefore, this study investigates how media messages during a crisis such as Covid-19 could effectively impact audiences' behaviours and act in the same way due to the lack of knowledge about the crisis faced and as a consequence of being asked to stay at home, the media is the only source of information and the window to interact and watch the outside world during a crisis. As such people of different demographics could receive media messages and follow it the same way especially if it was guidance related messages. Media messages in this respect are like bullets fired from a gun which is the media and aimed into the spectators' head which exactly emulates the assumption the magic bullet theory.

4   Study Hypotheses

H1: There are no statistically significant differences in the respondents' degree of following the Covid-19 related topics and content between social media and traditional mass media due to their demographic differences.
H2: There are no statistically significant differences in the perceived effects by respondents of following the Covid-19 related topics and content between social media and traditional mass media due to their demographic differences.

H3: There is a relationship between the respondents' degree of following the Covid-19 related topics and content between social media and traditional mass media, and the effects of following Covid-19 related topics and content on them.

5   Method and Sampling

This study employs a survey method that uses a 5- point Likert scale that includes (5) Strongly agree; (4) Agree; (3) Neutral; (2) Disagree; (1) Strongly disagree. The survey method is the most appropriate to assess the levels of following Covid-19 related topics and content between social media and traditional official mass media by the Jordanian public through the lens of the hypodermic needle theory. The theory assumes that media messages have an effective power over audiences due to containing stimuli and influences that affect the emotions of the audience, making them respond quickly to media messages. The study sample comprises of all Jordanians who follow Covid-19 related topics and content over both social media and traditional official mass media. The study used an equal quota sample as a method to select the study participants. The survey was distributed between the period of 29th to 5th during the months of January and February 2022 across the three main Jordanian regions namely, the south region, the central region, and the north region. The distribution was 150 questionnaires distributed to each region amounting to a total of 450 questionnaires. In each region 75 questionnaires were distributed equally to each male and female gender. The table below presents the demographics data of the study sample (Table 1).

Table 1. Demographics of the study sample

Variable	Category	Percentage
Gender	Male	50%
	Female	50%
Age	Less than 25 years old	22%
	25 years to less than 35 years	28.9%
	35 years to less than 45 years	25.8%
	45 years and older	23.3%
Education level	High school (Tawjihi) or less	14.7%
	Diploma	11.8%
	Bachelor's degree	53.5%
	Postgraduate studies (Masters/PhD)	20%
Place of residence	Northern Jordan region (Irbid, Ajloun, Jerash, Mafraq)	33.3%
	Central Jordan region (Amman, Zarqa, Madaba, Balqa)	33.3%
	Southern Jordan region (Karak, Tafileh, Ma'an, Aqaba)	33.3%
Total (n) = 450		

6   Results and Discussion

Table 2. Respondents' degree of following the Covid-19 related topics and content as comparison between social media and official traditional media

Degree of following	Social media networks		Official media	
	Frequency	Percentage	Frequency	Percentage
High	225	50%	111	24.7%
Moderate	144	32%	156	34.7%
Low	81	18%	183	40.6%
Total	**450**	**100%**	**450**	**100%**
Mean (M)	**2.32**		**1.84**	

Table 2 indicates that the respondents' degree of following Covid-19 related topics and content was higher for social media networks (M = 3.32) in comparison to official traditional media (M = 1.84). The results showed that half of the respondents (50%) follow to high degree all Covid-19 related topics and content over social media networks. Whereas (40.6%) of respondents follow to a low degree Covid-19 related topics and content over official traditional media such as newspapers, radio, and television. These results are anticipated as social media networks has changed the face of communications today and provided citizens with much information about the pandemic and its subsequent daily updates [9, 14, 15]. However, social media's highly usage in comparison to traditional media brings the debate to the quality of information consumed on social media especially in times of crises. Unfortunately, a considerable number of studies have highlighted the spread of misinformation during the pandemic in which it was described as an infodemic [26–28]. Therefore, this poses a health threat around the authenticity of the messages received from social media especially if it is not coming from a stream of health specialised in respiratory diseases and epidemiology [26, 29].

Table 3. The perceived effects of following Covid-19 related topics and content over social media platforms

Statements	Mean (M)	Standard deviation
Social media platforms are an important source of information about all Covid-19 related content	4.06	0.459
My follow to social media platforms increased during the pandemic to dismiss my fears	4.05	0.558
My belief of the danger and seriousness of the pandemic increases whenever I follow social media platforms	4.03	0.621

Table 3. (*continued*)

Statements	Mean (M)	Standard deviation
My degree of dependence on social media platforms as a source of information at the start of the pandemic is far greater than now	4.02	0.521
I trust the credibility of the information I obtained from social media platforms during the pandemic	3.90	0.414
I regularly communicate with my friends to discuss the information displayed on social media platforms about the pandemic	3.72	0.397
The topics I encountered about the pandemic over social media made me feel very afraid	3.67	0.483
I adhere and commit to all prevention measures announced on social media with high accuracy	3.65	0.561
The information published on social media platforms about the numbers of infected, recovered, and deaths are accurate	3.59	0.451
Knowing about the roots of the pandemic is one of the most important topics I follow on social media platforms	3.58	0.391
The spreading suspicion of a conspiracy to spread the virus globally made me follow social media platforms more	3.52	0.687
The government pages on social media platforms support defense order and laws to protect citizens from the spread of the pandemic	3.42	0.595
Official sources via traditional media did not publish enough information about the pandemic, so I headed to social media platforms to know more	3.34	0.473
The information published on social media platforms is objective	3.04	0.472
My social media following has increased because it contains more public health and safety measures	2.98	0.369
I republished the information I received from traditional media over social media platforms	2.90	0.457
I discuss what I obtain from information about the pandemic on social media platforms	2.39	0.659
Overall	3.52	0.504

Table 3 shows that the most prominent effects behind the respondents' following of Covid-19 related topics and content over social media platforms were represented in considering social media platforms as an important source of information about all Covid-19 related content (M = 4.06). Followed by an increase of following social media platforms during the pandemic to dismiss respondents' fears (M = 4.05). Then, the increased belief of the danger and seriousness of the pandemic when following social media platforms (M = 4.03).

Table 4. The perceived effects of following Covid-19 related topics and content over traditional official media

Statements	Mean (M)	Standard deviation
My follow to official media increased during the pandemic to dismiss my fears	3.78	0.314
My belief of the dangerand seriousness of the pandemic increases when I follow official media	3.49	0.337
Official media is considered an important source of information about the pandemic	3.33	0.453
I analyze the information I receive from official media	3.30	0.325
Official media supports defense laws to protect citizens from getting the virus	3.17	0.391
The information I obtained from official media is beyond any doubt	3.16	0.633
My degree of dependence on official media as a source of information at the start of the pandemic is far greater than now	3.14	0.440
I think that government officials displayed on official media are highly credible	3.08	0.632
The information obtained from official media proved its credibility	3.06	0.458
The official media is covering the pandemic with high accuracy and professionalism	3.02	0.582
Official media has not published some of the information about the pandemic to not spread fear among citizens	2.75	0.513
Official media has published enough information about the pandemic	2.64	0.356
I follow all the government media's coverage of the pandemic	2.64	0.314
My follow to official media has increased because of their interest to protect me from the virus	2.39	0.331
During the pandemic, the official media focused on all the preventive measures against the virus	2.32	0.469

Table 4. (*continued*)

Statements	Mean (M)	Standard deviation
The official media focuses on all the statistics in terms of numbers of infection, recovery, and deaths	2.21	0.593
Official media amplifies the public's fears of pandemic	2.18	0.548
Overall	2.92	0.452

Table 4 indicates that the most prominent effects behind the respondents' following of Covid-19 related topics and content over traditional official media were reported in the increased following of official media during the pandemic to dismiss fears (M = 3.78). Followed by the increased belief of the danger of the pandemic when following official media (M = 3.49). Then, the reporting of considering of official media as an important source of information about the pandemic (M = 3.33). The results in table (3&4) present an agreement among the respondents about the most prominent effects behind following Covid-19 related topics and content over both social media platforms and traditional official media channels. These results are justified as both social media and traditional media are considered an important source of information to audiences during the times of crises and pandemics such as Covid-19 in order to get constant updates on what to do within those challenging times especially when there is a need for guidance all time through i.e., the crisis, natural disaster or pandemic. Considering both social media (M = 4.06) and traditional media (M = 3.33) as important sources of information during the pandemic and the relines on it with more prevalence to social media goes in line with the bullet theory that states the influence of the media but this time more so during a particular time which is the Covid-19 pandemic crisis. In Jordan, conventional media outlets such as television have been the main source of information in Jordan however the dawn of social media networks has shifted the way information is produced and mediated to audiences. The advent of social media networks has supplied citizens with plenty of diverse information and media platforms which hold an ample amount of diverse information which leads to various influences on the users of these platforms. However, media messages are not always factual especially over the social media space which can hold both credible information and misinformation at the same time. The challenge still remains when looking at the effects of misinformation and what it creates in effecting health decisions such as the belief in anti-vaccination and other conspiracies regarding Covid-19 [12, 30].

H1: There are no statistically significant differences in the respondents' degree of following the Covid-19 related topics and content between social media and traditional mass media due to their demographic differences.

Table 5. T test for studying the difference behind following Covid-19 related topics and content over social media in comparison to traditional media in regard to gender

Medium	Gender	Number (N)	Mean (M)	Standard deviation	(T) value	p
Social media	Male	225	2.28	0.962	-1.116-	0.265
	Female	225	2.36	0.481		
Traditional media	Male	225	1.76	0.928	-2.148-	0.320
	Female	225	1.92	0.622		

The results in Table 5 shows the result of the T- test which indicates no significant differences according to the P-value (P = 0.05). The table shows (P = 0.265) for both male and female when following to social media. Whereas (P = 0.320) for both male and female when following traditional media.

Table 6. ANOVA test for studying the differences behind following Covid-19 related topics and content over social media in comparison to traditional media in regard to age, education level, and place of residence

Variable	Medium	Source of variation	sum of squares	mean-square	(F) value	P
Age	Social media	Between groups	3.430	1.143	1.988	0.115
		Within groups	256.490	0.575		
	Traditional media	Between groups	3.955	1.318	2.111	0.098
		Within groups	278.525	0.624		
Education level	Social media	Between groups	4.991	1.664	2.911	0.086
		Within groups	254.929	0.572		
	Traditional media	Between groups	4.254	1.418	2.273	0.079
		Within groups	278.226	0.624		

(continued)

Table 6. (*continued*)

Variable	Medium	Source of variation	sum of squares	mean-square	(F) value	*P*
Place of residence	Social media	Between groups	0.853	0.427	0.736	0.480
		Within groups	259.067	0.580		
	Traditional media	Between groups	7.320	3.660	5.946	0.362
		Within groups	275.160	0.616		

Table 6 shows the results of One-Way ANOVA test which implies no significant differences according to the P-value (P = 0.05), when the respondents followed Covid-19 related topics and content either on social media or traditional media in regard to their age, education level, and place of residence. Based on the results shown in Table 5 and 6 it is evident that there are no significant differences among the respondents when following Covid-19 related topics and content according to demographic variables gender, age, education level, and place of residence. These results are justified as both traditional media and social media have a vital presence in the respondents' life during the time of Covid-19. These results reflect that during the time of the pandemic citizens regardless of any societal or individual differences followed both traditional and social media for more information, clarifications, and updates that is of a relevance to their lives.

H2: There are no statistically significant differences in the perceived effects by respondents of following the Covid-19 related topics and content between social media and traditional mass media due to their demographic differences.

Table 7. T test for studying the difference in the effects behind following Covid-19 related topics and content over social media in comparison to traditional media in regard to gender

Medium	Gender	Number (N)	Mean (M)	Standard deviation	(T) Value	*P*
Social media	Male	225	3.51	0.507	-0.302-	0.763
	Female	225	3.53	0.490		
Traditional media	Male	225	2.93	0.481	0.438	0.661
	Female	225	2.91	0.467		

The results in Table 7 presents the result of the T-test which suggests no significant differences according to the P-value (P = 0.05). The table shows (P = 0.763) for both

male and female when following social media. Whereas (P = 0.661) for both male and female when following to traditional media.

Table 8. ANOVA test for studying the differences behind the effects of following Covid-19 related topics and content over social media in comparison to traditional media in regard to age, education level, and place of residence

Variable	Medium	Source of variation	sum of squares	mean-square	(F) value	P
Age	Social media	Between groups	0.330	0.110	0.441	0.724
		Within groups	111.043	0.249		
	Traditional media	Between groups	0.661	0.220	0.981	0.402
		Within groups	100.184	0.225		
Education level	Social media	Between groups	0.549	0.183	0.737	0.531
		Within groups	110.823	0.248		
	Traditional media	Between groups	0.538	0.179	0.797	0.496
		Within groups	100.307	0.225		
Place of residence	Social media	Between groups	2.439	1.219	5.003	0.337
		Within groups	108.934	0.244		
	Traditional media	Between groups	9.478	4.739	23.186	0.462
		Within groups	91.367	0.204		

Table 8 shows the results of One-Way ANOVA test which implies no significant differences according to the P-value (P = 0.05), when assessing the effects of following Covid-19 related topics and content either on social media or traditional media in regard to their age, education level, and place of residence.

H3: There is a relationship between the respondents' degree of following the Covid-19 related topics and content between social media and traditional mass media, and the effects of following Covid-19 related topics and content on them.

Table 9. Pearson's correlation coefficient to measure the relationship between the respondents' degree of following the Covid-19 related topics and content between social media and traditional mass media, and the effects of following Covid-19 related topics and content on the respondents

The respondents' degree of following Covid-19 over social media			
The effects of following social media	Frequency	(Pearson correlation)	P
	450	0.735	0.000
The respondents' degree of following Covid-19 over traditional media			
The effects of following traditional media	Frequency	(Pearson correlation)	P
	450	0.647	0.000

Table 9 shows the results of Pearson Correlation coefficient test (Pearson's value between -1 and $+1$) in which it indicates that a positive significant strong relationship between the respondents' degree of following the Covid-19 related topics and content over both social media and traditional mass media, and the effects of following Covid-19 related topics and content on the respondents. Regarding social media, the value of Pearson Correlation is $r = 0.735$ which reflects a strong positive correlation between their following to social media and its effects on them. While the value of Pearson Correlation regarding traditional media is $r = 0.647$ which also reflects a strong positive correlation between their following to traditional media and its effects on them. Although, the correlation between the respondents following to social media and its effects is slightly stronger than their following to traditional media, these correlations demonstrate the concept of the bullet theory regarding the immediate impact and influence of the media regardless of the medium used. This impact echoes in times of crises such as Covid-19 where citizens seek information from all sorts of media which may have an impact on them due to the accumulative volume of messages received from all various media platforms. This impact also increases with the increase following to the media.

7   Conclusion

Given the massive amounts of media messages spread throughout the pandemic, this study aimed at understanding the perceived differences among individuals' behaviors towards these messages during the pandemic to evaluate the degree of impact of the media messages especially in times of crises such as Covid-19 when the media is the only source of information available to citizens. Thus, this study results reiterate that social media as well as traditional media remain of much importance to audiences as important sources of information. This importance is even heightened during times of pandemics and crises such as Covid-19. Jordanian citizens like the rest of other populations across the globe have thoroughly followed the coverage of the media about the pandemic especially at the early stages where citizens were in a state of worry and fear regarding the fatal nature of the virus. The effects of media messages were more apparent at the start of the pandemic due to the seriousness and the scale of the danger the virus caused to humanity. It was evident that both social media and traditional media had

perceived media effects according to the study sample. This effect is due to the narrative portrayed by the media about the scale of the pandemic and how detrimental the virus is to citizens' lives. Similarly, the study revealed the high effect of media messages on the increased awareness regarding the danger and seriousness of the pandemic over both social media (M = 4.03) and traditional media (M = 3.49).The study concludes that there is a strong positive correlation between the participants when following both media and its perceived effects on them i.e., social media (r = 0.735 and traditional media (r = 0.647). The study also found that there are no statistical differences in terms of gender, age, level of education and place of residence between the participants when following of both media content and their perceived effects. These results make the concept of Hypodermic Needle Theory relevant and true during times of crises such as Covid-19.

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Multiple Challenges Facing Auditing and Assurance During the Covid-19 in Jordan

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Abstract. The study aimed to identify the challenges and problems that faced the Jordanian auditor when providing audit and assurance services in light of the Corona pandemic and its impact on performing tasks, collecting evidence, issuing the report, and proposing proposals that contribute to reducing these problems or challenges in light of the spread of mutants of the virus. The length of stay and the uncertainty associated with it. To achieve the objectives of the study, challenges and problems were divided into two periods, the first period, which includes the sudden start of the virus during the year 2020 and how it affects the audits of financial statements for the year 2019 and confirmation. That follows the 2021 period and the emergence of mutations from the Covid virus (Delta and Amicoron) and the impact of the mutation on auditing, assurance and financial statements.

To conduct this study, the researcher used the inductive approach from reviewing the professional literature issued by professional organizations and professional companies related to the virus and its impact on auditing and confirmation processes and financial statements, and formulating a questionnaire about the expected challenges and mechanisms of assistance to overcome. A random sample was chosen from among these Jordanian audit offices, where The distribution of 180 questionnaires to them through the e-mail installed with the association of auditors, where the number of questionnaires that were answered was 160-questionnaires.

The study recommends the need to prepare a guide to guide auditors on the implementation of audits in light of the pandemic and the spread of the virus, and to hold training workshops by professional associations and audit offices on the mechanism for carrying out audit tasks, the mechanism for evaluating audit and assurance risks, preparing the report and modifying it, and using alternative methods in Gathering evidence and moving towards evidence of the use of electronic techniques in collecting evidence.

Keywords: Covid-19 pandemic (Delta, Macron) · Auditing · Audit and assurance challenges

1 Introduction and Problem of Study

The explosive outbreak of the Covid-19 Virus (particularly its Delta and Omicron variants) which still continues until the preparation of this study has directly affected public

health sector all over the world. In addition, restrictions on movement or gatherings, working hours of economic units and goods movement have been imposed; consequently, financial status of business organizations and their activities as well as cash flows of economic units have negatively been affected. Due to the outbreak of the Delta and Omicron variants of the Covid-19, some works of economic units in Jordan and their revenues for three consecutive months and more during 2019 were suspended until the defense order and night ban were cancelled. In addition, employees were absent because they are sick with Covid-19 or its variants or they were required to be in 14 day quarantine; during the outbreak of the covid-19 and its variants, many employees were laid off because the services of some facilities were stopped or working periods of facilities were shortened due to the ban; furthermore, unemployment rate increased; raw materials and supplies used in industrial operations were unavailable; production level decrease due to low demand level; in addition, the levels of inventory increased and the value of assets owned by the economic units such as inventories, property, equipment and marketable securities declined; moreover, financial market was fluctuated and deteriorated because of the state of uncertainty arises for various aspects of the covid-19 crisis; in addition, credit and liquidity problems and risks appeared; governmental interventions increased in order to protect the citizens and support business organizations; finally, consumer spending significantly decreased. Accordingly, if these circumstances, especially in the light of the emergence of (Delta and Omicron) variants of the Covid-19, continue, the economy level will largely decline and long terms negative impacts on the financial results of the economic units and the principle of continuity when preparing the financial statements. The financial crisis accompanying the Covid-19 virus and its variants is unprecedented. Thus, it is difficult to predict the results and future of the companies. The current and future repercussions of this crisis and its impact on the financial statements, therefore, have been assessed in the light of the conditions and facts surrounding each company as well as its sector. For example, the impacts of Covid-19 crisis' s repercussions on goods and services demand and cash flows as well as the decisions to grant credit and main creditors have been examined; and to which extent these repressions affected the liquidity and credit risks in addition to interest rates as well as the company's ability to meet its contractual obligations has been assessed. Accordingly, external Audit profession has not been easy since the auditor has faced various challenges while collecting appropriate audit evidence due to many reasons; for example, various restrictions have been imposed on auditors' movement; a distance between the individuals has been required; in addition, many precautionary measures have been taken in order to prevent. the spread of the Covid -19 such as a reduction of work capacity of companies and a delay of issuing the required approvals from the relevant authorities and a difficulty of observing the actual inventory of the stock. In addition, small and medium-sized audit companies have faced some difficulties related to evidence collection and the use of alternative methods of collecting audit evidence especially electronic evidence. During the Corona Virus pandemic, the audit profession has become more important because the Covid-19 crisis has created a high level of uncertainty and doubt of entity's ability to continue as a going concern. In addition, this pandemic has imposed a set of challenges and difficulties when performing audit processes especially in the light of the complicated conditions. Thus, it has become necessary to expand audit activities and

pay attention to obtain an adequate audit evidence which is considered an important tool of giving an appropriate opinion; in addition, fundamental audit risks and errors shall be reassessed due to the increase of fraud and error cases which may be exploited by the officials as well as the increase of uncertainty of the subsequent events plus the problem of process of auditing accounting and allocation estimates forced the auditor to make the amendment to audit report.

In the light of the complicated conditions and an absence of assurance, the auditor shall take into account all considerations and impacts which he/she may face during the performance of audit task. Furthermore, the auditor shall read the professional publications issued by the professional organizations since they help the auditor perform the audit procedures at a high level of quality. Due to the surprising impacts of the Corona virus pandemic on the results of 2019 audit processes and the accompanying challenges which have appeared at the beginning and subsequent periods of 2020, various relevant studies have been conducted. Thus, this study examines these impacts and challenges; and it aims at answering the following question:

What are the most prominent challenges facing audit profession and assurance in Jordan in the light of the Corona virus pandemic?

1.1 Hypotheses of Study

This study tests the following hypotheses:

First Hypothesis: Jordanian external auditor has faced a set of the challenges related to provide audit and assurance services during the first time period 2019 of the Corona pandemic and the accompanying variants (relating to 2019 financial statements;

Second Hypothesis: The continuity of the Corona pandemic and the emergence of its (Delta and Omicron) variants have imposed a set of challenges the processes of audit and assurance have faced during the year of 2021 and beyond.

Third Hypothesis: There are some guidelines contributing to overcome the challenges which the auditor may face when providing audit and assurance services in the light of the outbreak of the Covid-19 and its variants.

1.2 Literature Review

The most important studies are illustrated below:

– Ardeeny's study (2020) highlights the challenges facing the accountants and professional regulators when dealing with the impact of the COVID-19 pandemic on the elements of the financial statements of economic units, and on the results of their operations and their financial position in the year ending 12/31/2019 and beyond. It also examines the extent of the need to amend the international financial reporting standards as a result of the crisis of the COVID-19 pandemic,, the study has reached a set of results, the most important of which is that there are a set of challenges which have highly affected the the financial statements for the period ending

on 12/31/2020; these challenges facing the accountants and professional organizers require accounting treatments and special disclosures as a result of the uncertainty caused by the (COVID-19) pandemic, such as the book value For non-financial and intangible assets, including goodwill, in addition to cash flow difficulties plus credit losses, and disclosures related to the imposition of facility's continuity and the accompanying disclosures. The Masour's study (2021) highlights the repercussions of audit profession in the light of the latest global developments affecting the economies all over the world, known as the Corona Virus (the Covid-19). In this study, a descriptive approach has been used in order to identify the virus risks on the Palestinian economy; then, the auditor's work mechanism in the virtual environment during the crisis has been examined; in addition, the changes which may be made to the auditor's report have been illustrated. And Al-Khasawneh' s study (2020) aims at identifying the nature of relationship and impact between the Corona virus pandemic and external audit process performed in the Jordanian banks; in addition, it illustrates the impact of this pandemic on external audit process including professional judgment and skepticism as well as planning procedures and risk identification and assessment in addition to the method of collecting the audit evidence in the light of the relevant precautionary procedures. Furthermore, the study clarifies the method of auditing the accounting estimates and the imposition of the continuity as well as the subsequent events in the light of the continuity of this pandemic; moreover, the study illustrates the impact of this pandemic on various economic activities as well as the nature and the components of external audit in the light of the developments of this pandemic. The questionnaire has been distributed to the external auditors in the Jordanian banks. Finally, the study has concluded that there is a highly effective relationship between the Corona virus pandemic and professional judgment and skepticim of the auditor when planning and performing external audit processes as well as assessing the risks, response and the procedures of audit evidence and accounting estimates in the Hashemite Kingdom of Jordan. The Al-Tahan and Mahmoud' study (2020) aims to identify the most important implications of the Covid-19 pandemic on the external auditing environment and activities in the Egyptian environment in the light of Egyptian and international auditing standards. In order to achieve this goal, the researchers seek to clarify the most important problems and challenges which the external auditor may face when engagement with audit processes in light of the Covid-19 outbreak. In addition, some mechanisms that may help auditors to overcome these problems and challenges have been suggested, The study has concluded that the Covid-19 pandemic will create various problems and challenges for the external auditor, the most important of which are: a necessity of continuous updating of the audit plans and a high level of audit risk as well as insufficient and inappropriate usual audit procedures in addition to problems of audit the components of the group, the processes of assessing the company's ability to continue as a going concern. Problems audit subsequent events, auditing accounting estimates, and problems with amending the audit report. Furthermore, the study has illustrated that these problems and challenges can be overcome through the following mechanisms: the auditor shall obtain written representations from management and governance officials with continuous communication with them; the auditor shall also use a high level of professional skepticism and judgment; and he/she shall seek

the help of experts' work; in addition, he/she shall maintain professional ethics and independence requirements; the auditor shall adhere to a high level of audit quality, Conformity between Egyptian and international auditing standards; moreover, he/she shall design and perform additional auditing procedures using electronic technics; and the auditor shall expand the disclosure of the key audit matters with the audit report. Furthermore, a sufficient time shall be given for the auditors to complete their work, and reviewing the scientific and practical qualification of the auditor becomes a necessity; the work of the internal auditors shall be used; finally, the risk-based audit approach shall be adopted. Shehata's study (2020) aims at examining the repercussions of the Corona virus pandemic on the matrix of the roles and fields of modern internal audit profession by downloading the previous relevant versions and academic studies which are related to the nature the matrix of the advisory and confirmatory roles and fields of modern internal audit profession. In addition, the study illustrates the advisory and confirmatory roles of internal audit profession played in the fields of control, the risks, and the governance of company activities and operations in general. Furthermore, the study clarifies the role of modern internal audit profession and its three field in specific. Finally, the study concludes that the mangers of the internal audit department face many challenges in the light of the Corona virus pandemic. Accordingly, the plans and strategies of audit processes developed shall necessarily be flexible and they shall respond quickly to the accelerating changes which has occurred or will occur in the work environment of the companies. In addition, performance quality of the internal audit profession shall be maintained; furthermore, a great attention shall be paid to the risk management; technological infrastructure of audit office shall also be developed; finally, the managers of internal auditor department shall reprioritize the fields and roles of internal audit matrix. It is noted that previous studies have touched upon the subjects related to the impact of the pandemic on the audit profession and the most important problems which face the auditor when performing audit and assurance processes. And this study is considered a complement to these previous studies; it is a comprehensive review of audit and assurance services and is concerned with the Jordanian environment. In addition, global American and British professional organizations and companies have interested in issuing the professional publications; and they have determined the main fields which need to be reviewed by the auditors or which have been affected by the pandemic; these fields include the following: identification and assessment of the risks of essential misstatement, the response of the auditor to assessed risks, the mechanism of audit evidence collection; and the method of reviewing accounting estimates as well as the subsequent events and the most important amendments to the opinion of audit reporter plus important assurances of audit report.

2 Materials and Method

2.1 Methodology of Study

For achieving the purposes of study, inductive approach has been used in order to collect and analyse the data related to the main elements of the study and build the theoretical framework which is related to the challenges facing the external auditor, deductive

approach has been used in order to design an appropriate questionnaire. In addition, five-likert scale has been used in order to answer questionnaire's questions and test the hypotheses of study.

2.2 Population and Sample of Study

A population of study consists of audit offices and companies licensed by the Council for Regulating the Auditing profession in Jordan and registered actually with the Association of Auditors; a random sample has been selected; 180 questionnaires have been distributed via the association's e-mail; 16 questionnaires have been responded.

2.3 Reliability of Study Tool

In order to ensure the reliability of study tool, internal consistency (Cronbach's alpha) coefficient has been calculated; Table 1 illustrates these coefficients; and these ratios have been considered appropriate for the purposes of this study.

Table 1. Internal consistency (Cronbach's alpha)

Field	Internal consistency
The Corona virus pandemic have imposed a set of challenges which audit and assurance processes have faced during the first time period of the pandemic (related to 2019 financial statements)	0.94
The continuity of the Corona pandemic and the emergence of Delta and Omicron variants have imposed a set of the challenges which the processes of auditing and assurance have faced during the time period of 2020 and beyond	.96
guidelines contributing to overcome the challenges which the auditor may face when providing audit and assurance services in the light of the outbreak of the Covid-19 and its variants	.96

2.4 Result Analysis and Hypotheses Testing

First Hypothesis Testing

Table 2 shows the arithmetic means of a set of challenges which face the Jordanian auditor during the first time period of the Covid-19,The closure procedures and movement restrictions accompanying the emergence of the Covid -19 have resulted in the necessity of reviewing audit plans and programs applicable in Jordanian audit offices in addition to the need to review the process of assessing the material errors and audit risks,Closure procedures have contributed to a shift toward a remote audit. Here, using the electronic means in collecting the audit evidence and obtaining the report through the electronic

Table 2. Arithmetic means of statements related to first hypothesis

The Corona virus pandemic and the accompanying variants has imposed a set of the challenges which the audit and assurance processes have faced during the first time period of the pandemic (relating to 2019 financial statements; these challenges can be summarized as follows	Audit services		Assurance services	
	Arithmetic mean	Response orientation	Arithmetic mean	Response orientation
The need to review and update the audit plan prepared in the light of the emergence of the Covid -19 virus and the accompanying precautionary procedures	4.20	Very high	4.22	Very high
The precautionary procedures (the movement restrictions and closures) accompanying the emergence of the Covid 19 have imposed the need to amend the audit and assurance procedures during 2020	4.30	Very high	4.30	Very high

(*continued*)

Table 2. (*continued*)

The Corona virus pandemic and the accompanying variants has imposed a set of the challenges which the audit and assurance processes have faced during the first time period of the pandemic (relating to 2019 financial statements; these challenges can be summarized as follows	Audit services		Assurance services	
	Arithmetic mean	Response orientation	Arithmetic mean	Response orientation
Reviewing the assessment of the nature and level of material audit errors has become a necessity	4.25	Very high	4.32	Very high
Electronic video techniques shall be used in order to complete the interviews required for the audit process in the light of precautionary procedures and closures	4.40	Very high	4.30	Very high
The methods of obtaining the audit evidence have been modified; and the audit evidence including the certifications, has been electronically collected	4.42	Very high	4.22	Very high

Table 2. (*continued*)

The Corona virus pandemic and the accompanying variants has imposed a set of the challenges which the audit and assurance processes have faced during the first time period of the pandemic (relating to 2019 financial statements; these challenges can be summarized as follows	Audit services		Assurance services	
	Arithmetic mean	Response orientation	Arithmetic mean	Response orientation
The auditor has faced the difficulties in obtaining the authority to access the data and data base and in auditing and collecting the evidence of the company, the subject of the audit, when performing remotely audit and assurance	4.4	Very high	4.3	Very high
Some precautionary procedures issued by the governmental authorities have affected the design and implementation of audit and assurance procedures	4.2	Very high	4.22	Very high

(*continued*)

Table 2. (*continued*)

The Corona virus pandemic and the accompanying variants has imposed a set of the challenges which the audit and assurance processes have faced during the first time period of the pandemic (relating to 2019 financial statements; these challenges can be summarized as follows	Audit services		Assurance services	
	Arithmetic mean	Response orientation	Arithmetic mean	Response orientation
The Corona virus is one of the emergent events in which the auditor shall disclose the results of company works which may occur positively or negatively in the future	4.20	Very high	4.20	Very high
When assessing the ability of the company to continue, various problem occur due to the unprecedented material impact	4.40	Very high	4.20	Very high
Problems relating to the precautionary procedures and their impact on the audit report have occurred, and they require a disclosure listed in the main audit matters paragraphs	4.30	Very high	4.25	Very high

(*continued*)

Table 2. (*continued*)

The Corona virus pandemic and the accompanying variants has imposed a set of the challenges which the audit and assurance processes have faced during the first time period of the pandemic (relating to 2019 financial statements; these challenges can be summarized as follows	Audit services		Assurance services	
	Arithmetic mean	Response orientation	Arithmetic mean	Response orientation
The auditor has faced the difficulties related to a lack of sufficient experience required for performing remotely using the electronic technologies	4.27	Very high	4.20	Very high
The auditor has faced a challenge of a total lack of electronic disclosure systems in the companies, the subject of the auditor or the Securities Commission	4.30	Very high	4.20	Very high
Total	4.33	Very high	4.28	

systems available in the company, the subject of audit has become necessary; unfortu-
nately, a lack of qualification of the auditor has been one of the challenges which have
faced the auditor.

Thus, there is a very high orientation of respondents' responses clarifying that there
are various challenges facing the auditor when providing audit and assurance services
in the light of the outbreak of the covid-19 and the accompanying variants; accordingly,
the respondents of the study accept the mentioned challenges.

In addition, total arithmetic mean of responses related to the challenges which have
faced the auditor when providing audit and assurance services has been compared with
standard mark 3 - hypothesis acceptance standard- by using t-test as stated in Table 3.

Table 3. Arithmetic Means and T-test of Statements related to the first hypothesis in comparison
with Standard Mark 3

First hypothesis	Arithmetic mean	T-value	Statistical significance
The challenges of the Corona Virus providing audit services	4.32	3.200	.007
The challenges of the Corona Virus when providing assurance services	4.28	2.600	.004

Table 3 indicates that there are statistical differences at (* = 0.05) between arith-
metic mean and standard mark 3 of the responses of the respondent sample. Thus, this
hypothesis stipulating that, jordanian external auditor has faced a set of the challenges
related to provide audit and assurance services during the first time period 2019 of the
Corona pandemic and the accompanying variants (relating to 2019 financial statements,
has been accepted.

Second Hypothesis Testing

Table 4 shows the arithmetic means of a set of challenges which face the Jordanian
auditor during the second time period of the Covid-19 pandemic The auditor has faced
a state of uncertainty and sudden decisions related to the closures and a reduction of
working hours (whether the company, the subject of audit or the auditor implementing
audit tests) in addition to the auditor or one of team member infected by the virus as
well as inability to work or delay of providing the auditor with the data because the
employees have sick with the Corona Virus. Thus, there is a very high orientation of
respondents' responses clarifying that there are various challenges facing the auditor
when providing audit and assurance services in the light of the outbreak of the covid-19
and the accompanying variants; accordingly, the respondents of the study accept the
mentioned challenges.

In addition, total arithmetic mean of responses related to the challenges which have
faced the auditor when providing audit and assurance services has been compared with
standard mark 3 - hypothesis acceptance standard- by using t-test as stated in Table 5.

Table 5 indicates that there are statistical differences at (* = 0.0() between arith-
metic mean and standard mark 3 of the responses of the respondent sample. Thus, this

Table 4. Arithmetic means of statements related to second hypothesis

The continuity of the Corona Virus pandemic and the emergence of its (Delta and Omicron) variants has imposed a set of the challenges which audit and assurance processes have faced during the time period of 2021 and beyond	Audit services		Assurance services	
	Arithmetic mean	Response orientation	Arithmetic mean	Response orientation
The continuity of the Covid-19 outbreak and its variants has imposed a challenge on the auditor of understanding the work environment and its risks due to uncertainty	4.40	Very high	4.20	Very high
The continuity of the Covid-19 outbreak and its variants has limited the assessment of the material errors	4.30	Very high	4.25	Very high
The continuity of the Covid-19 outbreak and its variants has imposed a challenge of assessing the value of audit risks due to the uncertainty	4.58	Very high	4.20	Very high

Table 4. (*continued*)

The continuity of the Corona Virus pandemic and the emergence of its (Delta and Omicron) variants has imposed a set of the challenges which audit and assurance processes have faced during the time period of 2021 and beyond	Audit services		Assurance services	
	Arithmetic mean	Response orientation	Arithmetic mean	Response orientation
In the light of continuity of the Covid 19 outbreak, the auditor has faced various problems related to the ineffectiveness of internal control systems when preparing the financial statements due the employees infected by the corona virus in the companies, the subject of audit	4.57	Very high	4.3	Very high
The level of fraud risks has increased because of a weakness of control systems and sudden shift toward the electronic work applications which are not totally ready	4.40	Very high	4.20	Very high

Table 4. (*continued*)

The continuity of the Corona Virus pandemic and the emergence of its (Delta and Omicron) variants has imposed a set of the challenges which audit and assurance processes have faced during the time period of 2021 and beyond	Audit services		Assurance services	
	Arithmetic mean	Response orientation	Arithmetic mean	Response orientation
In the light of the continuity of the Covid -19, the auditor has faced various problems relating to the assessment of imposition of continuity and its impact on the cash flows, financial position and organization work	4.4	Very high	4.20	Very high
The auditor has faced various problems related to the assessment of imposition of the continuity in the audit report due to the material impact of the Covid-19 outbreak and its impacts on various industrial sectors	4.2	Very high	4.35	Very high

Table 4. (*continued*)

The continuity of the Corona Virus pandemic and the emergence of its (Delta and Omicron) variants has imposed a set of the challenges which audit and assurance processes have faced during the time period of 2021 and beyond	Audit services		Assurance services	
	Arithmetic mean	Response orientation	Arithmetic mean	Response orientation
The auditor has faced various problems related to the subsequent events of the period of the outbreak of the covid-19 and its variants as well as the need to amend or disclose the financial statements	4.30	Very high	4.20	Very high
The auditor has faced the challenges related to the assessment of accounting estimates and their appropriateness during the time period of the spread and outbreak of the Corona virus and its variants	4.30	Very high	4.3	Very high
In the light of the spread of the Covid -19, the auditor has faced a challenge related to report opinion and giving a clean opinion due to its impact on the financial statement or company's continuity	4.42	Very high	4.20	Very high

Table 4. (*continued*)

The continuity of the Corona Virus pandemic and the emergence of its (Delta and Omicron) variants has imposed a set of the challenges which audit and assurance processes have faced during the time period of 2021 and beyond	Audit services		Assurance services	
	Arithmetic mean	Response orientation	Arithmetic mean	Response orientation
In the light of the spread of the Covid -19 virus and its variants, the auditor has faced a challenge related to an addition of paragraph to the auditor's report including main audit matters indicating that the spread of the corona virus has affected the organization's performance, its continuity and the economic risks	4.20	Very high	4.25	Very high
Total	4.37	Very high	4.24	Very high

Table 5. Arithmetic Means and T-test of Statements related to the second hypothesis in comparison with Standard Mark 3

Second hypothesis	Arithmetic mean	T-value	Statistical significance
The challenges of the Corona Virus when providing audit services	4.37	4.203	.00
The challenges of the Corona Virus when providing assurance services	4.24	3.617	.00

hypothesis, stipulating that the continuity of the Corona pandemic and the emergence of its (Delta and Omicron) variants have imposed a set of challenges the processes of audit and assurance have faced during the year of 2021 and beyond, has been accepted.

Third Hypothesis Testing

Table 6 illustrate the arithmetic means of the guidelines which may help the auditor overcome the challenges of providing audit and assurance services during the Corona Virus pandemic; Thus, there is a very high orientation of respondents' responses clarifying that these guidelines contributes to the reduction of the repercussions of the Covid-19 and its variants on the audit profession in Jordan. In addition, total arithmetic mean of responses related to the challenges which have faced the auditor when providing audit and assurance services has been compared with standard mark 3 - hypothesis acceptance standard- by using t-test.

Table 7 indicates that there are statistical differences at (* = 0.05) between arithmetic mean and standard mark 3 of the responses of the respondent sample. Thus, this hypothesis, stipulating that there are some guidelines contributing to overcome the challenges which the auditor may face when providing audit and assurance services in the light of the outbreak of the Covid-19 and its variants, has been accepted.

3   Results and Recommendations

3.1   The Results

The study has reached a set of results as follows:

– The Covid-19 pandemic has affected the audit and assurance plan and procedures the process of assessing the risks of material errors and audit risks during the first time period of the virus which is related to 2019 financial statements and the subsequent time periods of auditing and assuring the financial statements until the date of preparing this study; and the precautionary procedures such as wearing a muzzle and the condition of vaccination or test are still applied in Jordan;
– The respondents of sample study have agreed that there are a set of challenges related to obtain sufficient and appropriate audit evidence during the Corona pandemic and shifting to the use of electronic technologies has become necessary;
– The respondents of sample study have agreed that there is a challenge related to the ability of the company to continue during the Corona virus pandemic; and they have agreed that the covid-19 has affected business organizations and Jordanian economy; there is also a challenge of assessing the subsequent event and accounting estimates and the relevant disclosures;
– The respondents of sample study have agreed that there are guidelines help the auditor overcome the challenges which the auditor faces in the light of the Corona pandemic; professional guidelines shall be issued by the professional organizations; these guidelines relate to the impact of the Covid -19 pandemic on financial statements and the availability of appropriate means used for holding training courses on the subject of impact and use of electronic technologies in auditing the data and collecting the audit evidence.

Table 6. Arithmetic means of statements related to third hypothesis

The following guidelines may help the auditor overcome the problems and challenges which the auditor faces when providing audit and assurance services in the light of the spread of the Covid -19 and its variants:-	Arithmec mean	Response's orientation
The procedures shall be designed in order to use the electronic means and techniques in implementing and collecting the audit evidence (relying on information technology in implementing audit services)	4.55	Very high
Written decisions issued by the management and governance officials shall be obtained in order to clarify all potential and impactful effects on the financial statements during the the spread of the covid -19; continuous communication with the officials shall conducted in order to know all impacts	4.35	Very high
The principle of professional scepticisms shall be adhered to in order to deal with a state of uncertainty accompanying the Corona Virus	4.40	Very high
Training courses related to the impact of the Corona virus pandemic on the financial statements shall be held	4.64	Very high
Professional publications shall be issued by Association of the Auditor in order to guide the auditor in the process of implementing audit tasks in the light of the Covid -19 pandemic	4.35	Very high
Training courses related to the use of electronic technologies in collecting audit evidence and implementing audit task shall be held in order to clarify the impact of the Covid-19 pandemic on the financial statements	4.65	Very high
The auditor shall receive training related to the mechanism of dealing with different crises including the Covid-19 pandemic	4.40	Very high
The auditor shall be provided with a sufficient time in order to implement and hand over the audit in the light of the difficulties of work, closures and precautionary procedures	4.64	Very high
A coordination and cooperation between external and internal auditors is considered a necessity in the facilities, the subject of audit	4.35	Very high

Table 6. (*continued*)

The following guidelines may help the auditor overcome the problems and challenges which the auditor faces when providing audit and assurance services in the light of the spread of the Covid -19 and its variants:-	Arithmec mean	Response's orientation
Total	4.48	Very high

Table 7. Arithmetic Means and T-test of Statements related to the third hypothesis in comparison with Standard Mark 3

There are some guidelines which help the auditor to overcome the challenges which the auditor may face when providing audit and assurance	Arithmetic mean	t-value	Statistical significance
	4.48	3.203	.00

3.2 The Recommendations

– The study has reached a set of recommendations:
– Local and international authorities organizing the audit profession shall develop audit and assurance guidelines which are compatible with the conditions and cases of pandemic whether they are epidemics (health), wars or nature (earthquakes) and others;
– Jordanian auditor shall interest in adopting the risk-based audit approach in the light of the risks related to the Corona pandemic and the accompanying uncertainty;
– Jordanian auditor shall pay attention to electronic technical aspects when performing and implementing audit processes whether in emergent or normal cases;
– Jordanian auditor shall be continuously trained on the electronic technologies and the field of its use;
– The auditor shall use professional and technical experts, especially when auditing the accounting estimates in the light of high levels of uncertainty which involves the accounting estimates in addition to government decisions regarding the prevention of debater's imprisonment.

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The Extent of the Impact of Bank Deposits on Credit Facilities in Jordan in View of the COVID-19 Pandemic

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Abstract. The study aims to highlight the role of the volume of deposits of all kinds with banks in influencing credit facilities granted by banks in Jordan over the period 2010–2020. The COVID-19 pandemic has generated a state of economic uncertainty, leading to shop closures and social distancing. Government intervention is necessary through monetary policy decisions by the central bank. It provides liquidity to banks and therefore this affects credit available to oil the wheels of the economy.

The study showed the existence of a direct positive relationship between the volume of deposits with banks and the volume of granted credit facilities, so that the volume of deposits in banks is constantly increasing with the progress over the years and is accompanied by a continuous increase in the volume of granted credit facilities. Where the lowest amount of deposits was recorded at the beginning of the period in 2010 by 22,504 MJOD accompanied by the lowest amount of facilities granted recorded for the same period and the same year 14,451 MJOD and with the succession of years, all deposits and granted facilities continued to increase until the end of the study period in 2020 where deposits were recorded The highest value amounted to 36,789 MJOD and credit facilities recorded the highest value for the same period and the same year, with a value of 24,634 MJOD.

Even at the end of the study period in 2019 and 2020, during the outbreak of the COVID-19 pandemic, the volume of deposits in banks maintained a positive change rate of 4.3% and 4.2%, respectively, and credit facilities also maintained a positive change rate of 3.7% and 5.7%, for the same period.

Compared to the previous year for both years, this confirms the direct relationship of deposits to the volume of credit facilities considering the COVID-19 pandemic. This positive impact of deposits on loans remain in steady increase due to the monetary policy that used by the central bank in reducing the monetary reserve ratio by 75 points in 2019 and 150 points in 2020 in a way to stand up the pandemic.

Keywords: Bank · Deposits · Loans · Credit facilities · COVID-19 · Central bank

1   Introduction

The COVID-19 pandemic is affecting all human beings, and from there the economy in general, as a result of the precautionary measures taken by governments to limit the spread of the virus. Accordingly, shop closures and the state of uncertainty has spawned economic instability, prompting governments to intervene to try to control the economic repercussions. This has been achieved through monetary policies used by the central banks to inject money and indirectly revive the economy [1].

In this study, the volume of deposits in banks is considered from the perspective of their impact on granted funds. The banking industries are among the main drivers of most of the economies in the world because they channel money through granting credit facilities and investing money. In addition, banks carry out local and foreign currency exchange and wealth management, and their primary function is to operate funds so that they act as a link between depositors and borrowers, giving a percentage of the funds to the depositor and taking a higher percentage from the borrower for continuity and profitability [2].

Additionally, the mechanism for making deposits was studied and defined by Cannan in The Meaning of Bank Deposits [3], where he explained how banks work in terms of deposits and lending. The relationship is clarified through the process of deposits with separate amounts of money that the bank obtains and lends in return. Thus, the bank plays the role of a mediator in taking money from its owner and lending it to the party that needs it and gets a fee for its work. Cannan also defined deposits as money deposited in banks and kept until the depositor withdraws this money [3].

Furthermore, loan is the process of giving and taking money between a lender represented by a bank or financial institution and a borrower, in which a sum of money is borrowed by individuals or companies in order to develop the money supply. He is obligated to repay the money within a certain period of time in addition to the interest on the loan, which is one of the sources of income for the lender [4].

Hence the importance of the study, which looks at the impact of the volume of deposits in banks for the 2010–2020 period on credit facilities granted and the importance of government intervention. This is a consequence of monetary policies followed by the central banks in light of the COVID-19 pandemic to maintain economic stability.

Following this introduction, the second section will address the role of the central banks, the third section will deal with previous studies, the fourth section will talk about methodology, and the last section will summarize the study and the recommendations.

2   Central Banks

The Rex Bank of Sweden established in the 17th century was the first central bank. It was followed by the Bank of England as a joint stock company aimed at buying government debt, after which banks similar to the Bank of England were established in Europe. These central banks became huge reserves because they absorb the reserves of

the banking network and it allowed them to be the primary lenders in the financial crises of their bank correspondents.

In the era of the gold standard, the amount of money banks could offer was restricted by the value of the gold they held, in particular in emergency situations. In the modern era, the rule of the scientist Walter Bagehot prevailed that central banks must merge private interest with general interest of the banking system as a whole. As a consequence, the central bank is the authority responsible for policies for supplying money and credit in a country. Its main objectives are price stability in maintaining a sustainable low rate of inflation, stability of the growth of the real economy and financial stability with a payment system avoiding financial crises.

To achieve these goals, the central bank implements monetary policies with specific tools, open market operations, lending discount window and changes in reserve requirements to influence short term interest rates and the monetary base (The monetary base is the currency held by the public in addition to the reserves of the central bank) [5].

Substantially. The central bank controls the access to currency by increasing or decreasing the money available in the country by implementing its monetary policies in order to prevent inflation and deflation in a way that ultimately maintains market stability to avoid any future economic crises [6].

2.1   Monetary Policies of the Central Bank

Open Market Operation. Procedures for buying and selling securities in the free market. When the central bank buys securities, it increases the money supply to counteract stagnation in the market. On the contrary, when the central bank sells securities, it reduces the money supply to counter the inflationary situation in the market.

Changes in Reserve Requirements. In the banking system, the central bank imposes a certain percentage of deposits in banks in favour of the central bank, which is the total required reserve with the central bank. In a recession, the central bank lowers the required reserve ratio, which increases the money supply and enables the commercial bank to grant more loans. On the other hand, in case of inflation, the central bank raises the required reserve ratio, which causes the money supply to fall. Commercial bank is obligated not to grant or refuse loans.

Lending Discount Window. It is the rate of interest on loans granted by the Central Bank to commercial banks, as well as transactions in loans between commercial banks, and is the rate of interest on loans determined by the Central Bank. In the event of inflation, the central bank increases the discount rate, which leads to an increase in interest on loans granted by the commercial bank, and thus the money supply decreases. On the other hand, the central bank increases the money supply in a recession by lowering the discount rate, thus encouraging borrowing from commercial banks [6].

3 Previous Studies

Several studies have discussed the issue of deposits and loans and the extent to which the granted loans can be affected by the amount of deposits with banks.

3.1 Last Decade Analysis Over the Impact of Loans & Deposits on the Romanian Economy

The impact of loans and deposits with banks on the Romanian economy for the period between 2007–2018 by analyzing deposits and loans granted and analyzing their development during the study period based on the annual traditions of the Romanian National Bank. It was concluded that there is a one-way link between deposits and loans so that deposits affect loans but loans do not affect deposits [7].

3.2 Operational Efficiency of Bank Loans and Deposits

The possibility of a relationship between loans and deposits in the Vietnamese banking system and the effectiveness of their use for the period between 2008–2015. A deterministic parametric model was adopted based on the corrected ordinary least squares and it was estimated on the time equations model. It was concluded that there is a one-way relationship between deposits and loans, so that deposits have a positive effect on loans [8].

3.3 Effect of Bank Deposits on the Lending Performance of Commercial Banks

The study aimed to know the effect of deposits in banks on the possibility of lending through a standard study of Société Générale Bank in Algeria for the period 2003–2019 using ARDL. The results of the study concluded that with the increase in the percentage of deposits, the granted loans increase, and loans are not more granted than the value of deposits with the bank, but there is a certain percentage of deposits granted in the form of loans [9].

3.4 Factors Affecting the Bank Credit an Empirical Study on the Jordanian Commercial Banks

The study aimed to examine the determinants of lending to commercial banks in Jordan, as the sample consisted of ten Jordanian banks for the period between 2005–2013 and many variables were used. The study concluded that banks are among the most important sources of financing for the Jordanian economy, and that the size of the bank and economic growth affect significantly on credit facilities granted by banks [10].

3.5   Does Banking Sector Performance Promote Economic Growth? Case Study of Jordanian Commercial Banks

The performance of commercial banks in contributing to economic growth in Jordan for the period from 2010 to 2015 using multiple regression models to analyze thirteen banks. The study concluded that there is a positive relationship between economic growth and the measure of banks' performance represented in deposits, credit facilities and profitability, and that the change in banks' performance significantly affects the economic growth of the state [11].

3.6   Relationship Between Bank Credit and Economic Growth: Evidence from Jordan

The relationship between bank credit in various sectors and economic growth in Jordan for the period between 1993–2014, where the study used different models to know the role of bank credit in the process of generating economic growth. The study concluded that the bulk of credit in Jordan is distributed through banks, and as a result, banks in various sectors played a positive role in promoting the growth of the Jordanian economy. Moreover, supporting and qualifying the financial sector increases the chances of economic growth in the country [12].

It can be concluded from the previous studies that there is a positive relationship between deposits on loans in banks, that is, as the percentage of deposits increases, the loans granted by banks increase. Loans granted by banks are considered one of the most important sources of financing for the state's economy. On the other hand, the state's economic performance is affected by the performance of banks operating in the state in terms of profitability and the amount of deposits and funds granted.

4   Methodology

The study is based on deposits in Jordanian banks and the extent of their impact on loans granted by banks considering the COVID-19 pandemic.

In order to delve into the study, Jordanian and non-Jordanian banks operating in Jordan will be identified for the study period. The volume of deposits with banks in Jordan will be reviewed for the period as the volume of granted credit facilities for the same period, and will be compared year by year in order to get to know the evolution for each operation individually. Moreover, we will pay attention to the decisions of the Central Bank that the government called in order to stand up to the pandemic.

4.1   Jordanian and Non-jordanian Banks Operating in Jordan for the Period Between 2010–2020

Table 1. Table of Jordanian banks operating in Jordan.

No.	Bank Name	Established in	Website
1	Arab Bank	1930	www.arabbank.com.jo
2	Jordan Ahli Bank	1956	www.ahli.com
3	Cairo Bank	1960	www.cab.com
4	Bank of Jordan	1960	www.bankofjordan.com
5	Housing Bank for Trade & Finance	1974	www.hbtf.com
6	Jordan Kuwait Bank	1977	www.Jordan-Kuwait-bank.com
7	Arab Jordan Investment Bank	1978	www.ajib.com
8	Jordan Commercial Bank	1978	www.jcbank.com.jo
9	Jordan Islamic Bank	1978	www.jordanislamicbank.com
10	Invest Bank	1989	www.investbank.jo
11	ABC Bank	1989	www.bank-abc.com/world/Jordan
12	Bank Al Etihad	1991	www.bankaletihad.com
13	Société Générale	1993	www.sgbj.com.jo
14	Capital Bank	1996	www.capitalbank.jo
15	Islamic International Arab Bank	1997	www.iiabank.com.jo
16	Safwa Islamic Bank	2009	www.safwabank.com

The first bank to be established in Jordan was the Arab Bank in 1930, followed by other banks until the establishment of a Safwa Islamic Bank in 2009 (Tables 1 and 2).

Table 2. Table of non-Jordanian banks operating in Jordan.

No.	Bank name	Licensed in	Website
1	HSBC	1949–2013	www.Jordan.hsbc.com
2	Egyptian Arab Land Bank	1951	www.arakari.com.jo
3	Rafidain Bank	1957	www.rafidain-bank.org
4	Citi Bank	1974	www.citibank.com/jordan
5	Standard Chartered Bank	2002	www.standardchartered.com
6	Bank Audi	2004	www.bankaudi.com.jo
7	National Bank of Kuwait-Jordan	2004	www.nbk.com
8	Bloom Bank	2004	www.blom.com.jo
9	National Bank of Abu Dhabi	2009–2017	www.nbad.com
10	Al Rajhi Bank	2011	www.AlrajehiBank.com.jo

The table shows the number of non-Jordanian banks operating and that worked in Jordan during the study period and the year of granting the license. It is also noted that the number of banks is 10, but some of them have resumed work in Jordan for reasons

not discussed in this study, including HSBC Bank, which was the first non-Jordanian bank to be granted a license to operate in Jordan, and its period of practice extended from 1949 to 2013. Abu Dhabi International Bank followed four years later, which was licensed in 2009 and terminated his license in 2017. Al-Rajhi Bank is the last non-Jordanian bank to be licensed to operate in Jordan in 2011.

It is concluded from the above that the number of non-Jordanian banks operating in Jordan in the current period is eight. The ten banks were mentioned for their entry in the years of study. Last, the number of Jordanian banks operating in Jordan for the same period is sixteen.

4.2   Volume of Deposits and Credit Facilities

Table 3. Table showing the volume of deposits in Jordan banks in MJOD, and the percentage of change compared to the previous year.

Year	Total deposits (MJOD)	Percentage change
2010	22504.8	—
2011	24377.9	8.3%
2012	24969.7	2.4%
2013	27593.2	10.5%
2014	30261.0	9.7%
2015	32598.5	7.7%
2016	32900.0	0.9%
2017	33197.7	0.9%
2018	33848.1	1.96%
2019	35305.3	4.31%
2020	36789.1	4.2%

Source: Association of banks in Jordan [13–23].

The table shows the volume of deposits in MJOD in Jordanian and non-Jordanian banks operating in Jordan as a whole for each period from 2010 to 2020 and the rate of change for each year compared with the previous year. It is noted that the volume of deposits maintained a positive rate of change during the successive years and through the table, it is noted that the lowest rate of change recorded was 0.9 from 2016 with a deposit volume of 32,900 MJOD compared to 2015 with a deposit volume of 32,598 MJOD and the same change rate was recorded for the following year compared to 2017 with a deposit volume of 33,197 MJOD compared to 2016 with a deposit volume of 32,900 MJOD (Table 3).

The highest rate of change was achieved by 10.5 from 2013, with a deposit volume of 27,593 MJOD compared with 2012, with a deposit volume of 24,969 MJOD. It is noted that the lowest amount of deposits was recorded at the beginning of the period with a value of 22,504 MJOD for 2010, and that the largest amount of deposits was recorded at the end of the period with a value of 367,890 MJOD for 2020 (Table 4).

Table 4. Table shows the total amount of credit facilities granted by banks in Jordan in MJOD for the period and the percentage change compared to the previous year.

Year	Total credit facilities (MJOD)	Percentage change
2010	14451.4	—
2011	15851.2	9.7%
2012	17829.8	12.5%
2013	18939.7	6.2%
2014	19274.5	1.8%
2015	21103.5	9.5%
2016	22905.8	8.5%
2017	24736.8	8.0%
2018	26111.1	5.54%
2019	27082.2	3.71%
2020	28634.6	5.7%

Source: Association of banks in Jordan [13–23].

The table shows the amount of credit facilities, in MJOD, granted by Jordanian and non-Jordanian banks operating in Jordan as a whole for each period from 2010 to 2020. It is noted that the volume of the granted facilities maintained a positive rate of change during successive years, and through the table it is noted that the lowest rate of change was recorded at 1.8 for the year 2014, with a volume of credit facilities amounting to 19,274 MJOD compared to the year 2013, with a volume of credit facilities amounting to 18,939 MJOD.

The highest change rate was achieved by 12.5 from 2012, with a volume of credit facilities amounting to 17,829 MJOD compared to 2011, with a volume of credit facilities amounting to 15,851 MJOD.

It is noted that the lowest amount of credit facilities was recorded at the beginning of the period with a value of 14,451 MJOD for 2010, and that the largest amount of credit facilities was recorded at the end of the period with a value of 28,634 MJOD for 2020.

4.3   Decisions of the Central Bank in the Representation of Monetary Policies in View of the COVID-19 Pandemic

The Central Bank of Jordan's decisions related to interest rates for 2019

Reducing main interest rate on monetary policy by 25 points in August 2019. The Open Market Operations Committee of the Central Bank decided to reduce interest rates on all monetary policy tools, starting 4 August 2019. The central bank's key interest rate (4.50%: CBJ Main Rate) annually.

Overnight deposit window in Jordanian dinars: 3.75% annually.
Overnight repurchase agreements: 5.25% annually.
Rediscount interest rate: 5.50% annually.

Reducing main interest rate on monetary policy by 25 points in September 2019. The Open Market Operations Committee of the Central Bank decided to reduce interest rates on all monetary policy tools, starting from 19 September 2019. The central bank's key interest rate (4.25%: CBJ Main Rate) annually.

Overnight deposit window in Jordanian dinars: 3.50% annually.
Overnight repurchase agreements: 5.00% annually.
Rediscount interest rate: 5.25% annually.

Reducing main interest rate on monetary policy by 25 points in October 2019. The Open Market Operations Committee of the Central Bank decided to reduce interest rates on all monetary policy tools, starting from 31 October 2019. The central bank's key interest rate (4.00%: CBJ Main Rate) annually.

Overnight deposit window in Jordanian dinars: 3.25% annually.
Overnight repurchase agreements: 4.75% annually.
Rediscount interest rate: 5.00% annually.

While the Central Bank of Jordan kept the interest rates it charges on the economic sectors support program (the medium-term advances program for banks) as it is at 1.75% for projects within the capital governorate, and 1.00% for projects in the rest of the governorates [22].

The Central Bank of Jordan's decisions related to interest rates for the year 2020

Reducing main interest rate on monetary policy by 50 points in March 2020. The Open Market Operations Committee of the Central Bank decided to reduce interest rates on all monetary policy tools, starting from 5 March 2020. The central bank's key interest rate (3.5%: CBJ Main Rate) annually.

Overnight deposit window in Jordanian dinars: 4.25% annually.
Overnight repurchase agreements: 4.5% annually.
Rediscount interest rate: 2.75% annually.

Reducing main interest rate on monetary policy by 100 points in the middle of March 2020. The Open Market Operations Committee of the Central Bank decided to reduce interest rates on all monetary policy tools, starting from 17 March 2020. The central bank's key interest rate (2.5%: CBJ Main Rate) annually.

Overnight deposit window in Jordanian dinars: 3.25% annually.
Overnight repurchase agreements: 3.5% annually.
Rediscount interest rate: 2.00% annually.

While the Central Bank of Jordan kept the interest rates it charges on the economic sectors support program (the medium-term advances program for banks) as it is at 1.75% for projects within the capital governorate, and 1.00% for projects in the rest of the governorates [23].

5   Conclusion

5.1   The Study Showed a Direct Positive Relationship Between the Volume of Deposits with Banks and the Volume of Credit Facilities Granted

The volume of deposits in banks is constantly increasing with progress over the years and this is accompanied by a continuous increase in the volume of credit facilities granted.

5.2   The Rate of Change Maintains Positivity During the COVID-19 Pandemic for Bank Deposits and Credit Facilities

At the end of the study period in 2019 and 2020, during the outbreak of the COVID-19 epidemic, the volume of deposits in banks maintained a positive change rate of 4.3% and 4.2%, respectively, and credit facilities also maintained a positive change. At a rate of 3.7% and 5.7% for the same period.

5.3   The Monetary Policy Decisions of the Central Bank in the Event of the Spread of the COVID-19 Pandemic Significantly Affect the Volume of Deposits in Banks and, Consequently, the Volume of Credit Facilities

The monetary policies pursued by the Central Bank reduced the required reserve ratio by 75 points in 2019 and 150 points in 2020 to inject more liquidity into the banks and as a result of giving more money. After the impact, bank deposits and credit facilities maintain a steady increase (Fig. 1).
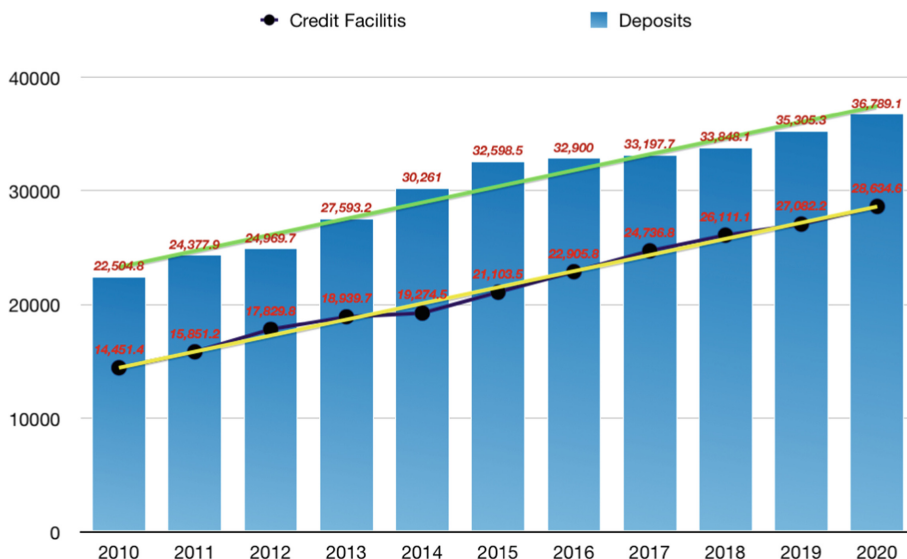
Fig. 1. Illustrating the relationship between the volume of deposits with banks operating in Jordan and the facilities granted by them in each year for the period 2010–2020.

The figure explains the relationship between the amount of deposits with banks in Jordan and its reflection on the credit facilities granted for the same period. So, it is noticed that the amount of deposits increases in an upward manner over the period, and therefore the amount of funds granted is increasing in an upward manner over the same period. The figure shows the lowest value of deposits represented by 22,504 MJOD at the beginning of the period in 2010, accompanied by the same year, the lowest value of funds granted with a value of 14,451 MJOD.

With the continuation of the upward trend over the years, we notice that the amount of deposits is increasing and is accompanied by an increase in the amount of funds granted. The amount of deposits at the end of the period in 2020 reached 36,789 MJOD which is the highest value during the period. On the other hand, the amount of loans granted will rise to its highest value in the same year 2020 to reach 28,634 MJOD.

Researcher concludes from the figure that the nature of the relationship between deposits and credit facilities is a positive relationship and that deposits maintain an upward increase with the passage of years, accompanied by an upward increase in the volume of granted funds.

6   Recommendations

The researcher recommends conducting a related study to find out the extent of the impact of monetary policies adopted during the pandemic on the economy in the long run, to know the impact of the process of pumping money through lending with interest.

Also, the researcher recommends the possibility of studying the application of a government subscription with the private sector represented by banks providing credit facilities for import and export projects to finance import and export projects in the form of interest-free loans or profits for the beneficiaries. The profit for the banks is obtained from the government retroactively as a percentage of the taxes paid by the beneficiaries, which encourages the import and export process and affects in its role the movement of funds and increase the possibility of credit financing and encourages investment by dispensing the government from part of the tax in favor of banks as a profit on granting loans. As a result, Banks that give loans will be able to operate a greater part of the deposits, so the process of pumping money into the market will face subsequent economic crises without burdening society with the interest earned.

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Impact of Covid19 on the Government Budget Deficit

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Abstract. The study aims to examine the effect of the Corona pandemic (COVID19) on the government general budget deficit, using econometrics models for this purpose, by using yearly panel data from 2019 to 2021 for 38 countries; this study applied pooled regression, fixed effects, and random effects to examine the relationships between variables. According to the Hausman test and the redundant fixed effects, the fixed effects model was the best suitable, and there is no serial correlation problem, multicollinearity problem, and Heteroscedasticity problem. The study results indicated that COVID19 has a positive and significant effect on the government general budget deficit among the sample countries over the period under consideration. The increase in Covid19 yearly cases by 10% led to an increase in budget deficit a percentage of GDP by 0.2% .

Keywords: COVID19 · Government budget deficit · Panel data

1 Introduction

One of the most important problems facing countries is the budget deficit, described by a growth in public expenditures more than public revenues [1]. For many causes, the most important of which is the increase in expenditures due to population growth, increase in military expenditure, increase in civil service expenses, and decline in public revenues consequential from weak management organization, weak tax capacity, Weak economic growth, low levels of income, and financial and administrative corruption [2]. Furthermore, sometimes an increase in the fiscal deficit can improve economic growth by offering more money to individuals who can then consume and invest further. Long-term deficits, however, can be detrimental to economic growth and stability.

For more than two years, the world has been facing a common threat represented by the Corona pandemic, which constitutes a major global economic, financial, and social crisis, and many countries have been affected by it, especially the third world countries, by this crisis and its repercussions, which had a negatively impact the public budget in it. At the same time, the pandemic showed the weakness of many points, weakness in the global economy, where this epidemic isolated peoples from each other, the occurrence of many injuries' deaths, and the delay in revealing treatment for them. Therefore, the

problem of this study lies in answering the following question: Is there an impact of the Corona pandemic on the public budget?

Government finance numbers for 2020 & 2021 illustrate countries' double budget deficit. The countries where the economy is mostly dependent on a single industrial good, service, or export goods performed worst and most vulnerable to the epidemic. Also, the huge growth in its budget deficit was mostly due to dependence on external tourism, which continued constrained for the largest part of 2020 as global travel block and homeland lockdowns developed the norm in wealthy countries. Presently, the global economy's performance has been negatively affected due to the repercussions resulting from the Covid19, which led to a global economic recession and put pressure on the growth rates of the economies. Furthermore, the continuous increase in the number of injuries globally and the number of deaths negatively affected the public budgets of countries, including Jordan, which recorded a contraction of GDP and a continuous increase in the number of injuries and deaths.

Based on the importance of the topic, this study examines the impact of the Corona pandemic on the budget deficit during the pandemic period.

2 Literature Review

After the emergence of the Keynesian theory, which provided a new view of rebalancing the capitalist economy and considered it more important than the financial balance, which means they need to expand state expenditures beyond its revenues, deficit financing became prevalent in most countries [3]. After that, the concept of budget deficit began to appear with the spread of the inflation phenomenon in the seventies, when criticisms began on the Keynesian theory by the modern currents of the neoclassical school and its pioneers, Friedman and Hale, who recommended the need to liberate the market, capital, and the economy from any restrictions, the budget deficit gradually through reducing public spending [4].

Many studies have dealt with the impact of COVID-19 due to its great influence on the world's economies; as well as these studies as Sabbagh and Fateh (2020) [5] identified the impact of the spread of the coronavirus on the global economy. and found the effects of this COVID19 are the worst and most influential compared to preceding previous crises. Nafez, Al-Harash (2020) [6] confirmed the effects of COVID-19 on international markets through stock markets, and international commodity markets. the result shows there is a statistically significant relationship between the COVID-19 and global stock markets, and international commodity prices. Khadija and Talha (2021) [7] analyzed the effects of the COVID-19 on the most critical indicators of the global economy's performance and foreseen its most important implications in the short and medium-term. The study concluded that the COVID-19 is the latest health crisis that has resulted in a global economic crisis that has a severe impact on all countries' economies through the impact of all major economic sectors. also, Khemgani and Samia (2020) [8] contributed to the analysis of the Covid19 impact on the indicators of Arab financial markets during (2019–2020); the study showed a negative impact of the Covid19 on Arab financial market indicators.

Kashida,Fadela (2020) [9] investigated the impact of the COVID-19 in China on financial market indices through the Shanghai Composite Index for Shanghai Stock

Exchanges, the study conclusion that the financial markets respond adversely to the growth in the number of confirmed cases of the virus. also, Gharbi and Issa (2020) [10] showed the impact of COVID-19 on Arab financial markets, and the standard study showed a significant decrease in the EGX30 index, while before it was almost stable. also, the great and sharp shock experienced by the Cairo Stock Exchange led to the delay of trading many times.

Ghaboli Ahmed and Taher (2021) [11] identified track of the most valuable effects on the worldwide economy across an analytical article of the particularly important indicators of the global economy's performance. The article assumed that the effects of the COVID-19 were extremely dangerous in the short term due to a decline in international industrial growth due to the interruption of direct supplies, infection in supply chains, and total demand disturbances. Moreover, the services sector was affected by the decline in global trade development, tourism, and oil prices.

Belmashri and Ali (2021) [12] aimed to analyze and measure the effect of COVID19 on global and Arab financial market indices; the study showed a negative impact of the virus on the American Stock Exchange S&P50 index, to a high degree compared to its weak negative impact on the Egyptian Stock Exchange EGX30 index. Kanu (2021) [13] is concerned with the economic consequences of the COVID19 pandemic on the Nigerian economy. This piece observed that this virus is affecting the Nigerian economy through loss of jobs and other incomes, gradual recession, and deterioration of financial and corporate sectors of the nation. It discovered that specific policy instruments must be administered for the economy's recovery, including health and social protection, fiscal policy, and financial, industrial, and trade policies. Enrique Alberola et al. (2021) [14] showed the fiscal response to the COVID19 crisis in advanced and emerging market economies; This study focuses on the drivers of this divergent fiscal response in the first months of the pandemic; it found the size and composition of the fiscal response also depended on some structural factors, such as the level of income, the strength of the social safety nets and automatic stabilizers. Loana-laura (2021) [15], Identified the impact of the COVID19 pandemic on the tax revenues in the EU, the study showed a decline in tax revenues in 2020 and 2021, followed by a slight recovery in 2022 for most EU members.

What distinguishes this study from previous studies? First, the current study differs from previous studies in terms of the use of new variables represented in the gross domestic product, the number of injuries in Covid19 as independent variables, the budget deficit as a dependent variable, and this is what the previous studies did not consider and the use of new methodology to know the impact of the Covid19 pandemic on the budget deficit. Therefore, this study is considered one of the new studies regarding its method and methodology.

3   Methodology and Data

3.1   Methodology

In building the econometric model, we track the literature explained in the preceding part and analysis by using panel data models. The model used in this paper assumes all cross-sectional data have been homogenous. It considers slope coefficients with time

and cross-sectional invarint and separate constant intercept. The equation applied for the pooled OLS model on the influence of Covid19 on the government budget deficit with the Gross Domestic Product per capita at constant prices as a control variable:

$$pd_{it} = \beta_0 pd_{it-1} + \beta_1 cor\_cas_{it} + \beta_2 rgdp\_per_{it} + v_i + \varepsilon_{it} \tag{1}$$

where pd: Cyclically adjusted budget deficit as a percentage of GDP, gdp_per: Gross domestic product per capita at constant prices, cor_cas: Covid19 yearly cases, β: parameters, t: time, i: country, v & ε: random error. All variables used in logarithm term. The reason for selecting real GDP per capita is to record the varying level of economic development among the countries.

In the current study, we used the Houseman test to infer the best model, whether it was a fixed effect or a random effect. The advantage of using a fixed effect estimator in this situation is consistency, even when the estimator is correlated with individual effects. If the probability of the Hausman test statistic is small ($p < 0.05$), we can reject the null hypothesis that the random-effects model is consistent and use the fixed-effects model. Nevertheless, the high probability of the Houseman statistic suggests that the random-effects model is a better fit.

3.2   Data

For analysis, we used annual data for (2019–2021) to create a balanced panel of annual variables for 38 countries. We obtained data from the IMF world economic outlook (WEB) October 2021 database, and our world data initial point where all the countries are included in the WEO database. However, we removed some of the countries from the original sample due to the lack of adequate data offered in other databases and a deficit in his government budget.

Table 1 shows the descriptive analysis. The average fiscal deficit of the sample countries amounted to −4.7% of real gross domestic product, with a maximum deficit of 2.9% RGDP and a minimum of −12.1%. In the case of reported cases, covid 19 recorded an average of 1,572,000 cases, a maximum of about 34,588,000 cases, and a minimum of 1.82 million cases. As a result, at a fixed price, GDP per capita averaged $32,255 for the countries included in the sample, with a minimum of $92,388 and a maximum of $34,588,019. The data have positively skewed (when skewness > zero), and the Kurtosis shows a platykurtic (if kurtosis < 3) in Cyclically adjusted budget deficit as a percentage of GDP and leptokurtic (if kurtosis > 3) in Gross domestic product per capita at constant prices and Covid 19 yearly cases.

Where: PD: Cyclically adjusted budget deficit as a percentage of GDP, GDP_PER: Gross domestic product per capita at constant prices, COR_CAS: Covid19 yearly cases.

Many countries have been left with large negative fiscal balances due to the impact of coronavirus disease (COVID19). A fiscal imbalance occurs when a government spends more money than it takes in through tax and other revenues. The number of confirmed cases reported as COVID19, and it appears that consensus has formed in effect as the number of confirmed cases increases on the budget deficit of the governments.

As a result of the growth in the number of confirmed COVID19 cases, the government has increased medical expenses to support the growth of medical services, government

Table 1. Descriptive analysis

	BD	COR_CAS	GDP_PER
Mean	4.7	1572383	32255
Median	4.9	182872	30992
Maximum	−2.9	34588019	92388
Minimum	12.1	0.00	5709
Std. dev	2.9	4414296	19228
Skewness	0.1	5.3	0.5
Kurtosis	2.9	34.0	3.0

design of economic stimulus programs, a big drop in government revenue as industry and commerce reduced. The consequences of lockdown caused by the country in response to restrictions on the spread of COVID19 virus, economic stagnation, and low growth.

4 Empirical Results

In this section, we discuss the empirical results obtained using implementing a balanced panel.

4.1 Correlated Random Effects - Hausman Test

The fixed-effect model assumed that the independent variables have a constant relationship with the dependent variable within all observations. in distinction, the random-effects model assumes these fixed effects may vary from one observation to another. And the test is whether the effect is random or fixed, a Hausman test is used. The null hypothesis in the test is that the preferred model is random effects. The tests look to find out if there is a correlation between the regressors and errors term in the model. The null hypothesis is that there is no correlation between the two errors term (Ketokivi, et al. 2021) [16].

This study has tried to find the determinants of Covid-19 on the Government budget deficit by applying a panel data model. For the present analysis, Fixed and random effect models are applied, and finally, the Hausman test is applied to conclude which model is the best fit for the current study from the two approaches. The estimates of fixed and random effects were indicated in Table 2. Shows The $\chi 2$ probability is less than 5%; therefore, we accept the alternative hypothesis fixed effects model is more fitting, this means that the fixed effects model is determinant of the Impact of Covid-19 on the Government budget deficit.

Table 2. Hausman test for model specification (Random vs. Fixed)

Test summary	Chi-sq. statistic	Prob.	Results
Cross-section random	30.653421	0.0000	Fxed
Period random	45.904941	0.0000	Fixed

4.2   The Redundant Fixed Effects Likelihood Ratio and the F-Test

Getting concluded that the fixed effect model is suitable, then it is important to evaluate if pooled cross-sectional and fixed effects together are certainly affecting our analysis outcomes by utilizing the likelihood ratio test and F-test for redundant fixed effects. therefore, a preference among the fixed effect model and the pooled OLS model will be formed. Many econometric practices are therefore assumed to make this assumption. The F-Test is one of the methods that Maintains the joint significance of all variables considered (Georgescu, et al., 2022) [17]. From Table 3 since the χ^2 probability is less than 5%; and the F test probability is less than 5%; we accept the alternative hypothesis fixed effects model is more fitting, which means that the fixed effects model is determinant of the Impact of Covid-19 on the Government budget deficit.

Table 3. The redundant fixed effect test

	Statistic	d.f	Prob.
Cross-section F	2.31	(37,74)	0.0011
Cross-section χ^2	87.51	37	0.0000

4.3   Estimation Results

The model was estimated using three methods to examine the effect of the Corona pandemic (COVID19) on the government's general budget deficit: fixed effects, random effect, and multiple regression. As indicated, the fixed effect is the fittest for the study model. The equation of the fixed-effect model explains that all variables have expected signs. Corresponding to Table 4, all variables using fixed-effect are significant at 1% level in determining the impact of Covid-19 on the government budget deficit and positively. The increase in Covid19 yearly cases by 10% leads to an increase in budget deficit as a percentage of GDP by 0.2%. This result is reflected rational considering the government's many adoptive measures to fight the developing epidemic of the Coronavirus.

On the other hand, many amounts have been disbursed to the health sector, compensating those affected by the economic sectors and conducting programs to support economic growth, which has decreased significantly because of the pandemic. Recovering from the pandemic shows an opportunity to realign economic growth, make it environmentally friendly and be more focused on the needs of people; this includes clean energy and transportation and social investment in health, education, and employment.

Table 4. Model estimation results

Dependent variable	Budget deficit as a percentage of GDP		
Variables	Fixed effect	Random effect	Pooled
Log (COR_CAS)	0.02 (0.000306) ***	0.02 (0.00024) ***	0.018 (0.0043) ***
Log (GDP_PER)	0.696 (0.235) ***	-0.140 (0.268)	-0.04 (0.085)
c	−5.55 (2.397) **	2.88 (2.70)	1.88 (0.854) **
R-Squared	0.71	0.45	0.58
Adjusted R-Squared	0.55	0.44	0.57

Where: PD: Cyclically adjusted budget deficit as a percentage of GDP, GDP_PER: Gross domestic product per capita at constant prices, COR_CAS: Covid19 yearly cases. * Significant at 10% level, ** significant at 5% level, *** significant at 1% level.

4.4 Diagnostic Tests

4.4.1 Residual Cross-Section Dependence Test

Panel data model disturbances are thought to be cross-sectionally independent, especially when the cross-section size (N) is significant. In panel regression contexts, however, there is much evidence that cross-sectional dependence is common. Ignoring cross-sectional dependency in estimates can have significant effects, leading to lower estimator efficiency and wrong test. A test to determine the residual dependence of the panel cross-section in the model under consideration. Table 5 below shows the rejection of the null hypothesis that there is a dependence of the panel cross-sections because all p-values for the various tests are less than 0.05. Therefore, we reject the null hypothesis.

Table 5. Residual cross-section dependence test

Test	Statistic	Prob
Pesaran scaled LM	15.87354	0.0000
Bias-corrected scaled LM	6.373545	0.0000
Pesaran CD	1.178465	0.2386

4.4.2   Variance Inflation Factors

Variance inflation factor (VIF) measures the amount of multicollinearity in a set of multiple regression variables. Table 6 indicates no multicollinearity in the model when the VIF value is less than 10%.

Table 6. Variance inflation factors

	Coefficient	Uncentered
Variable	Variance	VIF
GDP_PER	547263.4	5.462867
COR_CAS	1.77E-07	1.318166
C	15390571	4.831994

4.4.3   Heteroskedasticity Test: Breusch-Pagan-Godfrey

To evaluate the heteroscedasticity of errors in regression, we used Breusch-Pagan-Godfrey Test. Table 7 indicates there is no heteroscedasticity in the model when the p-value is more than 10%. Therefore, reject the null hypothesis that there is heteroscedasticity in error.

Table 7. Heteroskedasticity test: Breusch-Pagan-Godfrey

F-statistic	0.205123	Prob. F(2,111)	0.8149
Obs*R-squared	0.419782	Prob. Chi-square (2)	0.8107
Scaled explained SS	0.516244	Prob. Chi-square (2)	0.7725

5   Conclusion

The COVID-19 pandemic is one of the world's most complex challenges, especially in the short run. This study relied on econometrics models pooled regression, random-effects, and fixed-effects models by using panel data to analyze the relationships between its variables. According to the Hausman test and the redundant fixed effects, the fixed effects model was the most suitable, and there is no serial correlation problem, multicollinearity problem, and Heteroscedasticity problem. The study results indicated that COVID19 has a positive and significant influence on the government general budget deficit among the sample countries over the period under consideration. The increase in Covid19 yearly cases by 10% leads to an increase in budget deficit a percentage of GDP by 0.2%.

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The Response of Islamic Banks Face the Covid-19 Pandemic and the Role of Financial Technology

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Abstract. The Covid-19 pandemic is not yet over, and its impact has affected global economic and financial sectors. This represents a challenge for Islamic finance considered as an alternative finance especially after the advent of the 2009 global financial crisis. Islamic finance certainly has an important market share in crowdfunding and also in microfinance, and its role in the financing of SMEs all over the world is not negligible, and this financial crisis should therefore pose different challenges to Islamic finance. It requires a set of instruments specific to its category, and also needs new technologies (FinTech), strategies and financial services to cope with the possible phenomenon. Our work seeks to present how Islamic finance, with its specific financing instruments, can fight against the disastrous effects of this health crisis, in particular the instruments of Zakat, funding by Qardh-Al-Hassan and fundraising like the Sukuks and finally the importance of using a set of technologies, called Fintech, to build an alternative and sustainable financial system after Covid-19. Indeed, this health crisis should present different challenges to Islamic finance, which requires FinTech, in its new strategies and its financial services. Our Paper is structured as following, we start with a review of the literature, in a second part we present the covid-19 crisis and Islamic finance, the roles of Islamic products in the face of covid-19, and in a last part, the role of artificial intelligence in islamic finance.

Keywords: Covid-19 · Islamic finance · Alternative funding · Islamic banks · Fintech

1 Introduction

The Covid-19 pandemic is an unprecedented global shock involving supply and demand disruptions in an interconnected global economy. Indeed, infections have reduced labor supply and productivity, and lockdowns, business closures and social distancing have resulted in supply disruptions, and layoffs and loss of income as well. that the deteriorating economic outlook has reduced household consumption and business investment. Beyond its obvious impact on human health and safety, the spread of COVID-19 has thus generated an unprecedented social, political and economic impact. A series of measures taken by governments to prevent the spread of the virus shows that a global economic

recession is inevitable, and economies must prepare for one of the worst crises they have experienced since the Great Depression of the 1930s, Rhee (2020). The first studies and analyzes, however, on the economic impact of the epidemic suggest a decrease in GDP ranging from 3 to 6% depending on the country and the evolution of the spread of the virus in the world; Fernandes (2020). The economic and financial situation of all countries has been seriously affected by the spread of the Covid-19 crisis. Global financial and regulatory authorities have put in place several preventive measures and actions to deal with this crisis. The financial and banking sector was one of the sectors most affected by the health crisis, and mainly, the classic and Islamic banks which were heavily affected; Atif et al. (2021).

The main objective of this work is to determine whether certain specific Islamic financial products can constitute a solution in times of crisis. Our contribution is to focus on certain islmaqieu financing instruments and their role to revive and exit the recession, by offering adequate financing tools. And we also talked about new innovations in artificial intelligence and fintech and their growth following the covid-19 crisis. Our work will be organized as follows: first, we will focus on the harmful effects of the Covid-19 health crisis, the impact on the economic and financial situation. Second, we will try to present the impact of the health crisis on Islamic financial instruments, and at the end we will take a closer look at the different fintech instruments that have emerged and are considered as a solution to get out of this health crisis.

2 Literature Review

The Covid-19 health crisis once again shows the dysfunctions of conventional finance based on profit maximization, and highlights the need to turn to more ethical finance capable of helping those in need. Islamic finance has certain tools like Qardh-AlHasan, Sadaqa and Zakat which allow liquidity to be injected quickly into the market; Haider et al. (2020). Currently the whole world is suffering from the covid19 pandemic with its new variants, and several researchers are trying to see and design new steps to follow and new methods to adopt to put the world economy back on the right track; thus researchers are trying to demonstrate the importance of Islamic finance in overcoming this crisis and the role that FinTech can play in achieving this goal, Hassan and Al (2021). The fundamental principles of Islamic finance such as the prohibition of the "Riba" interest rate and the prohibition of products resulting from conventional financial engineering (options, swaps and toxic assets…), allow Islamic banks to protect oneself from crises, and to better resist the 2008 financial crisis; Bendiab (2018), but the current Covid-19 health crisis is completely different. And Islamic finance has many assets that will allow it to contribute significantly to the recovery of economic activity gradually, indeed, this type of finance is based solely on real activity, and on the principle of profit and loss sharing, considering money only as a medium of exchange; Bureshaid et al. (2021), Haider et al. (2020). Social financial instruments offered by Islamic finance like Quardh-Al-Hasan, Zakat, Social Sukuk and Waqf can be used during the Covid-19 crisis, to assist and help companies in difficulty Mohamed et al. (2021). In times of crisis, the principle of social justice and the equitable distribution of income are very important; Smolo and Mirakhor (2010) and these principles are the basic principles of Islamic finance. With

the health crisis we have financial markets in distress, factories, restaurants and hotels, and stores closed, with a considerable slowdown in transport and international travel activities, the COVID-19 health crisis has hit the global economy hard, and the spread of the coronavirus has created both a supply shock and a demand shock.

And this situation has generated a real and growing risk of recession; Guterres (2020). Global financial authorities like the IMF are aware of the severity of the global economic recession caused by the coronavirus; Iqbal and Shafig (2015). The scenario remains pessimistic, the economy could fall by 8% globally this year, and nearly 5% in emerging and developing economies, while the global recovery is limited to just over 1% in 2021; World Bank (2020). And the outlook for global growth in 2021 will not be good; Iqbal and Shafig (2015). Nevertheless, in a world where finance is globalized, we know that financial shocks contribute to cyclical fluctuations which can generate financial crises which can in turn have negative repercussions on the banking system: solvency crises with defaults on corporate and household debts. To counteract the negative effects of the crisis, the major central banks of the G20 countries have announced major monetary support measures. The US Federal Reserve and the European Central Bank have opted for a cut in key rates, massive asset and sovereign debt redemptions to support the bond market and avoid a growth in risk premiums on the debt of the most weakened states by crisis; Thorsten (2020). Baldwin and Tomiura (2020) believe that the Covid-19 pandemic would exert both health and economic contagion effects; they also note that this virus constitutes a supply and demand shock, affecting international trade in goods and services. According to the IMF (2020), in its report on the Covid-19 health crisis in Africa, found that the health crisis is accompanied by an economic crisis and this involves decreases in production and demand, significant drop in commodity prices, especially oil, which have fallen by around 50% since the start of 2020.

The world economy is now facing an economic shock, the nature of which needs to be analyzed to find appropriate measures. These practices have led to a recession of the planetary economy, a disruption in the global production chain which has generated speculation in the financial markets, a decrease in foreign exchange reserves, a deterioration in the value of goods, a decrease in foreign trade and an instability and depreciation of the currency. According to Claudiu (2020) the Covid-19 shock is as much monetary as financial, in fact, the Covid-19 pandemic creates fear and uncertainty, affecting the global economy and thus amplifying the volatility of financial markets. The recession induced by the Covid-19 pandemic will cause solvency problems for some businesses and households and will put pressure on banks' balance sheets, causing growth in the share of non-performing loans and thus causing bank failures; Thorsten (2020).

3 Islamic Finance COVID-19 Crisis

The global pandemic (COVID-19) has crippled the global economy, putting companies and people in a difficult situation. Oxfam (2020) found that stopping economic activities has caused more than 500 million people in poverty. According to Haider et al. (2020), the only way that can save economies is where the rich and governments around the world come together and join forces to help poor governments. With the same principle of solidarity, Islamic finance, already with some of its financial instruments, can provide

support to the community. This happens through its religious instruments like Zakat and Sadaqa and non-profit contracts aimed at bringing aid to the needy.

3.1 Islamic Finance Tools Used in Covid19 Crisis Period

3.1.1 Zakat

Zakat is one of the five pillars of Islam, which consists of paying the poor 2.5% of assets owned for a year. The Koran has clearly defined the eligible beneficiaries of Zakât. These include the poor, needy, to those who are heavily in debt, and travelers in distress. There is thus a general consensus that the main objective of zakat is the eradication of poverty, that is to say that it is addressed primarily to the needy and the poor; Hassan and Ashraf (2010). This good practice makes it possible to fight against income inequality and to bring a certain socio-economic justice in society in order to fight poverty. Zakt is therefore well regarded as short-term emergency assistance for those most affected by the Covid-19 crisis. With the current pandemic, the poor and workers operating in the informal sector urgently need funds to enable them to meet their basic needs. Zakat can be set up as a dedicated fund for dealing with COVID-19 with a goal of helping people and even SMEs that have been shut down due to this pandemic. By making these instruments of Islamic banks institutional, the authorities can take advantage of these significant funds that can be deployed in the fight against the adverse effects of this health crisis. Moreover, the reach of Zakat remains limited to some categories fixed by religion, while other people, who are not eligible for this alms, also need help in this period. We can cite as an example the managers who have contracted micro credits and have suffered very serious economic consequences.

3.1.2 Qard Al-Hassan

Qard Al-Hassan refers to the interest-free loan. It is a mechanism that is part of the aid tools and means of mutual aid accessible to all categories of people who need help in this period of crisis and who do not necessarily fall into the category of people benefiting from the Zakat, it can be seen as a short-term rescue fund allowing clients of Islamic financial institutions to raise funds quickly and at zero cost; Afkar (2017). The Al Qard Al-Hassan loan, unlike the previous instrument Zakat, can be granted to anyone, regardless of their situation, rich or poor. And this specificity of versatility makes the use of this financial instrument greater than that of other instruments such as Zakat. Thus, entrepreneurs who have suffered the devastating effects of the health crisis can use this fundraising tool to relaunch their activities. Widiyanto et al. (2011) conducted a study on this instrument and proved the effectiveness of Al Qard Al-Hassan in strengthening the economic activities of the poor and needy. According to Iqbal and Shafiq (2015) This mechanism can be used to help poor entrepreneurs to restore their business which is suffering from this crisis. And this Islamic financial tool is used effectively, it will become an excellent means of supporting growth in times of crisis. Unfortunately in practice, this instrument is largely ignored by Islamic banks because of its non-profit nature, but its commercialization and usefulness in times of crisis is one of the strengths of Islamic finance that can help entrepreneurs restore their previous position as quickly as possible. This instrument of support for entrepreneurs is limited to the period of the

COVID-19 health crisis, while the integration of Al Qard Al-Hassan in the portfolio of Islamic financial institutions could provide invaluable help during the support of actors economic in the event of crises specific to companies or particular sectors Brgchou and Hamimida (2021).

3.1.3 Sukuks

Are the newest Islamic finance products. The Sukuk have been the subject of several recent research including that of Ogunbado (2019) which has focused on this Islamic financial instrument and its interests in financing the development of basic infrastructure. Sukuks in general have been used to finance large state projects like building roads or dams. But it was in 2014 that the first Sukuk were intended to promote vaccination (Vaccine Sukuk), this initiative was favorably received by the markets, and several global financial institutions appreciated this type of financing and recognized the impact. positive of this sukuk market. Following this and the success of this financing operation, the World Bank and the International Finance Facility for Immunization, jointly decided to reiterate the issuance of this type of Sukuk in 2015. According to the International Financial Facility for Vaccination, the two fundraising operations in 2014 and 2015 encouraged the launch of the third fundraising operation in 2019 with the issuance of "Vaccine Sukuk" and this in collaboration with the Group of the Islamic Development Bank (ISBD). Noordin et al. (2018), and Badeeu et al. (2019) have shown through the study that the issuance of sukuk is a viable financing instrument for health care providers to develop the health sector. However, researchers associate the use of Islamic financial instruments in financing public health with the existence of political will, government support and an appropriate Islamic financial ecosystem. These fundraising experiences thanks to sukuk can be an encouraging source for authorities and governments wishing to revive their key sectors weakened by the Covid-19 crisis, namely: the health sector, education as well as the economic and financial sector. Abdullah and Keshminder, (2020).

3.2 The Role of Islamic FinTech During the Covid19 Period

The word fintech is the abbreviation of two terms namely "finance and technology. It is a sector resulting from the use of digital platforms and artificial intelligence in financial services, as opposed to traditional financial services based on direct contact; Lacasse et al. (2016). FinTech is seen as an industry that uses new digital technologies to provide innovative solutions to improve financial services Razzaque et al. (2020). Thus new financial technologies have contributed to the establishment of new business models. These innovations in the banking sector have affected payment systems, and also financial regulation. And in recent years, the evolution of technological innovations has grown tremendously. These latest technological innovations have affected all banking activities in the front office and in the back office, the operations of collection, disbursement, borrowing, the risk management department, and even the financial advice of clients have been robotic. Fintech has turned the world of finance upside down with its technological innovations. The use of blockchain and artificial intelligence has already

revolutionized the world of finance; Hasan and Hassan (2020). Currently finance is facilitated by the process of technological innovations where financial services are provided through artificial intelligence, and robots that have replaced financial advisers; Khan and Rabbani (2020a; 2020b). Along the same lines, Using Fintech in the delivery of Islamic services such as Waqf, Crowdfunding and Zakat… will make financial services to clients easy, transparent and efficient; Todorof (2018). Currently, the COVID-19 pandemic has affected all countries and has had a devastating impact on the global economy. And this leads to drawing attention to the potential of Islamic finance and the solutions it can provide in times of crisis. Thus we observed an acceleration of the digital transformation process, already underway before the covid-19 pandemic. Islamic finance and its instruments is open to all innovations as long as it does not violate the principles of Sharia law. Islamic fintech companies will thus offer better Islamic financial services, saving time and at a lower cost; Rabbani and Khan (2020a; 2020b). With the first months of the pandemic, the number of fintech users increased dramatically in the first months of 2020; Fu and Mishra (2020). Islamic Fintech will play a very important role in promoting the Islamic finance sector, since Islamic Fintech is flexible, attractive, efficient and leads to financial inclusion and innovation (Rabbani et al. 2020a; 2020b). The success of Islamic finance and the role it will play in the post-Covid-19 period will be primarily determined by the use and adoption of Fintech over the next two months; Haider (2020). Fintech and the transformation of its financial services by Islamic banks will follow the great behavioral changes of people and society, thus the confinement of people, and the imposed distancing will impact people even after the pandemic; Wijayanti and Pradipta (2017). The period of health crisis has lasted, and this has led people to use fintech-based payments such as card payment, online, through apps instead of cash. This method of payment without going out, and without using cash is convenient and very efficient. Fintech companies have offered Islamic banks new products and services, which present new challenges. Indeed, replacing traditional products, services and business models with more efficient digital technologies is not so easy Khan et al. (2021). The use of fintech through blockchain technology, big data and machine learning in Islamic finance will certainly bring more efficiency and transparency for clients and also for regulators of Islamic Financial Institutions; Sun et al. (2020); Rabbani (2020a; 2020b). And thus we can say that the Covid-19 crisis presented an opportunity for Islamic FinTech to develop and provide an alternative financial system. Islamic FinTech will provide practical, innovative financial services while respecting the basic principles of Sharia law, and therefore ensure financial and banking services accessible to all and also participate in poverty reduction; Vasenska et al. (2021).

3.2.1   Islamic Fintech: New Financial Products

The covid-19 health crisis has engendered an economic crisis, pushing companies to many challenges at different levels: a level of logistics, transforming workplaces and transforming the supply chain, and this has impacted corporate finances and cash flow. These changes will push for the creation of new solutions and new opportunities to improve the performance of Islamic Financial Institutions, and this by offering new innovative financial services based on FinTech.

3.2.1.1 The Islamic Crowdfunding

Islamic crowdfunding can be defined as a combination of crowdfunding and the financial technology of crowdfunding with Islamic financial contracts. More and more start-ups offer financial products in accordance with Islamic law through platforms through which any user finances the project of a new business (Start up) or even of an existing business through loans or donations Alazemi and Al Omari (2020). Based on new communication technologies, collaborative and participatory financing makes it possible to overcome the main challenges of entrepreneurs. Indeed, depending on the context, a crowdfunding platform can be qualified as "Islamic", "participatory" if it respects the rules established by the Shari'ah namely sharing and loss and profit, the elimination of the interest rate on loans, speculation and the non-involvement of prohibited industries in transactions such as the sale of alcohol, pork etc..... The transactions of the platform must be simply in accordance with the principles of Islamic finance; Hasan et al. (2020). The impact of this social funding can be seen as a complementary source to government funding. The platform acts as an intermediary between entrepreneurs with Shari'ah-compliant ideas and investors who subscribe to these projects. Compared to conventional crowdfunding there are four forms of Shari'ah-compliant platforms; Marzban and Asutay (2014):

– Donation-based crowdfunding platforms: these are platforms that collect sadaqa funds or "zakat" funds intended for social projects or initiatives.
– Platforms based on rewarded donation models: it consists in collecting small amounts which will contribute to the success of projects resulting from the platform, in exchange for rewards to donors, and The reward comes from the funded project.
– Platforms based on equity participation: shareholders invest through Islamic contracts for the financing of projects through the platform.

Platforms based on loan models: lenders grant loans to start-ups or projects in the platform.

These loans are made through "Murabaha" or "Ijara" contracts. Thus A FinTech initiative, through crowdfunding can provide borrowers with an easy, faster, cheaper and affordable way to obtain financing directly from the public. Crowdfunding has become the primary source of funding for rapidly growing startups. It has the potential to become the biggest challenger in the traditional media of finance. Crowdfunding and P2P loans will undoubtedly be the future of financing. EthisCrowd is an Islamic crowdfunding platform investing in entrepreneurial, commercial and real estate activities in emerging Asia. Based in Singapore, with a presence in Indonesia, Malaysia and Australia, the company finances the construction of affordable and commercial housing, primarily in Indonesia, through private and institutional investors, as well as Islamic banks. PayZakat is the newest Islamic fintech platform that uses artificial intelligence (AI)-based chatbots and entirely new digital tools to help users make payments from Zakat (a mandatory wealth tax), Sadaqah (a payment from alms not compulsory) and other charitable payments. User can select a country and a specific charity in that country to help.

3.2.1.2 Smarts Contracts

Smart contracts are used to facilitate the transfer of digital assets on the basis of previously agreed terms and conditions. One of the fundamental goals of Islamic finance is to bring transparency and efficiency in its transactions and smart contracts help to achieve this goal. The digital smart contract is definitely the future of finance and it will replace the traditional paper contract because it helps bring more reliability and transparency without endangering its legitimacy; Rahim (2018). Islamic smart banking: The smart world is very often used today for smart cities, smart phones and smart banking. Smartness is fundamentally achieved by adopting innovative technologies such as automation, cloud IoT, etc. Smart Banking means a smarter, technology-based approach to customer service in the provision of financial services. Smart Banking is a new concept of Islamic banking where customer engagement and satisfaction is taken to another level. Example: Qitmeer is the first new generation Islamic banking platform based on BlockDAG, which will serve the clients of Islamic banks for ethical investments according to the Quran and Sunnah; Rabbani (2020a; 2020b).

3.2.1.3 Islamic Crypto-Currency

The blockchain is the decentralized distributed ledger for recording the financial transaction. Blockchain technology can be applied in financial services such as Zakat, Qardh-Al-Hasan, P2p and Mudharaba loans, etc., and also for the creation of a new Islamic virtual currency. Blockchain technology will bring more transparency and efficiency; Khan (2020). A cryptocurrency is a digital asset based and secured by blockchain cryptography technology. At present, and given the expansion of virtual currencies in the financial world, a large number of Muslim investors wish to invest in Bitcoin but are reluctant due to respect for Sharia law. They must therefore be able to invest in a less volatile Islamic cryptocurrency; Baker et al. (2020). It is possible to issue Islamic cryptocurrency if the volatility issue is resolved; Alzubaidi (2017). Thus the creation of an Islamic cryptocurrency can be a popular Islamic finance tool during and after the health crisis to attract new investors and mobilize resources. Indeed, there are cryptocurrencies that are backed by gold and this is Sharia compliant. And already some virtual currencies already exist like Monnaie X8, OneGram…

3.2.2   Artificial Intelligence and Islamic Finance

Artificial intelligence, along with blockchain, is one of the technologies enabling banking and finance professions to accelerate their digital transformation; the banking and financial sectors can be proud of being among the most advanced in the use of machine learning technologies. Between current new laws, security threats from fraud and increasing consumer pressure for better customer service, traditional banking practices quickly became obsolete.

To develop, Artificial intelligence is based on two main pillars: the progress made in machine learning, which is mainly based on the selection of the most relevant data, and the development of IT and technological tools which are its vectors Khan and Rabbani (2020a; 2020b). Machine learning consists in providing computer systems with means comparable to those of human beings, such as reasoning, learning and self-improvement, without pre-programming the machine. To this end, machine learning programs analyze a large amount of data, from which they identify human trends and behaviors; they offer an answer to the growing data challenge, which has continued to grow. To meet these challenges, banks have turned to digital transformation to maintain their competitive advantage on all fronts, with early adopters being the most rewarded. Analysts and experts estimate that artificial intelligence will save the banking industry around $ 1 trillion by 2030. The role of artificial intelligence is becoming increasingly important in the study of banking and finance. Banks and financial services organizations use robotic advisory services to provide financial services to clients. This will change the experience of financial services, Robotics advisory services for Islamic banks include Chatbot for financial advice and Zakat calculation; Khan and Rabbani (2020a; 2020b).

4   Conclusion

For about half a century, several crises of different kinds have followed one another: financial, economic and health crises (2008 subprime crisis, 2009 global financial crisis, Ebola, SARS, H1N1, etc.), But the scale of this Covid-19 crisis has severely impacted the global economy, affecting jobs, health, businesses and industries. Certainly the banking sector is one of the main players in the transmission of the crisis to all sectors, indeed with the containment and closure of borders, the drop in demand caused by the Covid-19, caused the outbreak of all types of risks, namely solvency risk, since companies were unable to meet their commitments and pay off their bank loans. And to reduce their costs, companies were forced to lay off their employees and workers, which generated a recession. The monetary policies applied by the countries to guard against the crisis, and even the preventive measures were insufficient. And the various financial institutions that will have to take the shocks of this type of crisis into account in their risk management have not been successful. The various monetary and budgetary authorities reacted by injecting liquidity into the financial system and granting targeted loans to various SMEs, households and vulnerable people in order to limit the impact of the crisis on the financial system.

In order to study the role that Islamic finance can play in countering the harmful effects of the current health crisis, We first presented the strengths available to the Islamic financial sector, highlighting some Islamic financial instruments that can help alleviate the adverse effects of this health crisis, and explaining the role of Islamic finance in the period post-covid-19. Indeed we tried to present and reveal that the instruments of Islamic finance can to cope with the economic crisis suffered by the COVID-19 health crisis, and how these instruments can offer solutions and leave the state crisis for companies and individuals.

Islamic finance supports social development by distributing and sharing a portion of excess wealth through the quard al hassan and sukuk who can support economically

distressed communities by providing them with cash flows to encourage consumption. It should be mentioned that the efficiency of Islamic financial instruments in the fight against the harmful effects of the covid-19 crisis, is conditioned by the existence of a strong will of the Islamic banking sector, government support and existence of an appropriate ecosystem. The second aspect evoked in this research work is the use of fintech tools in Islamic finance and how these fintechs can offer solutions during this health crisis. In fact fintech is seen as a fundamental innovation, because the automation of operations and their registration allows to create entirely new products and services more for customers and for companies, it can also create models of urban development oriented. on decentralization and customer data. Islamic fintech can help Islamic finance thrive in the post-covid era. Either through the creation of Islamic crypto currency, or the use of Islamic smart contracts.

As in all research work, our work has limits. In fact, given the novelty of the topic dealt with concerning Islamic finance in the face of the covid-19 crisis, we currently do not have figures on the use of these financial instruments during this health crisis. And we must pay special attention to the importance of adopting fintech in the Islamic financial sector, and take a closer look at the solutions offered during this crisis. We have presented during our research work only theoretical aspects, and we must test them empirically in future research.

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