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Allam Hamdan *Editors*

Impact of Artificial Intelligence, and the Fourth Industrial Revolution on Business Success

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Conference on Business and Technology
(ICBT 2021)

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Editors

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on Business and Technology (ICBT 2021)

 Springer

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Foreword

I am delighted to write this foreword for The International Conference on Business and Technology (ICBT 2021) proceedings. I deeply believe in the role of such a conference and other similar scientific forums in bringing together leading academicians, scholars, and researchers to share their knowledge and new ideas as well as to discuss current developments in the fields of economics, business, and technology. ICBT 2021 provides a valuable window on the implementation of technologies such as artificial intelligence, IoT, and innovation in business development. For two days, a large number of distinguished researchers and guest speakers discussed many contemporary issues in business and technology around the world. It is a great privilege for the College of Business and Economics at Palestine Technical University-Kadoorie, Palestine, to co-publish this book for the sake of promoting excellent and cutting-edge research by scholars from around the globe. I have a strong faith that this book will be of great benefit for many parties, especially those aspiring to develop buoyant strategies that will lead to positive impact on any future endeavors. Finally, I hope that the ICBT'21 continues as a destination for researchers, postgraduate students, and industrial professionals.

Khalid Sweis

Preface

The present business environment has been tumultuous due to the emerging new challenges resulting from innovative development and disruptive technology. Consumer demands for innovative products and services have urged business fraternity to be responsive and resilience in combating those new requirements.

The Fourth Industrial Revolution is characterized by the combination of physical and digital technologies, such as analytics, artificial intelligence, cognitive computing, machine learnings, and the Internet of Things (IoT). This would certainly impact the company's business direction, the future industries, the customers, the employees, and the society at large. The advancing technologies are bringing about social changes and economic development. As such, organizations are required to adapt to the new environment and strengthen their strategies despite the risk and uncertainty in the environment. New business integration strategies must be leveraged to ensure companies continue to sustain.

To anticipate the rapid change, education is set forth to be more innovative in offering the future ready curriculum. As such, education organizations and scholars are expected to be malleable and creative in designing new curriculum that embrace new technologies, integrating strong entrepreneurship values, fostering positive values and socio-emotional skills throughout the curriculum in order to produce quality and competent future human capitals that are ready to serve the future industries.

The integration between technology and business should be well managed so to provide a wide range of high-quality and competitive products and services in societies and countries. Therefore, the objective of this book proceedings is to conduct a review, examine, analysis, and discussion relating to the fields of business and technologies and their opportunities and challenges. We attempt to address a range of topics in the fields of technology, entrepreneurship, business administration, accounting, economics that can contribute to business development in countries, such as learning machines, artificial intelligence, big data, deep learning, game-based learning, management information system, accounting information system, knowledge management, entrepreneurship and social enterprise, corporate social responsibility and sustainability, business policy and strategic management,

international management and organizations, organizational behavior and HRM, operations management and logistics research, controversial issues in management and organizations, turnaround, corporate entrepreneurship, and innovation, legal issues, business ethics, and firm governance, managerial accounting and firm financial affairs, non-traditional research, and creative methodologies.

This book constitutes the refereed proceedings of the International Conference on Business and Technology (ICBT 2021) organized by EuroMid Academy of Business & Technology (EMABT), held in Istanbul, between 06 and 07 November 2021. The ICBT 2021 partners and supporters were: Universiti Malaysia Kelantan–Malaysia; National University of Life and Environmental Sciences of Ukraine–Ukraine; ARCIF Analytics; E-MAREFA–Jordan; Palestine Technical University–Kadoorie, Palestine; and the Palestinian Community Association For Ph.D. Holders in the Public Service, Palestine.

In response to the call for papers for ICBT 2021, 485 papers were submitted for presentation and inclusion in the proceedings of the conference. After a careful blind-refereeing process, 292 papers were selected for inclusion in the conference proceedings from 40 countries. Each of these chapters was evaluated through an editorial board, and each chapter was passed through a double-blind peer-review process.

These chapters are reflecting quality research contributing theoretical and practical implications, for those who wise to apply the technology within any business sector. It is our hope that the contribution of this book will be of the academic level which even decision-makers in the various economic and executive levels will get to appreciate.

Finally, we express our sincere thanks to the plenary speakers; Prof. Carolyn Strong, Editor in-Chief, Journal of Strategic Marketing from Cardiff University-UK; Prof. Khaled Hussainey, Co-Editor in-Chief, Journal of Financial Reporting and Accounting, from University of Portsmouth-UK; Prof. Timothy Mescon, Executive VP and Chief Officer-Europe, Middle East and Africa at AACSB International AACSB International–USA; Prof. Roselina Ahmad Saufi from Universiti Malaysia Kelantan–Malaysia; Prof. Munira Aminova, Experienced Higher Education management leader with a demonstrated history of working in the research industry, from United Business Institutes-Belgium; Prof. Mohammad Kabir Hassan, Editor in-Chief, International Journal of Islamic and Middle Eastern Finance and Management, University of New Orleans-USA; and Prof. Derar Eleyan, President Assistant of Palestine Technical University Kadoorie-Palestine.

Bahaeddin Alareeni
Allam Hamdan

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Implementation of Artificial Intelligence, IoT and Innovative

Success Factors Affecting the Adoption of Artificial Intelligence and the Impacts of on Organizational Excellence: A Case to be Studied in the MENA Region, and Turkey in Particular



Nour Alserr and Murat Adil Salepçioğlu

Abstract AI adoption behavior requires firms' preparedness, zeal, and high management support. Adoption is depicted by technology as an affected notion by the technologies internal and external gathering to the corporation in addition to their realized utility, organizational and technical harmony, and learning curve, pilot test experimentation, and intelligibility/illusion (Awa and Ojiabo 2016). The research provides supplementary comprehension image regarding adoption success agent, the anticipating defiances; the effect on organizational excellence and post-adoption benefits. The study utilizes the descriptive analytical tactic and data collection resources of both primary and secondary resources. Primary resources used mixed data collection instruments of both questionnaires and interviews. Secondary sources included literature review from pertinent previous studies, research papers, periodicals, books and references. The research sample draws from Turkish private business sector firms in health care, education, marketing and advertising organizations, services outlets, financial organizations, general trading & commerce institutions and telecommunications firms. In order to analyze the data, structural equation modeling was implemented. Total of (11) agents were suggested to critically influence AI adoption. The outcomes exhibit that three agents, namely correspondence, executive support, and observability, directly influence AI adoption. Organization's technical capacity and perceived relative advantage impact compatibility, but they are indirectly related to AI adoption. Competitive pressure impacts relative advantage of Artificial Intelligence technologies, yet it is relevant to the adoption of Artificial Intelligence indirectly. However, the experimental impacts in this study imply that trialability factor is not linked to AI adoption. It should be noticeable that this factor, in other situations, might still exert influence.

Keywords Artificial intelligence · Adoption of AI · Organizational excellence

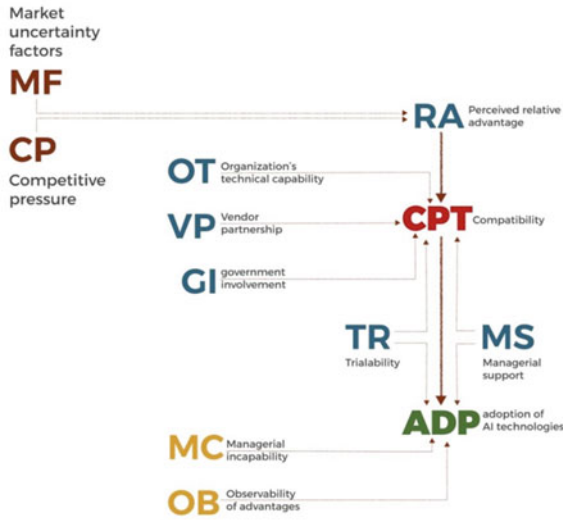
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1 Introduction

With the accelerating wheel of industry and civilization around the globe, Artificial Intelligence revolutionized how technology can be a replacement of human beings in accomplishing manual tasks and processing activities. Machines possessing the sufficient innovation and technology to take over human activities can be described as intelligent. Consideration of Artificial Intelligence has been gained due to the unceasing and unprecedented improvements on the concept of AI. These improvements have created a state of economic power for many countries.

The interest in AI has been growing as it is signaled that it will be leaving a colossal impact on societal, organizational, and economic levels. Exhaustive research has been conducted over the adoption of Artificial Intelligence in the organizational level. The implications of Artificial Intelligence have been influencing firms, schools, and governmental facilities as it is being considered by decision-makers and business owners. Following the formalization of Artificial Intelligence, private-sector organizations have entered intelligent machines and expert systems to their workplaces. There have been in-depth investigations on the predictions of AI in organizations and how this appears in terms of human resources management, expenses, risks, and mitigation plans. Firms have studied the repercussions of AI adoption and have thus acted actively towards bringing expert systems, speech recognition, image processing, deep learning and robotics to be included. Empirical researches have examined the AI adoption in firms and businesses which have concluded that AI helps in higher productivity, less risks, and costs. In addition, it has established a credibility and advantage for organizations adopting intelligent systems in their workplaces. World's leading corporations such as Amazon, Facebook, and Apple have chased the rapid growth of Artificial Intelligence in order to bring it to their places. They have adopted it and their businesses have thrived. The competitive advantage AI adoption offers for these firms has great impacts on the short and long term. Especially, researches declare that firms ignoring AI adoption are highly jeopardized. They also show that 59% of organizations study the possibility of adopting AI in their workplaces. E-readiness or AI adoption has been studied on many levels, one of which is the firm's level. Various models have been considered and speculated for the sake of improving and sustaining efficiency and competitiveness. There are many factors to be studied when adopting technology in the organizational level. The firm's adoption of AI is analyzed by the use of two theoretical frameworks TOE and DOI. Diffusion of Innovation theory indicates the process of people adopting a new method, concept, or philosophy. Deployment of intelligent machines in firms under the DOI theory comes under the AI adoption attributes of compatibility, trialability, complexity, and observability. Compatibility determines how well an innovation can meet the values and needs of an organization. Complexity indicates the innovation understanding and adoption difficulty. Trialability refers to the innovation utilization facility and testing. Observability is the extent of the potential innovation tangibility (Alsheibani et al. 2018).



1.1 Compatibility

Describes the degree to which a perceived invention meets a consumer’s “present values, previous experiences and requirements” (Nørskov et al. 2015). Reviews point out that three invention features out of the five consistently exhibit important effect on the innovation adoption evaluation, such as proportional feature, correspondence and complication (Kapoor et al. 2014; Tornatzky and Klein 1982).

1.2 Relative Advantage

Is a one of innovations attributes being portrayed as the level implying that an invention manifests to be superior than the replacing idea. Relative advantage sub-dimensions include social prestige, low initial cost, savings in time and effort, comfort boost or discomfort reduction and the output immediacy, and the degree of economic profitability. But, it is not easy to show the whole prospective comparative advantages of an invention, because a few of which may not be apparently former to application (Askarany et al. 2007). Prorated benefit ascribed to an innovation realized benefit over the current products in the market (Nørskov et al. 2015).

1.3 Complexity

Is ascribed to the level of the perceived difficulty of an invention to be understood and used by consumers. Out of the five attributes, it is the only attribute, which is associated with the innovation diffusion rate in a negative way, i.e. the higher an invention complexity gets, the slower its adoption average will be. Rogers suggests that complexity may not be as useful an adoption predictor as compatibility and relative advantage. However, in their e-service adoption study in Saudi Arabia, (Al-Ghaith et al. 2010) found complexity to be the best adoption predictor among Rogers' proposed attributes (Tully 2015a).

1.4 Trialability

Is known as the grade to which an invention can be used on a restricted basis before full application (Askarany et al. 2007). It is also defined as the flexibility to test the innovation outcomes. This has been playing a major role in facilitating the process of adoption of Artificial Intelligence at firm level. The rest two characteristics—trialability and observability—relevance and effects rely on the pattern of the product as well as on the state, where the invention is expected to be adopted. Rogers (1995) disputes that possible adopters, who are permissioned to experiment with an invention, are most probable to adopt it and will feel most comfortable with it. Occasionally, trialability according to (Kolodinsky and Hogarth 2001), grants customers the capacity to assess the advantages of an innovation. As a result, particular fears of the anonymous and the inability to use can be decrease if consumers are bestowed the chance to scab the invention (Zolait et al. 2008).

1.5 Observability

Refers to the degree to which potential adopters can observe the innovation results (Askarany et al. 2007). Observability is also known as the range to which an invention and its outcomes can be observed readily through a consumer. An invention observability is positively related to adoption, according to Rogers. (Moore and Benbasat 1991) classified observability into two constructs: clarity, or “the range to which the possible adopters see the visibility of invention in the adoption status” and demonstrability of result, or “the results tangibility of using the innovation,” (Liao and Lu 2008, p. 1407). Agarwal and Prasad (1997) found visibility to be an influential factor in the World Wide Web user acceptance, which is a highly visible innovation that piqued the curiosity of potential adopters (Tully 2015b).

1.6 Managerial Capability

For the best application and impact, Artificial Intelligence needs certain organizational capacities such as the company and the modern technology align. AI needs modern information technology (IT) dexterity which are both AI-generic, such as the grasp of new programming languages (e.g., Python) and particular, such as machine educational proficiencies, implementation evolution techniques (e.g., agile software development), and new IT architecture proficiencies (e.g., edge computing). In addition, it requires management of information and skills of analysis. AI grows in enormous data degrees that require the occurrence of digital data, its arrangement, as well as analysis and synthesis. Providing that most information is network created (e.g., websites, sensor data from IoT devices), proficiencies of security—generic as well as AI-empowered—become essential to make sure the rights of entrance, revelation of intrusion, and safety of data. 21 Last, in order to ensure a navigable application and excessive arrangeable alignment and shore, these proficiencies have to be established in an appropriate strategic framework coherently. The seven organizational fields make the leaders capable to accomplish enormous business outcomes compared with backwards. Compared with backwards, bosses significantly outline reinforced real impacts of business in their programs. We discover significantly greater impact degrees on present business samples transformation, evolutions in practical ability, development in revenue, offerings' competitiveness strengthening, as well as customer's experience promotions (Brock and Von Wangenheim 2019).

Due to the growth of capacities for self-determining decision-making, probably the all-important case to shed the light on is the need to think again of responsibility (Dignum 2017). Whatever people's self-determination, social alertness and learnability level, AI systems are artifacts, which are constructed by them to fulfill some goals. At all improvement phases (analysis, design, construction, deployment and evaluation), approaches, techniques, and algorithms are required in order to combine social, moral and legal principles into technological improvements in Artificial Intelligence. These frameworks have to deal together with the machine independent reasoning about such topics that we deem having ethical effect, but most importantly, we want frameworks to lead the options of design, organize the reaches of Artificial Intelligence systems, enclose the stewardship of convenient data, and assist individuals determine their involvement (Dignum 2018).

If machines are engaged in human societies as almost independent agents, then those agents have to be expected to follow the social and moral standards of the community. Rooting standards in such quasi-independent systems require the community clear planning in which they being prevailed. Furthermore, technical embodiments different types will demand diverse sets of criteria even within a particular community. The first step is to identify the certain society norms in which the systems are being prevailed and, particularly, the relevant standards to the designed types of missions to perform. Also, affect is the intelligence core aspect. Drives and feelings such as ire, terror, and happiness are often the behaviors cruxes during our lives. Independent and smart systems, that take part in or facilitate

human community, should not cause damage by either dampening or amplifying the emotional experience of human to make sure that smart technical systems will be utilized to assist humanity reach the highest conceivable range in all conditions (Chatila and Havens 2019).

1.7 Technical Capability

Refers to the human cleverness of human simulation in machines, that are programmed to think as individuals and imitate their behaviors. The concept might also refer to any machine that exhibits traits related with a human mind, for instance, problem-solving and learning.

1.8 Government Involvement

Artificial Intelligence is a chance arena that agencies of the government can actively predict and trace for when promoting their legacy systems. Regarding online services like Netflix and Facebook, we are starting interacting with artificial intelligence (AI) on a near daily basis to chatbots on our mobiles in our houses as Siri and Alexa. AI is a computer training or programming to do works typically specified for human cleverness, even it is answering technical questions or recommending which movie to watch next. Soon, the ways we interact with our government will be permeated by AI, also. From small towns in the US to countries like Japan, government proxies are looking to AI to develop the services of citizen. While the possible future uses cases of AI in the remain of government that is restricted by government resources and the human creativity and trust in government limits, the clearest and immediately beneficial opportunities are those where AI can help resolve resource allocation problems, reduce administrative burdens, and adopt significantly complex works.

1.9 Market Uncertainty

With the technology advancement, we might soon cross some threshold beyond which using AI requires a faith leap. Organizations have already started to question the material source and authenticity produced by AI, which has already begun to adjust, directly or indirectly, the strategic decision which firms take. Not only does this require an improvement of decision goodness or lowering in time, but a fractional or full satisfaction with the strategy creation of the contribution marketing. Efficient utilization of AI for creating a strategy of marketing may influence the organization frame.

1.10 Competitive Pressure

Is a drive to change in order to keep up with the actions of AI competitors. This can apply to both firms and countries. US is considered as a player among many players in AI, and many countries are preparing to make sure they have the competitiveness in AI.

1.11 Vendor Partnership

Despite the unfamiliarity of Artificial Intelligence technologies, firms look forward to associating with IT vendors and collaborative partners so that they give trust to adopt AI. Vendor involvement is of assistance to adopt new technology and diffuse innovation. Thereupon, vendor partnership has been defined as a coalition and a relationship established between a firm and its vendors, which add value. Activities such as data collection, research, marketing, sales, and product development can be beneficial when total cost of acquisition is reduced, for example. To build a vendor partnership is to increase the reliability of Artificial Intelligence. Hence, this contributes to an increase of AI adoption. Firms have been improving vendor relationships as a power to be AI-boosted corporations.

2 Organizational Excellence

Drastic changes occurring currently in business environments including globalization, massive technology advancement and information systems, the opening up and expansion of markets, the varying models of competition and the rapid and sustained development of the global economy. In order to keep up with growth and evolution, realize, and more importantly maintain organizational excellence, organizations have had to pay attention to strengthening their organizational capacities. (Harrington 2005) defined organizational excellence as the organizations investment in critical chances led by effective execution, efficient strategic planning, commitment to a common vision, clear purpose, adequate resources, and diligence. Combining and managing the five pillars are the key to organizational superiority. The five pillars are as follows:

2.1 Process Management

Indicates the transformation activities and capacities that transform information into product, which corresponds the performance and requirements of quality of

the customer. In prime organizations, management needs each natural team work (or department) to improve (refine) the operations that it utilizes. The adoption of AI to support various operations involves operating algorithms into systems that return organizational processes. AI capacities emanate from their ability to decrease search time and manipulate more data to cognize decisions. This is how they would increase productivity and free employees to do higher-level tasks, specially, work that demands human adaptability and innovation. Eventually, AI applications can contribute to improve operational excellence and consumer delight.

2.2 Project Management

Proficiencies, knowledge, methods and stuffs application are needed to plan in order to implement project requirements (Schwalbe 2014). In most organizations, projects are mission-critical activities, and it is non-negotiable to deliver quality products on time. Two of the most important projects that organizations undertake are process redesign and process reengineering (Harrington 2005). AI plays key roles in project management as an enabling technology for reengineered processes as well as in the tools to support the change process itself.

2.3 Change Management

Deals with both intentional and planned interventions to give rise to growth and transform from an existing to a targeted status to accomplish objectives pre-definition in a common and apparent view between the chiefship and personnel of the organization. An effective change management that embraces AI systems calls for that the organization signifies the drivers of key business which need to be changed, and how do they get changed. How to proceed toward AI adoption and automation programs in terms of governance, employee's commitment & engagement, and people's reskilling.

2.4 Knowledge Management (KM)

Is a methodical approach collection that facilitate the flow of knowledge and information between and to the proper people at the proper time, cost, and format (APQC). Thus, it composes of methods, initiative, operations and systems that promote the creation of storage, evaluation, collaboration, and knowledge (Jashapara 2011). The essential to organizational success is knowledge. A knowledge management system (KMS) requires to be designed around the main capacities of the organization. As a result of recent advancements in technology, knowledge management proved to be more effective in responding to people's needs, less standardized, pervasive and

more cost-effective. The capabilities of the Artificial Intelligence tools massively help employees to get the targeted information in a blink of eye and foster real-time decision making. In addition, it assists to enhance tracking processes and documentations efficiently. Artificial Intelligence can go beyond through extracting meaningful information from a huge amount of structured and unstructured data as well as forecasting market trends.

- a) **Resources management:** is the operation by which businesses manage their diverse references efficiently and effectively. These resources cover imperceptible and perceptible resources, including all assets and resources available to the organization. One of the most critical and complex activities of an organization is effective resource management. Becoming a superior organization is not easy; each of the resources requires to be exploited in its own proper manner. AI systems proved to improve resources management in terms of cost reduction and real-time continuous optimization solutions that aids to improve performance drastically.

3 MENA Region

AI is fueling digital transformation across the Middle East & Africa nowadays, according to Samer Abu-Ltaif, President - Microsoft Middle East and Africa. The study of AI maturity assessment, which is conducted in five countries across MEA, highlighted the strategies adopted at an organization different layers today and accordingly helped to grasp their readiness in AI adoption, impact rate and implementations benefits, as well as how AI is being approached on a practical level. This study is also a milestone in efforts to better realize the demands of consumers in the area and speed up their prosperity paths. Within the boosting of the prospective role of Artificial Intelligence (AI) as a player of transformational change to businesses and industries is penetrating? There are still some perceptions into what firms are currently acting in order to get its advantages. And the challenge ahead is leadership and culture more than it is about data, analytics, and technology. Mona Vernon, CTO, Thomson Reuters Labs stated that “The sheer range of the story of AI rests in its early phases. What we do know is that computing power, big data and connectivity are changing the industrial landscape. The chance remains in speeding up the businesses digitization, making them more data driven through constructing applications that transfer machine-assisted perceptions.”

4 Turkish Private Sector and Adoption of AI

The usage of AI has become common in most of the developed countries, one of which is Turkey as a country with a prosperous economy and a high-quality performer in entering Artificial Intelligence to its facilities and lifestyle. More private-sector

companies have begun to adopt Artificial Intelligence as an instrument to improve the work environment, increase productivity, lessen expenses, and race the modern global trends to ensure progressive economy and profitability. Furthermore, Turkey has equipped its firms with state of the Artificial Intelligent machine paving the way for macro-economy and construction of a robust financial industry. After the dramatic increase of economic growth post the 2001-crisis, the social outcomes in Turkey have surged.

Technology has thus affected diverse private corporations in Turkey. Based on this, more expectations of what companies have to achieve for annual revenues have heightened. More nationwide projects have been executed to reinforce the use of technology in schools, legal-framed firms, and economic institutions. Turkey has positioned Artificial Intelligence in its priorities in order to realize its underlying macro-economy. In fact, there have been calls for the future schemes of AI adoption in the Turkish healthcare, ICT, food and automotive areas. With the arrival of new terms “Industry 4.0” and technologies, the private sector has reckoned that it has to take action for the development in the form of digitalization during its work. The new revolution of Artificial Intelligence furnishes production systems with enhancements in data and communication technologies. The speed of other countries entrance of AI to their professional-level environments, particularly in private sectors, has aroused the desire of other counties like Turkey to advance its vision towards Artificial Intelligence and big data. This has constructed a paradigm shift in the area. Due to believing that technology will affect the upcoming decades, the vision of the Turkish private sector has been modified to incorporate Artificial Intelligence applications to its environment. The variety of AI applications has offered a rich floor to public and private sectors for prosperity.

5 Managerial Implications

Recently, there has been a remarkable increase in AI adoption in organizations as new forms of work have risen substantially. AI stands as a strategic technology for organizations, this research serves to open horizons for private businesses through AI to survive and grow with its capabilities in improving organizational efficiency, effectiveness, and leverage the role of this sector as a strategic business partner in economic transformation in growing economy such as Turkey. The research explores the effects of success factors on AI adoption by integrating the technology, organization, and environment (TOE) framework and diffusion of innovation (DOI) theory.

Management awareness on many challenges facing AI adoption would lead to identification of them. These include lack of top management support, lack of knowledge and awareness, lack of government regulation, lack of skills, resistance to change, incompatibility and interoperability problems, initial cost, and security and privacy risks.

Strong top management support goes along with AI adoption, which is in both ways driven by number of success factors as well as hindered by number of organizational barriers. Management in organizations should consider lack of AI skills and employees' fear of change. Also, AI characteristic like mimic human intelligence creates new management issue for legal activities.

The technical or technological barriers include all the relevant internal and external technologies available within the organization. The technological barrier category includes security, and limited technology capabilities (Bughin et al. 2017; Ransbotham et al. 2017). Regardless of how advanced organizations are in terms of technology deployment AI implementation dependence on a digital foundation develops as each new generation of innovation builds on the previous one (Ransbotham et al. 2018).

Management should be in contact with policy-makers who take political and economic decisions that impact country's development. Furthermore, numerous domains have been studied in terms of adoption 'success factors' or 'enablers' to allow organizations to benefit from adopting innovation.

AI offers a new strategic approach towards business decision-making resulting in new ways to create value, which are not well understood (Chui and Francisco 2017; Ransbotham et al. 2018).

6 Limitations

Artificial intelligence has emerged as a research field. Although the research doesn't invite to capture all agents which affect AI adoption and company sustainable prosperity, and future research could further examine the findings, it gives a good grasp and worthy framework in which to improve as well as examine experimental propositions in the relevant sectors.

Secondly, the research has specific parameters with geographical scope and time, other researches including additional variables need to be conducted elsewhere and at different times to validate the findings of this research.

7 How COVID 19 May Affect Research

COVID-19 has both positive and negative results on AI adoption; positive perspective suggests that dire need for data and analytics that COVID-19 is producing expected to accelerate laying the foundations for AI. For this is to lead to a long-term increase in AI adoption. While negative perspective explains that cuts in budget or headcount that were allocated to AI projects, AI leaders will need to be strategic about which projects they prioritize in the short-term.

Big challenges are related to access to data, availability of data, cleanliness of data and data rights, however businesses start getting to deal with such issues, still

the biggest obstacle is showing people why should they trust that the AIs produced will continue perform well enough to make good decisions.”

8 Conclusions and Recommendations

Artificial Intelligence has the disturbing possibility to transform industries, increase utilities and fundamentally change society. From the point of view of the number of projects at present, the major manufactures with more AI permeation include finance, healthcare, education, business, and public safety. According to (Mitter 2018), AI is supposed to become a big parcel of our daily life in 2020s. Enormous benefits for companies can be created by AI, but on the other hand AI is also capable of bringing risks to turn the company status into a passive status. For instance, if a firm is somewhat indifferent, it possibly exposes sensitive as well as valuable information, which this way weakens its competitive benefits. Firms run the risk of over-depending on providers if they do not construct internal managerial and technical capacities. Despite that elapsed researches have suggested many significant agents that affect IT adoption, few researches empirically discover the influencing success agents on Artificial Intelligence adoption.

The important enablers are the success agents, which lead to a successful implementation of AI. These agents play a significant function in evolving the possibility of success in decision-making. Before adopting AI-based solutions systematically, firms need to evaluate these factors. Therefore, this research aims to explore the agents of success impacts on AI adoption from the external surrounding, organizational attributes to AI, and invention attributes of AI perspectives.

To analyze the data, structural equation modeling is applied. Sum of (11) agents are proposed to affect AI adoption significantly. The results show that four agents, which are correspondence, executive support, and observability immediately influence adoption of AI. Organization's technical capacity and perceived relative advantage impact compatibility, but they are relevant to AI adoption indirectly. Vying pressure impacts relative advantage of Artificial Intelligence technologies, yet it is deviously linked with the adoption of AI. However, the experimental results in this research signal that trialability factor is irrelevant to AI adoption. It should be noticeable that this factor may keep exerting effect in other occasions. Relying on the main research, the extra research examines the external surrounding agents' role and discovers that although a few of them are not decisive determinants for AI adoption, some of which have the ability to affect compatibility, which implies that the external surrounding agents are still important in the whole adoption operation. Although the research doesn't invite to capture all agents which affect AI adoption and company sustainable prosperity, and future research could further examine the findings, it gives a good grasp and worthy framework in which to improve as well as examine experimental propositions in the relevant sectors. Secondly, similar researches could be conducted elsewhere outside the geographical scope of this research, including additional variables so as to validate the findings of this research.

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Innovative Software Tools for Effective Management of Financial and Economic Activities of the Organization



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Abstract The formation of information support for the management of sustainable development of the organization is studied. The essence of accounting policy as a tool of information support, which takes into account the economic, environmental and social aspects of sustainable development. The purpose of the accounting policy, which is carried out through the implementation of tasks in terms of subsystems of the system of accounting and analytical support for sustainable development (accounting, analytical and subsystem of non-financial information). Levels of legal regulation of its formation and implementation (international, state, branch and micro level) are established. The components of accounting policy (organizational, methodological, technical) and their content are determined. The stages of formation and implementation of accounting policy (preparatory, basic, final) are substantiated. A method of assessing the quality of accounting policies for the formation of information support for sustainable development of the organization on the basis of clear criteria. The elements of the accounting policy are defined, which should be assessed in detail when determining the level of its quality. The necessity of formation of the accounting policy of the organization taking into account factors of sustainable development for the purpose of effective management of economic, ecological and social aspects of activity is proved.

The practical significance of the obtained results lies in the possibility of applying the developed methodology of accounting policy quality in the formation of the order of accounting policy as a regulatory document, as well as in the internal audit of financial and economic activities of the organization.

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Keywords Information support · Sustainable development · Organization · Strategic direction · Management · Cost · Accounting policy · Quality

1 Introduction

An integral condition of the process of formation and implementation of the strategy of sustainable development of the organization is the use of the most effective tools of information management, which is part of the system of accounting and analytical support. An important tool for making management decisions is the accounting policy of the entity. At the same time, at the present stage, accounting policy as a tool to provide the company with complete, reliable, unbiased and objective information does not take into account the need to reflect in the accounting and analytical process the relationship of economic, environmental and social aspects of the organization.

Among the main problems of insufficient attention to take into account in the accounting policy of the strategic focus on sustainable development of the organization are the following:

- imperfection of the current legislation in the field of sustainable development and inconsistency of provisions of separate regulations among themselves;
- definition of the concept of «accounting policy» without taking into account its focus on addressing issues of information management of sustainable development of the organization;
- formal attitude of accountants to the formation of accounting policies without taking into account the priorities of information support for sustainable development;
- the difficulty of choosing the most economically justified option for accounting or evaluation of a particular object, which characterizes not only economic but also environmental and social aspects of the activity;
- failure to take into account the impact of accounting policies on the economic, environmental and social performance of the organization in reporting on sustainable development;
- Lack of methods for assessing the quality of the established accounting policy, which would provide an opportunity to obtain objective information for effective management of the organization in the implementation of its sustainable development strategy.

Solving these problems requires changes in approaches to the methodological aspects of accounting policy formation and assessment of its quality in the context of the organization's choice of sustainable development strategy.

2 Literature Review

A number of scientific works are devoted to the problems of information support of sustainable development management of the organization and their solution.

The implementation of measures of corporate social and environmental responsibility as one of the components of sustainable development and taking into account its practices in shaping the strategy of the organization was studied by a group of scientists (Hakobyan et al. 2019). They analyzed the competitiveness indicators of companies that determine corporate social responsibility.

The relationship of sustainable development with the accounting and analytical system of the enterprise has been proven in scientific work (Budko 2017). A number of scientists have confirmed the scientific and practical hypothesis about the theoretical and methodological ability of the Institute of Accounting to solve the problem of information support for the implementation of national policy of sustainable development (Sokil et al. 2020).

Other scientists have also studied the need to change the accounting methodology due to the introduction of the principles of sustainable development in their activities. They analyzed the role of accounting for sustainable development and national security of Ukraine, and also pointed out the importance of implementing integrated reporting (Akimova et al. 2019). Some scientists have established the relationship between the concept of sustainable development and the accounting system of the enterprise, developed a matrix for determining the level of corporate social responsibility in terms of its hierarchical levels and a nomenclature of indicators for assessing the state of social responsibility (Pylypiv et al. 2018). Some aspects of accounting and analytical support for sustainable development, in particular, the environmental component, scientists reveal (Tomchuk et al. 2018). They proved the need to reflect in the accounting of environmental activities, which include environmental assets, liabilities and performance.

A number of scholars have devoted their work to the problematic aspects of reporting, which reflects the activities of the organization in terms of sustainable development. Research of technological innovations associated with the growth of the array of accounting data, the speed of their dissemination, the need for timely and in-depth analysis and audit in order to make decisions by stakeholders on the basis of reporting, which is based on accounting data according to ESG-criteria Vasilieva and IM Makarenko (Vasilyeva and Makarenko 2017). The rationale and relevance of the presentation of environmental, social and management information by stakeholders in the format of ESG-reporting in order to form the long-term value of business on the principles of transparency and business ethics have been studied by scientists (Kundrya-Vysotska and Demko 2020). They proved that the companies that prepare such reports provide information needs of users on the possibilities of implementing a sustainable development strategy. A number of scientists also reveal the issues of accounting and reporting of the impact of enterprises on the environment and society (Vallišova et al. 2018). Krutova et al. (2018) studied the new concept of reporting, which actualizes the solution of problems of measuring and forecasting the potential

consequences of economic, environmental and social interaction through indicators of integrated reporting.

Solving the problems of analytical support of sustainable development, substantiation of the need to analyze the results of financial and economic activities of enterprises using financial and non-financial indicators, the study of the relationship between reporting on corporate social responsibility and performance were carried out by scientists (Kasych and Vochozka 2018; Levytska et al. 2018; Al-Hajri and Al-Enezi 2019). A methodology for assessing and determining an integrated indicator of sustainable development based on accounting and analytical performance indicators of enterprises was also developed (Sokil et al. 2018).

However, the formation of information for sustainable development management at the initial stage with the help of accounting policy tools is ignored. The analysis of scientific works shows that the general issues of formation and implementation of accounting policy are mainly studied.

Disclosure of the essence of accounting policy as a tool for managing the value of the enterprise and a means aimed at ensuring the implementation of the tasks set before the accounting service, carried out by Lagovska (2012). The accounting policy in terms of the components of the value of the enterprise was studied by MV Koryagin. He stressed the need to approve the provisions in the accounting policy regarding the choice of methods for estimating the value of assets and liabilities, the order of their application in order to bring the value of the enterprise to market level (Koryagin 2012). PE Zhytny studied the organizational and methodological aspects of accounting policy of financial and industrial groups, in particular, the essence of accounting policy and the prerequisites for its development, classification features of factors influencing accounting policy, the formation process and its applied aspects (Zhytnyi 2007).

A number of authors have devoted their work to solving problems of formation and implementation of accounting policies in specific sectors of the economy. Yes, V.M. Rozhelyuk was engaged in solving the problems of forming the accounting policy of the processing enterprise (Rozhelyuk 2013). The formation of accounting policies at the enterprises of the grape and wine industry in terms of the distribution of management costs was considered by a group of scientists (Gutsalenko et al. 2020). N.G. Tsaruk identified key elements of accounting policy and proposed its regulations, which are typical for agricultural enterprises (Tsaruk 2016). Peculiarities of the bank's accounting policy were revealed by Artemyeva (2013). The study of the content, purpose, practical application of the basic levels of accounting policy and their tools in the public sector was carried out by (Lutsyk 2019).

However, the issues of methodology and organization of accounting policy and assessment of its quality in the context of its focus on ensuring the sustainable development of the organization remain out of the attention of academia and require thorough research.

3 Purpose of Study

The purpose of the article is to substantiate the conceptual theoretical and methodological and organizational and methodological provisions of accounting policy and the development of methods for assessing its quality as a tool to take into account the impact of sustainable development factors on the results of the organization.

4 Methodology

The methodological basis of the study is dialectical and epistemological methods that are used to deepen the economic essence of the concept of «accounting policy» in terms of sustainable development. To achieve this goal, such general and special methods of scientific knowledge as methods of analysis and synthesis, induction and deduction, expert evaluations, logical generalization were used. Thus, induction and deduction methods were used to identify possible alternatives to accounting policy methods and procedures.

The methods of analysis and synthesis are used to determine the levels of accounting policies that will help to obtain information to manage the sustainable development of the organization. The method of expert assessments was used to assess the level of quality of accounting policy, the method of observation - to monitor the status of elements of accounting policy in the organization. Using the abstract-logical method, the sequence of stages of formation and implementation of accounting policy is determined.

The method of logical generalization is used in the development of practical recommendations for the preparation and content of the order on the accounting policy of the organization and the use of methods for assessing the quality of accounting policy in the system of accounting and analytical support for sustainable development.

Tabular and graphical methods are used for visual visualization of materials and a schematic of a number of theoretical provisions of the study. Bibliometric and bibliographic analyzes allowed to identify the level of research on the organization of information, in particular accounting and analytical, in the implementation of sustainable development strategies and identify unresolved issues of accounting policy as a basis for generating the necessary information for management decisions in economic, environmental and social sphere of enterprise activity.

5 Conclusions and Discussions

Analysis of interpretations of accounting policy shows that, mainly, researchers define it as a set of principles, methods, procedures, and methods of accounting for

financial and economic activities. In addition to defining the essence, some scholars point to the ability of accounting policy to ensure the optimal construction of all accounting subsystems and be a tool for enterprise management. As you can see, the approaches of scientists emphasize the crucial role of accounting policy as a tool for implementing development strategies and balancing the interests of different stakeholder groups. However, its role in the management of an organization focused on sustainable development and justification of its importance in forming the optimal model of accounting and analytical support for sustainable development of the organization, the information end product of which is reporting on sustainable development, is not defined in these approaches.

Given the above, accounting policies for sustainable development should be interpreted as a set of principles, methods and procedures, using which based on the application of regulations or professional judgment, take into account the features of information reflection of economic, environmental and social aspects of the organization using financial and nonfinancial indicators. nature, which will ensure the formation of reporting in accordance with the requests of stakeholders.

The purpose of accounting policy is to obtain the maximum total effect of the activity, taking into account its priorities to achieve tactical and strategic goals of sustainable development using reliable financial and non-financial information reflected in the financial statements and Sustainable Development Reporting. The goal is realized through the implementation of tasks in terms of subsystems of the system of accounting and analytical support of sustainable development, which should include accounting, analytical and subsystem of non-financial information:

- 1) in relation to the accounting subsystem:
 - within the framework of financial accounting - ensuring compliance with the uniform requirements for the formation of financial statements and reflection of the financial condition to achieve maximum attractiveness of the company for investors;
 - within the management accounting - the formation of a rational system of information support for management decisions;
 - within tax calculations - the choice of the optimal taxation system;
- 2) in relation to the analytical subsystem - ensuring comparability of indicators of the organization, which are reflected in the financial statements and reports on sustainable development for different periods and with indicators of other organizations, development of guidelines for analyzing the financial condition of the organization and analysis of sustainable development;
- 3) in relation to the subsystem of providing non-financial information - ensuring the formation of a system of non-financial objects that characterize the economic, environmental and social performance of the organization.

Given the importance of accounting policies for the purposes of managing the sustainable development of the organization, first of all, it is necessary to dwell on the different levels of legal regulation of its formation and implementation. Mostly

scientists who study the problems of accounting policy formation, determine that the accounting policy is carried out at the state level and at the enterprise level (Butynets and Maliuha 2001, p. 8). Scientists also distinguish three other levels of accounting policy regulation: state, intermediate (branch, departmental), local (enterprise) (Davydov and Savchenko 2017, p. 154). MS Pushkar defines such levels of formation and application of accounting policy as international, interstate, state, branch and enterprise level (Pushkar 2010, p. 241). Despite the above approaches of scientists, based on the concept of sustainable development, it is logical to assume that accounting policies should be regulated at four levels: international, state, industry and organization.

In particular, for financial reporting, there is a separate standard at IAS 8, IAS 8, accounting policies, changes in accounting estimates and errors, which defines the criteria for selecting and changing accounting policies, together with the accounting approach and disclosure of changes in accounting policies and changes in accounting policies. Accounting estimates and error correction (Law of Ukraine 1999). Based on the content of this IAS, we conclude that it is necessary to cover in the financial statements of environmental and social aspects of activities, as this document aims to ensure the relevance and reliability of financial statements and their comparability with the reporting of other periods and financial statements of other organizations. The main requirements and recommendations for reporting on sustainable development at the international level contain modular standards for non-financial reporting (GRI Standards), and therefore when formulating accounting policies for non-financial reporting, should be based on their provisions.

As a tool for regulating accounting at the state level, accounting policy should be the basis for the formation of accounting policy at the micro level, i.e. at the organizational level. This can be achieved in the process of improving the legislative and regulatory framework in the field of accounting. The analysis of the domestic legal framework shows incomplete compliance with international accounting and reporting standards. In view of this, at the state level it is necessary to begin work on the development and implementation of a separate standard (provision) of accounting «Accounting Policy of the organization». The development, adoption and implementation of the proposed methodological document on accounting policy will be an important area of implementation of accounting doctrine, as well as contribute to the formation of accounting policies aimed at solving problems of accounting for operations that characterize its sustainable development at the micro level. It is also important for the implementation of the state accounting policy in the field of sustainable development to adapt the provisions of the modular standards for non-financial reporting (GRI Standards) to national conditions in the process of developing guidelines for sustainable development reporting, as a document that regulates, environmental and social aspects of activity.

At the micro level, organizations are currently actively using standards-approved alternatives. Thus at formation of provisions of the accounting policy directed on coverage of ecological and social aspects of activity, the following situations can arise:

- the legislation establishes clear rules on valuation methods and procedures for reflected transactions;
- there is no legislative regulation or undeveloped provisions of regulatory regulation of valuation methods and accounting procedures for transactions;
- the possibility of using several options for valuation methods and accounting procedures defined at the legislative level.

According to the first option, the situation should be clearly reflected in the account without any professional judgment of the accountant.

Where legislation is not developed or there is no regulation of accounting principles, methods and procedures, entities may apply International Financial Reporting Standards (IFRSs), the provisions of which relate to similar and related transactions, events and conditions. In the absence of IFRS, organizations are given the right to use professional judgment as an opinion expressed in good faith by a professional accountant in relation to an economic situation that is useful both for its description and for making effective management decisions. This option can be used to identify non-financial objects that characterize the economic, environmental and social aspects of the activity to assess the level of sustainable development of the organization.

If the legislation and regulatory framework provides for several options for accounting for the object in the account, the organization chooses one of the possible options, while forming its accounting policy on the basis of legal and regulatory framework. In this regard, it should be noted that the legislation of Ukraine gives companies the right to determine «in agreement with the owner (owners) or his authorized body (official) in accordance with the constituent documents of the accounting policy of the enterprise» (Law of Ukraine 1999).

The imperative-recommendatory norm of the law and the absence of a separate normative-legal document on the obligation to form an accounting policy by business entities, leads to a formal approach to this process. In view of this, the accounting policy does not ensure the implementation of the defined purpose of the organization, but is a purely formal procedure, which is taken into account only because prescribed by the legislation of Ukraine. At the same time, the effective choice and implementation of accounting policies depends on the effectiveness of management of the organization and the future strategy of sustainable development. The current accounting policy does not take into account the provisions of the concept of sustainable development and does not meet the information needs in terms of reporting on sustainable development.

Accounting in accounting policy as an information basis for management, goals, objectives and principles of sustainable development will provide:

- formation of reliable, objective and complete information of financial and non-financial nature on economic, environmental and social aspects of the organization;
- providing users with information about the degree of social responsibility of the organization;

- the ability to compare financial statements in terms of indicators that characterize the environmental and social aspects of activities for different periods, and with the reporting of other organizations;
- formation of non-financial information, without which it is impossible to assess the achievements of the organization in the field of sustainable development;
- elimination of contradictions and imperfections of the current legislative and regulatory acts through the use of accounting policy provisions for substantiated evidence of the chosen method of reflecting individual business transactions;
- increase the efficiency of activities and prevent negative results of economic, environmental and social aspects of activities through a system of selected accounting procedures;
- formation of a single methodological basis for creating an accounting and analytical system for objective assessment of assets, liabilities, expenses and income, tax optimization, full reflection of internal and external accounting information and non-financial indicators that directly or indirectly determine the degree of social activity of the organization, as conditions for its sustainable development.
- optimization of the taxation system, when the choice of individual elements of accounting policy affects the amount of taxable income;
- achievement of optimal performance indicators for all types of activities, which are embodied in financial and non-financial indicators (indicators that characterize the environment, as well as social aspects of activity).

The implementation of this should be carried out in the context of individual, clearly defined components of accounting policies. MS Pushkar points to four components - the theory of accounting policy, organizational methodology, techniques and accounting technology (Pushkar 2010, pp. 239–240). NV Rozhelyuk notes that the accounting policy should cover all aspects of the accounting process, including methodological and organizational-technical (Rozhelyuk 2013, pp. 142–143). MV Koryagin points out that for the effective formation of accounting policy in terms of assessing the value of the enterprise must take into account its main elements in terms of organizational, methodological, technical and other components (Koryagin 2012, p. 227). The author does not specify other components, but we can assume that these are components which the enterprise can allocate independently, proceeding from own needs. It is also proposed to distinguish two types of components of accounting policy: those based on the legislative regulation of accounting policy (methodological, organizational, technical and tax) and those based on the strategy of the enterprise, the main purpose of which is to ensure cost-oriented management and achieve sustainable development (analytical and international components) (Lagovska 2012, p. 233).

Given the review of the components of accounting policy, it is logical to identify three that will contribute to the effective accounting and reporting (financial, management, tax and reporting on sustainable development). These are organizational, methodological and technical components that are traditional, but aimed at the formation of information flows of financial and non-financial nature, as well as ensuring the information needs of stakeholders (Fig. 1).

I. Organizational component

- determination of persons responsible for accounting, reporting (financial, management, tax) and reporting on sustainable development;
- development of job descriptions of specialists who form reports on sustainable development;
- determining the method of accounting;
- determining the order of interaction of accounting with other services in order to obtain information of a non-financial nature (quantitative and qualitative indicators) for the formation of reporting on sustainable development;
- development of internal legal and methodological support for accounting of environmental and social aspects of activity;
- definition of the organizational form of accounting

II. Methodical component

- **2.1 Methodical component that determines the financial parameters of the activity:**
- definition of objects of accounting, including economic, environmental and social aspects of activity;
- establishing a list, criteria for choosing methods of valuation of assets and liabilities, including environmental and social nature;
- determination of income and expenses, including environmental and social;
- the choice of methods of accounting for environmental and social aspects of the activity;
- choice of taxation system
- **2.2 Methodical component that determines the non-financial parameters of activity:**
- definition of non-financial objects of sustainable development accounting;
- definition of qualitative criteria of identification, definition of criteria of estimation of nonfinancial objects

III. Technical component

- development and approval of the working plan of accounts and the plan of accounts-accounting of non-financial objects (information accounts);
- development of forms of primary documents in the absence of standard forms, as well as for the collection of information on environmental and social aspects of activities;
- the choice of form of accounting;
- development and approval of the document flow schedule;
- development and approval of the schedule of inventory of assets and liabilities;
- composition of management (internal) reporting, including environmental and social aspects of activities;
- keeping records of activities of branches, representative offices and other separate units;
- development of the schedule of formation of the financial, administrative and tax reporting;
- development of a schedule for reporting on sustainable development

Fig. 1 Components of the accounting policy of the organization in the management of sustainable development. *Source developed by the authors*

The organizational component involves the definition of persons responsible for accounting and reporting, the structure of accounting, the development of internal instructions and standards, a description of the method of accounting, the order of interaction of accounting with other services.

Here it is important to identify the person responsible for reporting on sustainable development. Of particular importance in the context of the formation of accounting and analytical system of sustainable development is the description of the interaction of accounting with other services, because on the basis of such interaction is formed non-financial information in the relevant subsystem.

The methodological component concerns the features of economic, environmental and social aspects of the organization, i.e. the establishment of criteria and list of methods for valuing assets and liabilities, rules and procedures for applying these methods, the order of reflection in the accounts and reporting. Since the assessment of sustainable development of the organization is determined not only by indicators of a financial nature, but also by non-financial indicators, the methodological component should include a list of non-financial objects and describe the procedure for their definition. Therefore, the composition of accounting policy issues for this component should be developed with a focus on the preparation of various types of traditional reporting (financial, management, tax) and reporting on sustainable development.

The technical component of the accounting policy concerns the sequence of documents and the order of their processing, development of internal reporting forms, organization of internal control.

Taking into account these components of the accounting policy will ensure the implementation of the organization's strategy of sustainable development.

When developing an accounting policy from the standpoint of sustainable development should take into account the needs of stakeholders of information of financial and non-financial nature, without which the assessment and management of sustainable development is impossible.

The process of forming an accounting policy involves the implementation of several stages: preparatory, basic and final (Fig. 2).

At the preparatory stage: the strategic and tactical goals of the organization are determined taking into account the strategy of sustainable development defined by the organization; outlines the purpose of accounting policies in sustainable development management; external and internal factors that affect the economic, environmental and social aspects of the organization are analyzed; diagnoses the state of the organization's relationships with counterparties, society and the environment; factors of influence on the choice of methods and techniques of accounting objects are determined, evaluated and ranked; the current legislation and regulatory framework in the field of sustainable development and on the activities of the organization and accounting are studied.

This stage is the basis for the development of elements of accounting policy in the second - the main stage, which selects the elements of accounting policy that provide an objective reflection of economic, environmental and social aspects of the organization and, accordingly, its economic, environmental and social performance. According to International Financial Reporting Standards, each entity has

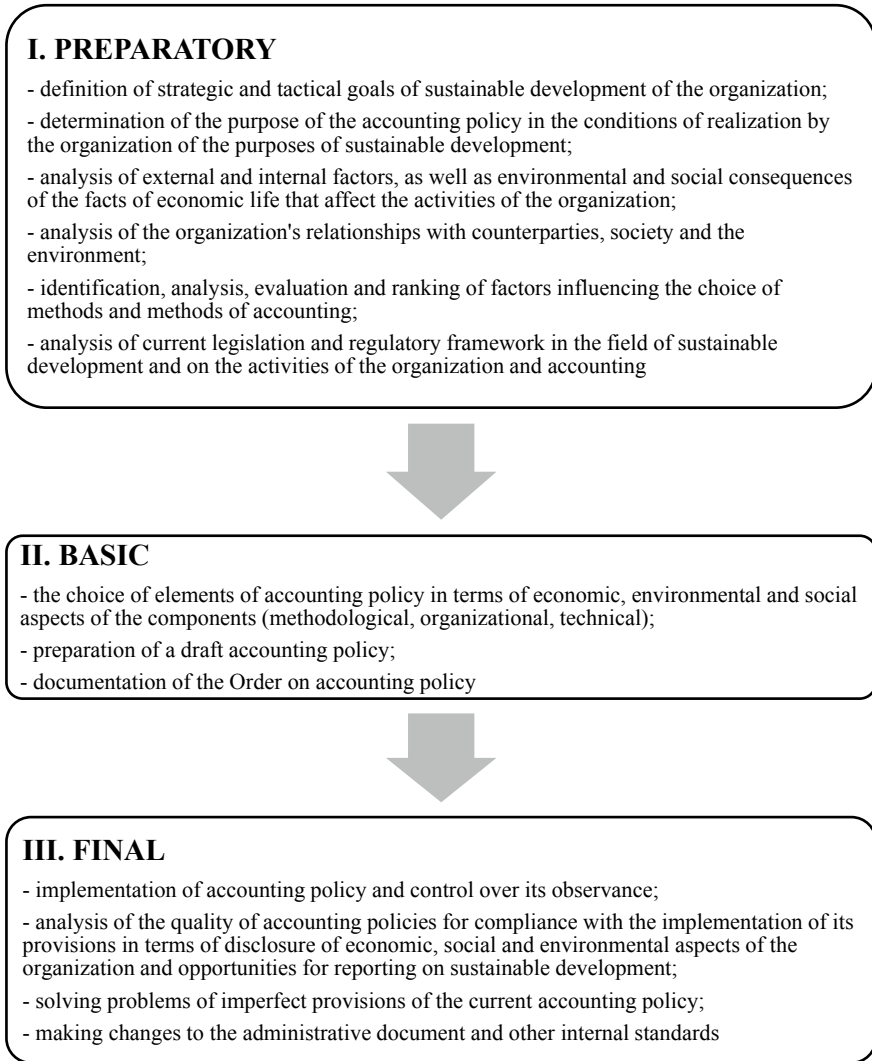


Fig. 2 Stages of formation and implementation of accounting policy as a tool for managing sustainable development of the organization. *Source developed by the authors*

the right to choose the elements of accounting policies, based on considerations of economic efficiency and the specifics of their activities (International Financial Reporting Standards 2020).

The third is the final stage aimed at resolving issues that arise during the implementation of accounting policies. Actions at this stage relate to the improvement of certain elements of accounting policy in terms of coverage and implementation of the concept of sustainable development.

The chosen accounting policy, which is aimed at implementing the principles of sustainable development, must meet quality criteria. In scientific circles, as a rule, it is not the quality that is determined, but the effectiveness of accounting policies, which are understood differently. The research states that the methods of accounting should be aimed at improving the efficiency of financial and economic activities. At the same time, an effective accounting policy will provide an opportunity to reduce the tax burden, simplify document flows and the order of reflection in the accounting of business transactions, reduce errors in accounting and financial results, increase financial stability (use of accounting methods that increase working capital, optimize the amount of profit and, accordingly, increase the amount of taxes and non-tax payments to the budget, as well as ways to increase profits and improve the financial result). Also, an effective accounting policy is defined as enshrined in the internal documentation of a set of principles, techniques and rules of accounting, which corresponds to the development strategy of the organization and helps to get the maximum effect from the functioning of the accounting system under current legislation. Under the effect it is proposed to understand the achievement of goals and solutions to certain tasks that are set before the accounting policy. Accounting policies should meet such characteristics as rationality (manipulation of accounting data to achieve the objectives of financial performance and reporting without additional costs) and achieve one of four goals: streamlining cash flows, reducing the complexity of accounting, increasing the investment attractiveness of reporting, convergence with International Standards financial statements (IFRS) (Zalyshkina 2006, p. 9).

Since the effect and efficiency, as a rule, is expressed in quantitative terms, to determine the compliance of the established accounting policy with the information needs of sustainable development, it is advisable to use the concept of accounting policy quality. The indicators embodied in the criteria are used to assess the quality of the accounting policy. Based on the analysis and generalization of research by scientists (Artemeva 2013; Zalyshkina 2006), to assess the quality of accounting policies in the management of sustainable development, we highlight the criteria listed in Table 1.

A prerequisite for the formation of a quality accounting policy is the purpose for which it is carried out. Accounting policy is seen, on the one hand, as a process of selecting certain options, on the other hand, as a tool for streamlining, regulating accounting techniques and methods. The choice of certain options and methods of accounting leads to the fact that the same facts of economic life in different organizations can be interpreted in accounting differently and, accordingly, differently affect the balance sheet items.

In determining the quality of accounting policy, it is advisable to use the expert method, which involves assessing the compliance of accounting policies with the criteria on the scale of assessments. The rating scale can be represented by a scoring system or a rating system «excellent», «good», «satisfactory».

To assess the quality of accounting policy, a 10-point system of assessments of compliance of accounting policy elements with certain criteria is proposed (Table 2).

Table 1 Criteria for the quality of accounting policy in the implementation of the principles of sustainable development of the organization

Criteria	Characteristic
1. Compliance with the requirements of legislation in the field of sustainable development and regulation of accounting and reporting	Assessment of the completeness of the reflection of the elements of accounting policy, options for their use and compliance of their use with the requirements of the law (including environmental and social issues)
2. Compliance of the accounting policy with the defined purpose of its formation	Assess the compliance of the accounting policy of the purpose for each task
3. Compliance of the selected elements with the strategic and tactical goals of sustainable development of the organization	Analysis of each element in order to assess the feasibility of its choice in terms of achieving maximum effect in the activities of the organization (maximum positive impact on the economy, environment and the environment)
4. Coverage of methods and ways of accounting for significant environmental and social aspects of activities, as well as information on non-financial indicators	Identification of the most significant environmental and social aspects of the activity and assessment of their compliance with the defined social and environmental policy of the organization; determining the composition of non-financial objects that form the Sustainable Development Report
5. Accounting policy statement (table of contents)	The accounting policy must meet the following requirements: <ul style="list-style-type: none"> – expediency - the absence in the accounting policy of elements under which the legislation is clearly regulated, as well as other redundant information; – detail - a rational detailed approach to the presentation of the accounting procedure or method of reflecting a certain element of accounting policy, based, inter alia, on existing industry regulations; – structure - clarity and logical construction of sections of accounting policy, taking into account the need to separate units in the methodological component, which outlines the financial and non-financial parameters; – proportionality - the optimal ratio between the presentation of essential aspects and elements that are subject to option choice, but is not essential for the organization; – consistency - the absence of elements and their descriptions that contradict each other

Source developed by the authors

Table 2 Scale for assessing the compliance of selected elements of accounting policies with quality criteria

Points	Explanation
10	The item fully meets the defined criteria
9	The item fully meets certain criteria, but there are isolated inaccuracies of wording, which in general do not affect the content of accounting policies
8	The element practically meets the criteria, but the subject of assessment is not sure enough about the correctness of the choice due to objective circumstances beyond the control of the organization
7	An element of accounting policy generally meets the criteria, but subject to a more thorough analysis of the proposed regulatory framework, another element would more accurately reflect the fact of economic life
6	The accounting policy element is chosen formally, without focusing on financial results and stakeholder inquiries, but generally does not distort the content of the statements
5	The element of accounting policy is consistent with the law in terms of its essence, but has the wrong wording, in particular due to legislative and regulatory changes
4	The selected element of the accounting policy significantly affects the results of activities and, accordingly, reduces the objectivity of determining their value
3	The element of the accounting policy is chosen for the purpose of misleading the interested persons concerning formation of the general estimation of activity of the organization
2	The element of accounting policy misleads the management of the organization
1	There is no accounting policy element, but it is implied based on the analysis of other elements (for example, analytical accounts of the 3rd order, etc.)

Source developed by the author

Based on the scores through the application of the expert method, the level of quality of accounting policy (Q) is proposed to be determined by the formula:

$$Q = \frac{P}{10} \times 100$$

Where p is the value of the evaluation by the relevant criterion.

The level of quality of accounting policy is determined by the scale (Table 3).

This valuation technique is applied to the accounting policy of PJSC «Dnieper Metallurgical Plant». PJSC «Dnieper Metallurgical Plant» is one of the largest enterprises of the mining and metallurgical complex of Ukraine, is part of the six leading metallurgical plants in the country in terms of production and sales of metal products (Official site of PJSC Dneprovsky Integrated IronSteel Works 2020). The company actively implements the strategy of sustainable development through the development of environmental measures, social programs and the achievement of planned economic indicators.

The level of compliance of the company's accounting policy with the law was assessed based on the fact that the total number of elements was 50 (according

to the order on accounting policy), of which one element does not meet the legal framework (in the working plan of accounts - outdated names of accounts). This item was awarded 5 points, as the purpose of the account corresponded to the economic content. As a result, the level of efficiency in compliance of accounting policies with the requirements of the legislation will be 99% (Table 4).

The analysis of the compliance of the accounting policy with the defined purpose showed that the purpose and objectives of the accounting policy are not defined in the Order of the enterprise, and therefore it is not possible to assess this criterion for this enterprise.

To analyze the compliance of the selected elements with the tactical and strategic goals of the enterprise, the selected elements are selected, according to which the enterprise is given the right to choose from the proposed options (Table 5).

Two elements of accounting policy according to the developed scale are assigned 7 and 8 points, because these elements, although selected from the point of view

Table 3 The level of quality of accounting policies

Level of efficiency, %	Determining the level of quality of accounting policy
90–100	High level of quality of accounting policy
70–89	Appropriate level of accounting policy quality
60–69	Satisfactory level of accounting policy quality
30–59	Doubtful level of quality of accounting policy
10–29	Critical level of accounting policy quality
0–9	Unsatisfactory level of quality of accounting policy

Source developed by the authors

Table 4 Compliance of accounting policies with legal requirements

Criterion of efficiency	Number of accounting policy elements	Number of elements that meet the requirements of the legislation/points	Number of items that do not meet the legal requirements/points	Number of points	Level of quality, %
Compliance with legal requirements	50	49/490	1/5	495	99
Average value	X	X	X	9,9	99

Source authors' calculations

Table 5 Correspondence of the chosen elements to tactical and strategic purposes

Element of accounting policy	Number of points	Level of quality, %
1. Displays the cost of repairing fixed assets	10	100
2. Valuable features of items that are part of low-value non-current assets	10	100
3. The procedure for determining the useful life of non-current assets	10	100
4. Criteria for deciding on the revaluation of fixed assets	10	100
5. Methods of depreciation of fixed assets	10	100
6. Depreciation methods of other non-current tangible assets	10	100
7. Criteria for deciding on the revaluation of intangible assets	10	100
8. Methods of amortization of intangible assets	10	100
9. Choice of methods for estimating inventory disposal	10	100
10. The order of accounting and distribution of transport and procurement costs	10	100
11. List and composition of articles for calculating the production cost of products (works, services)	10	100
12. List and composition of items of variable and fixed overhead costs and determining the basis for the distribution of fixed overhead costs	10	100
13. The procedure for assessing the degree of completion of operations for the provision of services	10	100
14. The method of calculating the amount of the provision for doubtful debts	8	80
15. Classification of receivables by maturity	7	70
16. List of collateral for future expenses and payments	10	100
17. Determination of exchange rate differences on the date of the transaction	10	100
18. Recurrence of deferred tax assets and deferred tax liabilities in the financial statements	10	100
19. Determining the threshold of materiality of information	10	100
20. The duration of the operating cycle	10	100
Average value	9,75	97,5

Source authors' calculations

of regulatory correctness, but an in-depth analysis of, for example, receivables by maturity indicates the need for more detailed grouping (7 points), which accordingly affects certain coefficients of doubt, which when changing the grouping of overdue receivables must also change (8 points).

The evaluation according to the fourth criterion (coverage of methods and ways of accounting for significant environmental and social aspects of activities, as well as information on non-financial objects) involves the selection of such aspects in the accounting policy. Analysis of the content of the company's accounting policy showed that aspects of environmental and social nature (including the list of relevant costs), and especially the list of non-financial objects, it is not covered, and therefore the accounting policy is unsatisfactory.

The results of assessing the quality of the content of accounting policies are shown in Table 6.

The overall level of quality of accounting policy in general is presented in Table 7.

Despite the almost complete compliance of the accounting policy of the enterprise with the legislation and the expediency of the selected options and methods of accounting, the quality of the accounting policy is at the level of 52.1%, which on the quality scale is defined as a questionable level. This indicates that the current accounting policy does not provide the formation of the necessary information for effective management of sustainable development of the enterprise, which requires the development of measures to improve the quality of accounting policies and, consequently, the quality of management information. Management should clearly define the purpose and objectives of the accounting policy, accordingly, based on this, review the set of elements and options for accounting for them. Since the goal will be determined, including the implementation of the principles of sustainable development, it is necessary to detail the list of environmental and social assets, liabilities, income and expenses of the enterprise. This will affect the criterion of quality of the content of the order on accounting policy, the value of which is 64%, mainly due to uncertainty of the purpose, objectives of accounting policy, environmental and social indicators and non-financial indicators required for reporting on sustainable development.

Addressing the shortcomings identified in the process of assessing the quality of accounting policies will ensure a high level of its content, which will take into account the need and ability to fully reflect all processes occurring in the economic, environmental and social spheres of the organization.

Table 6 Assessment of the quality of the content (presentation) of the accounting policy of the enterprise

Element of accounting policy	Number of points	Level of quality, %	Disadvantages
1. Structured	8	80	Insufficiently structured sections on income, expenses, financial results, taxation, lack of separate sections. There are no sections on the order of accounting for these objects of environmental and social nature
2. Expediency	5	50	The order on accounting policy contains provisions that are clearly defined by law and do not provide for the right to choose, and therefore they clutter the content of the document (accounting principles, the procedure for classifying objects as intangible assets, etc.)
3. Detail	4	40	The order does not detail income and expenses in terms of environmental and social activities, as well as information on the composition of non-financial facilities
4. Consistency	10	100	The order on accounting policy does not contain contradictory provisions
5. Proportionality	5	50	The information provided in the order is presented taking into account its importance, but the absence of such important aspects as the definition of goals and objectives reduces the value of this criterion
Average value	6,4	64	X

Source authors' calculations

Table 7 The level of quality of the accounting policy of the enterprise

Criterion	Number of points	Level of quality, %	Determining the level of quality
1. Compliance with legal requirements	9,9	99	High
2. Compliance of accounting policies with the defined purpose of its formation	0	0	Unsatisfactory
3. Compliance of the selected elements with the tactical and strategic goals of the enterprise	9,75	97,5	High
4. Coverage of methods and ways of accounting for significant aspects of social and environmental activities, as well as information on non-financial objects	0	0	Unsatisfactory
5. Qualitative content (statement of accounting policy)	6,4	64	Satisfactory
Total (average)	5,21	52,1	Questionable

Source authors' calculations

6 Conclusions

Coverage of accounting policies of economic, environmental and social aspects of activities as components of sustainable development will ensure the formation of a single information space for management decisions by the management of the organization and other stakeholders. Improving the methodological, organizational and technical principles of building the accounting policy of the organization, aimed at meeting the information needs of sustainable development management, is possible in the process of implementing a purposeful national policy in the field of accounting.

Using the developed approach to determining the level of quality of accounting policy, each organization will have a reasonable opportunity to change its accounting policy, focusing on the formation of information support of environmental and social aspects of activities. The proposed method of assessing the quality of accounting policies will contribute to the formation of complete, reliable and objective information for the development and implementation of sustainable development strategies by organizations in modern conditions.

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The Diffused Hotel as an Innovative Form of Tourism Development (*Case of the Sub-basin of the Gjanica River. Fier Region, Albania*)



Esmeralda Laci, Sonila Papathimiu , and Sabri Laci

Abstract Tourists flow in Fier region is mainly from other regions of Albania, but in recent years there is an increase of tourists coming from Kosovo, Macedonia, Montenegro, Italy, France, etc. Most of them are one day tourists with highest flow in summer season aiming the seacoast. In 2002, the number of tourists registered in the sub-basin of Gjanica river was 52,939 including here 5,008 on the beaches of the region and 47,931 in the Divjaka National Park. In 2015 the number of tourists in the region was 20% higher and in the list of destinations was added also the archaeological park of Apollonia.

Considering the natural and cultural resources of the Gjanica river sub-basin, this article tries to analyze the potentials and opportunities to implement the Diffused Hotel model in the study area with the aim of increasing its attractions and to extend tourists stay for more than one night. The objective of the study is therefore, from one side to give an interpretative context of the evolutionary dynamics of innovation in the tourism sector by focusing on the evolutionary perspective, and on the other side to analyze the synergies between the hotels spread in the study area.

To enhance local assets, the article analyzes the possibility of using an open source WebGIS application for the dissemination of online cartography relating to routes dedicated to alternative tourism 2.0.

Keywords Sub-basin · Rural tourism · Diffused Hotel · Alternative tourism 2.0 · WebGIS · Mobile app

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1 Introduction

The study starts from the simple observation, of which tourism scholars are aware, that the sustainable development of tourism sector and territories has been accompanied by enormous ambiguity. It is no coincidence that lately the issue of responsibility has been at the center of a multidisciplinary debate in which the entire international community participates, and which demonstrates the evolution in the competitive dynamics at a global level. The idea of creating a model of diffused hotels in the sub-basin of the Gjanica river is the result of a process started after various reflections.

The first reflection concerns the affirmation that the development of tourism in the last years represents a tourism that has shown little interest in the uniqueness of the territory and the local population, but which nowadays is rediscovering important values. Therefore, arises the desire to promote and develop a tourism that is attentive to the territory and local culture, knows how to develop continuously, does not damage the territory in its uniqueness and responds to the needs of tourists. The ambitious goal is, therefore, to stimulate alternative tourism 2.0, a solution that is applicable not only to city centers, but also to peripheral areas (Paniccia et al. 2015).

Based on these premises, this paper is focused on the relationship between innovative companies and the territory of the sub-basin in which they are established. It has two main objectives: First, to offer an interpretative context for a better understanding and explanation of the main factors determining the success of the innovative forms of tourism, based on the sustainable principles which have to do with the role played by the reciprocal relations between tourism business, territory and tourists. Second, to support the state of art, there are proposed three diffused hotels located in the sub-basin of Gjanica river, with particular interest for tourists in order to maintain a favorable and beneficial competitive position over time.

The article analyzes the literature on the phenomenon of Diffused Hotels, Tourism and web GIS and emphasizes the relationship between two basic visions of the relationship: enterprise-environment, namely the systemic one (Golinelli 2000) and that of evolutionary adaptation (Cafferata 2014b). Then it discusses the results of the empirical investigation.

The survey with the local residents was used to prove the synergies created between the companies and the territories of the sub-basin, therefore the amount in which their interdependencies and reciprocal relationships have affected the processes of enhancement of the local heritage.

2 Materials and Methods

The literature on Diffused Hotels (DH) phenomenon is recent and scarce, but evolving, due to the relatively young age of the phenomenon itself that emerged in 1995 in Sardinia with the birth of the first Diffused Hotel in the historic village of Bosa, Italy, which has registered a progressive growth over the past fifteen years. The

idea from which it originates the “diffused hospitality”, dates back to the beginning of the 1980s, after the Friuli earthquake, for the tourist recovery of houses and villages in Carnia within a working group that had the objective of “touristically” recovering houses and villages renovated following the Friuli earthquake in the 1970s. The diffused hospitality model therefore has its roots in the specific Italian reality (Dall’ Ara 2002).

A peculiar feature of the Diffused Hotel is the dislocation of various accommodation properties in the same village. The adjective “diffused” or “scattered” therefore denotes a horizontal, rather than vertical structure of the traditional hotels, which often resemble an apartment building (Barbi 2007). Although this is an essentially Italian experience, in the same period the phenomenon of bed and breakfast grew in the United States: some operators located in adjacent buildings develop centralized catering services according to the inn cluster approach (Dall’ Ara 2002).

This phenomenon, unique in the world, seems to attract more and more. Indeed, the model of the Diffused Hotel exerts a certain attraction because, intersecting with the themes of creativity, innovation, territory, tourism, and sustainability, it evokes changes in the development model, not to have the attention only on the global trends of tourism demand, but becoming more and more expert, demanding and attentive to the quality of the tourist experience.

However, the use of territory for tourist activities often involves an intensive exploitation of the resources and the ecosystem (Piersanti 2013). Particularly, in the last five years, hand in hand with the not negligible development in quantity and quality of the phenomenon (Panicca et al. 2013), the topic has been addressed in several academic and extra-academic contributions, with the common aim of understanding the characteristics of this new hospitality formula/model. In the international literature on this topic already exist (Silvestrelli 2012) the first contributions of Italian scholars (Panicca et al. 2013), (Panicca 2010), (Confalonieri 2011).

Concerning the studies on the Diffused Hotels, the situation in Albania is quite different, as well as the implementation of this hospitality model. The reality of Diffused Hotels in Albania is an expression of potential that is only partially expressed. On the side of empirical research, there are still ample spaces for in-depth analysis on the managerial, organizational and entrepreneurial level. From the theoretical side, what still seems to be missing is a conceptual model that allows us to grasp and explain the main determinants that shape the dynamics of innovation.

The empirical investigation concerned three structures proposed for Diffused Hotels located in the area of the sub-basin of Gjanica river, of particular interest within the Fier region (precisely in the three municipalities chosen for the administration of the questionnaires such as: Mbrostar, Qender and Portez), with the aim of identifying their potentials for tourism development, deemed essential to maintain a favorable competitive position over time. Regarding the theoretical context, the aim of this study was not so much to validate the hypotheses underlying it, but rather at identifying in the case study the appropriate housing structures to implement the concepts taken as a reference and already consolidated in the literature. The study, in particular, can contribute in an original way to the necessary reading and interpretation of innovation models in the tourism sector.

The definition of a research methodology was quite challenging, due to the complexity of the object of study. In general, the following working scheme has been followed, even if not all phases have been formally expressed. Summarizing only the operational phases, it is possible to schematize them in this way: (a) cognitive phase, data collection; (b) selection of case studies; (c) drafting of a questionnaire for the local community and its administration; (d) data processing and evaluation of results.

The methodology adopted for the research was that of the case study, following a qualitative approach (Yin 2009) capable of privileging interaction with the subjects studied and useful comparisons, as well as raising the rigor of the analysis (Eisenhardt 1989), (Eisenhardt 2002).

It was decided to use observation as the main collection technique, firstly because only a prolonged physical presence in the field and an active participation in daily activities could allow us to understand exactly how Diffused Hotels concept is translated and re-interpreted locally, to understand how and why the practices of the model were spread and perceived by the population of the sub-basin of the Gjanica River.

Secondly, only through a constant presence in the field it would have been possible to analyze both if and how the support mechanisms for action practices relating to Diffused Hotels have been developed, and if they have been accepted, absorbed and used by stakeholders. The use of a case study for these reasons could have been the most appropriate choice, since, as had already been suggested (Yin 1994), this is the preferred research strategy if you want to understand “how and why” certain phenomena are developed and evolve within certain contexts.

The chosen case foresees a single-case-study, carried out through multiple data collection techniques represented by participant observation, documents and finally by in-depth interviews (Cardano 2003) in order to better “absorb” and describe in detail the “empirical evidence” present in the field of investigation (Eisenhardt 2007). The investigation tools used for the case study were participant observation, analysis of documents and interviews. The most used technique, despite having used several, was certainly participant observation to have a better knowledge of the territory and to ease the distribution and collection of questionnaires.

In addition to the observation, there were used in-depth interviews with the population, to have a clearer view on some specific issues relating to the implementation of Diffused Hotels in the study area. The survey through the questionnaires to the local population was used as the data collection techniques for the study of the sub-basin of the Gjanica river which is today a transit tourist destination object of our case study. The survey was conducted in the summer using a quantitative method through the compilation of questionnaires.

The survey was made possible thanks to the collaboration with some entities present in the area. The total sample consists of 87 male and female subjects, from which 75 were useful for the purpose of data processing and the rest were considered invalid. The questionnaires were distributed in mid-June and the collected data were encoded and reprocessed with the following different software: ArcGis Software, AutoCad GeoServer and Exel.

– *Tourism in Albania (a brief parenthesis to convey the idea of tourist movements in the country).*

Albania is becoming a tourist destination. This is the conclusion of the Albanian authorities and tourism marketing experts. Once being left out the black chronicle of the European media and the negative stereotypes are consigned to the past, Albania is an unknown at the gates of the European Union, which many like to call “the last mystery” of this part of the world. Summer 2016 ended with a positive balance in the tourism sector, considerably higher than in previous years.

Among the favorite destinations of Albanian tourism in the first place are nature and the sea, and for weekend vacationers also the cities of art. The most popular beaches were, as usual, those of Durrës and the whole southern coast, from Vlorë to Saranda. Among the cities of art, the most visited was Kruja, Berat, Gjirokastër, Butrint (Saranda) and Apollonia (in Fier). Numerous foreign tourists have included a short Albanian itinerary during their holidays in Greece or Montenegro.

According to official data, Albania was visited in the period June–August 2015 by one and a half million people, of which 942 thousand of Albanian nationality and the rest of other countries. Among the foreigners there is a large range of nationalities, especially North and Eastern Europeans. We need to emphasize that the very optimistic figure of tourists above mentioned risks being confused due to those Albanians who, now citizens of the adopted states, come to Albania for routine holidays in their own country. It is also necessary to consider the imprecision of the Albanian statistics, a real Achilles heel of the country, which indiscriminately calculate among the tourists also the Albanians who entered or left the country in this period for various reasons and who also spend the rest of the year in Albania. At the same time, it is not possible to declare how much tourism in recent months has been worth to the Albanian coffers, much less to specify how much has been spent per day by certain categories of tourists. However, despite the criticisms that tourism experts have made for the lack of a statistical classification, the fact remains that tourism in Albania marks a significant growth compared to the past.

The novelty of 2015 was the fact that we managed to go beyond patriotic tourism from Kosovo and the Albanian-speaking towns of Macedonia. For the first time, Albania was included in the holiday offers of Serbian tourist agencies, while those most often encountered on the beaches of southern Albania, and especially in Vlorë and its surroundings, were Slavic Macedonians.

Among the causes of the remarkable growth of tourism in Albania there are of course the considerably improved infrastructures, the recession of recent years, and the very high prices of neighboring countries which have made the Albanian tourist offer, decidedly low cost, more attractive. According to Albanian experts, it was also an advantage that in recent years Albania has been talked about a lot in the international media the curiosity for the “Land of Eagles”.

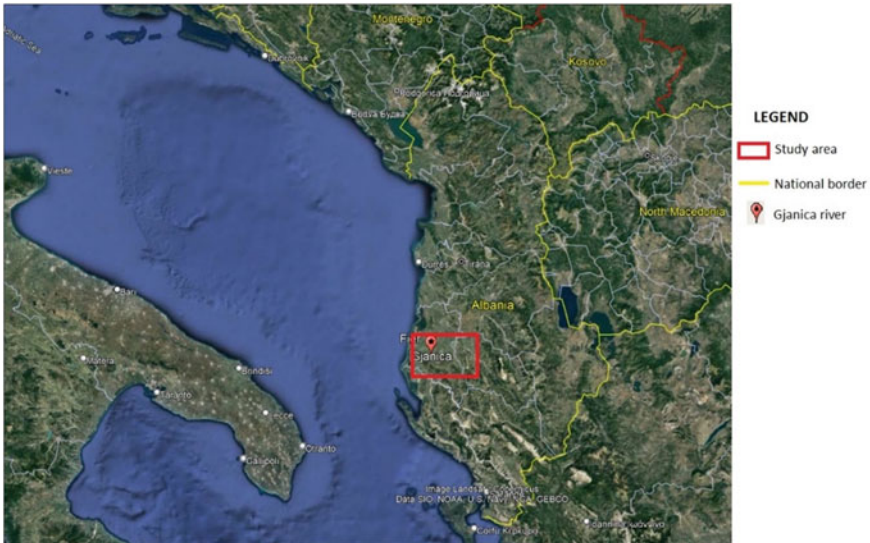
Albania struggles to get rid of the consequences of its long isolation and to build a tourist culture, left entirely in private hands for now. But according to the evaluation of the World Tourism Organization, the country is destined to improve rapidly given

its enormous potential which, if combined with adequate policies, will place the country in the ranks of Mediterranean “tourist” neighbors.

3 Sub-basin of the Gjanica River: A Proposal for the Diffused Hotel

The sub-basin of Gjanica river is located in Fier Region, located in the southwestern part of Albania and part of the physical-geographical unit of the western plain. It shares borders with the regions of Tirana (north), Elbasan (north-east), Berat (east), Gjirokastra (south-east), Vlora (south) and to the west by a 75 km coastline of the Adriatic Sea. The northern administrative border of Fier region is Shkumbini river valley, which runs through it for 32 km and the southern one by Vjosa river valley, which crosses it for 76 km. The region’s position is very favorable from a geographical point of view, with obvious consequences in the economic and social sphere. Its territory is generally flat with 75% of Myzeqe plain, the most important in Albania and the other 25% is located in the hilly areas of Mallakastër and Darsisë. The entire territory of the region is crossed by the two main rivers of Albania: Vjosa and Seman with its tributary Gjanica.

From a tourist point of view, Fier is known for its remarkable archaeological site of Apollonia and the monastery of Ardenica in Kolonje (Map 1).



Map 1 Geographic location of the study area in Albania

In this regard, Gjanica river, more than any other territorial element, plays a fundamental role in the tourism development processes thanks to the relationships it fosters through:

- Linear connections: presenting themselves as an element of linear connections, of crossing, of communication.
- Transversal connections: involving the territory on several levels and becoming the engine of different actions such as: projects, redevelopment on a territorial scale, urban landscape; use of the territory by water and by land, knowledge of the context in an eco-sustainable way.
- Network connections: thanks to the creation of a dense network of territorial connections, but also interrelationships between the different components of the territory, at different scales, between the different sectors involved.

Summarizing the indicators on the natural resources of the Gjanica territorial area, it can be said with certainty that the Fier region fully meets all the requirements to be considered an area of rich natural potential and promising for the development of different types of tourism. Some of the potentially tourist resources are the beaches along the coast of the region: Divjakë, Bedat, Seman, Hidrovor, Pish-Poro, etc. The coastal areas are rich in biodiversity and are characterized by interesting natural landscapes which together with the river mouths of Vjosa, Seman and Shkumbin offer huge possibilities for the development of sporting and hunting activities. Divjaka Natural Park is one of the most important ecosystems in the country and is located 40 km from the city of Lushnje and 5 km from Divjaka. It has an area of 1,250 hectares and Karavasta lagoon is the first Ramsar wetland for Albania, since 1994. Karavasta lagoon is the most western site for pelecenus ciprus colony, which here make up about 5% of the world population.

Historic attractions include traces of ancient civilizations in the Apollonia Archaeological Park, 12 km from Fier; in Bylis on the hills of Mallakstra from where you can admire the valley of Vjosa river; 40 km from the city of Fier, where there is a series of medieval monasteries, especially that of Ardenica; also interesting is the house museum where the Congress of Lushnje was held, which conceived the modern Albanian state. The traditions, the villager's life, especially the festivals, ceremonies, customs and popular music, are an important offer for cultural tourism.

The tourist infrastructure in the Fier region is currently limited with respect to the latest demands from the sector and the potential that the area offers. The problem is even more evident if we compare the data of this area with those of the other regions in Albania which, due to geographical similarity and the possibility of offering differentiated tourism products, represent the first competitors. In 2004 the Fier region had 7 hotel facilities available, with 198 rooms and 367 beds, while in 2014 the number of hotels increased by 11, with 82 rooms and 134 more beds.

Tourists in the Fier region come from other regions of Albania, from Kosovo, Macedonia, Montenegro, Italy, France, etc. and they are mainly on transit. Most of the tourists visit the beaches during the summer. In 2004, 52,939 tourists were registered in the Fier region, including 5,008 on the beaches of the region and 47,931 in Divjake-Karavasta National Park. According to data collected by the Tourism

Table 1 Analyzes of the strengths and weaknesses of the study area

Strengths	Weaknesses
Optimal climate, long season (March to October)	Need to increase the number of beds in accommodation facilities
Different types of tourism	Lack of adequate facilities for the reception of tourists (absence of youth hostels and adequate facilities for the reception of handicapped and disabled people)
Favorable geographical position	Strong seasonality (June–August)
Popular traditions and rich folklore	Inefficient internal public transport
Presence of numerous places of historical and artistic interest	Lack of tourism infrastructure
Landscape-naturalistic areas	Poor presence of assistance and advice to tourists
Local food and wine based on the use of typical local products	Lack of cooperation between local operators
Availability in the care of the tourist by the population	Mediocre connections network by air, rail and road

Development Committee in 2010, the average expenses of a foreign tourist were USD 849 without travel expenses. Tourists from Kosovo and Macedonia spent up to USD 274, while tourists from other regions of Albania spent USD 177. The interest of local companies in the tourism sector is growing, but most of the investments are oriented towards the construction of bars/restaurants that also generate income throughout the year (Table 1).

4 Results

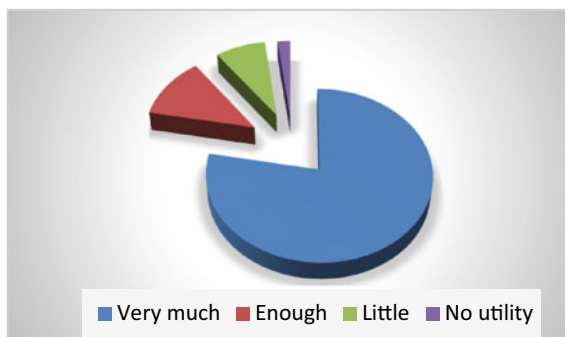
The construction of the Diffused Hotel falls within the framework of the eligible actions provided for in the new Law for Tourism in Albania and is regulated by national legislation as well as by regional legislation on tourist accommodation. The research carried out in the sub-basin of the Gjanica river has identified some cases of housing structures that can be proposed to be transformed into Diffused Hotels. The peculiar characteristics of the area examined mainly concern their geographical position and the demographic trend of a negative sign in recent decades which has led to a progressive loss of population with the risk of its total abandonment over the next decade, due to a considerable lack of jobs. The second feature consists in the location of the structures themselves. In fact, they are located in a hilly area along the Gjanica river, a possible tourist destination. The possibility of combining points of tourist interest with traditions, relaxation, quiet times, etc., represents a considerable added value in today's vacation idea to enhance the tourist potential of the Gjanica river sub-basin.

The reasons why this rural hamlet is particularly suitable for the design of this accommodation facility are the following:

- The sub-basin of the Gjanica river presents a rich territory from a historical, archaeological and environmental point of view.
- The geographical position is optimal both from the landscape point of view and in terms of accessibility, at the same time there is the perception of being “out of the chaotic world and time”.
- The inhabitants proved to be extremely helpful, interested in the project and ready to collaborate.
- The rural centers chosen for the implementation of the Diffused Hotel model are subject to a continuous migration of its residents to places that offer greater job opportunities; many buildings have been abandoned, without any positive impact on the territory.

The qualitative research was carried out through the statistical analysis of the data collected through the administration of questionnaires dedicated to understanding any needs or problems encountered by the local population regarding the introduction of the Diffused hotel model in the sub-basin of the Gjanica river. All the questions in this area provide for a distribution of value through a Lickert scale (nothing, a little, enough, a lot). The sample is made up of 59% of males and 41% of females, from which 36% are included in the age range from 18 to 39 years, and 53% in the age range from 40 to 55 years, 11% of the sample is included in that age group that goes over 55 years old. The education level of respondents was: 52% university graduates, 27% secondary school, 10% of primary school and 11% of post-graduates. Related to the geographical distribution of the respondent, as we used in-depth interviews and questionnaires in the study area, 98.5% of them were from the Fier region and 1.1% from other regions. On an administrative scale, the data show the following distribution: 73.8% from Mbrostar, 14.7% from Qender, 11.1% from Portez. The following analyze highlights how much the local population deems the Diffused Hotel model useful by using the “much” or “enough” options. The processing of the results shows that 78% of the sample is very optimistic about how this new

Graphic 1 Utility of Diffused Hotel (DH) model



hospitality model will be useful for the area, 12% enough, 8% little and only 2% are not optimistic at all (Graphic 1).

When asked about job opportunities of the DH model, the sample responses are distributed as follows: a lot (63%), enough (27%), a little (9%) and nothing (1%).

The interviewees generally express little satisfaction with the current reception. Trust is low in stakeholders, almost none in public administrations and political parties.

To the question “Impact of the Diffused Hotels in other activities” it emerges that the sense of welcome according to the Diffused Hotel model is more expressed, as 67% of the sample considers this model to be “very” impactful and 33% “fairly” impactful in the other activities, a fact that is confirmed several times in the course of the research.

To the question “Role of widespread tourism in the tourism economy”, the data that emerged from the analysis show a clear rejection and distinction between the answers “zero” and “little” impact and proximity to the answers “a lot” and “enough” in the rate at 81%.

The answers chosen by the sample to enhance local resources from a tourism perspective are a lot (61%), enough (29%), little (10%) and nothing (0%). The first two options highlight the community’s need to express welcome through new innovative models (Table 2).

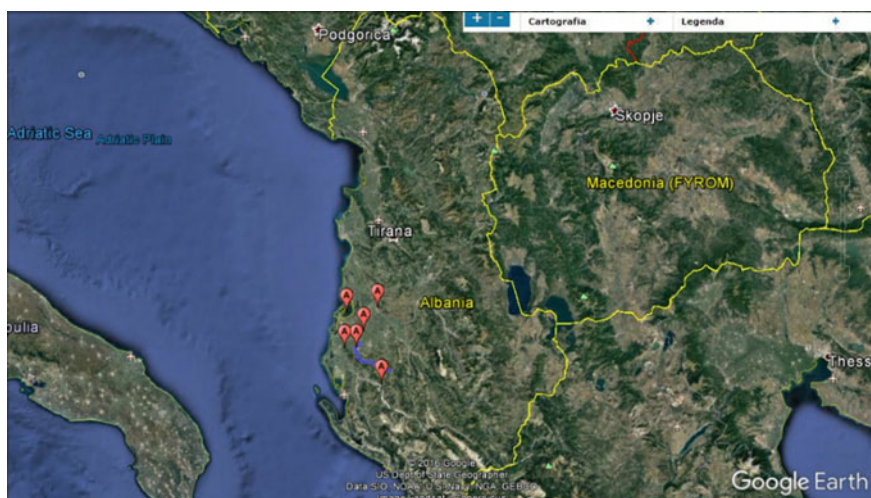
Finally, respondents were asked to express a free opinion on the activity of this initiative. 79% of the sample chose the option “these initiatives are welcomed”, 18% considered the proposed model stimulating, also a sign of the need for innovation for a new tourist enhancement of the area.

To promote widespread tourism in the sub-basin area, the article proposes alternative tourism itineraries 2.0. The primary objective is to make the cartography clear and, as already mentioned, the graphic information considered non-basic has been minimized. Precisely for this reason, already at the first access you immediately notice how only a few “objects” permanently overlap on the map: At the top right, two drop-down menus, one called “Cartography”, the other “Legend”; at the bottom center, finally, a retractable window with a brief description of the project and an indication of the contact person.

Table 2 Potential available in the study area

Type	Number
Houses available to participate in the AD project	3
Rooms available to participate in the AD project	14
Equal to approximately beds	56
Family farms available to participate in the AD project	2
Commercial activities available to participate in the AD project	3
Other craft activities	2

On the map there are red “drop” icons, similar to the placeholders present in the Google Earth environment and indicating the different tourist itineraries. The user selects one, a new window opens that repeats the stylistic and usability choices adopted on the main page of the Web. This ensures, at the same time, the uniformity of the site layout and transparency for the visitor. Once they understand how a page works, the visitor is able to easily repeat the same operations on all the layers they want to consider. Navigating the site, in addition to being simple, should also be enjoyable. It was therefore considered appropriate to offer the user the opportunity to choose, from a number of available options, the cartography that he considers clearer to associate with the tourist itinerary he is visiting. Therefore, in the design phase, the background cartographic bases were chosen to be used among the cartographic portals present online such as, for example: OpenStreetMap, Google Maps or Google Satellite, Bing Maps or Bing Satellite, Yahoo Maps, etc., to understand which guaranteed greater readability.

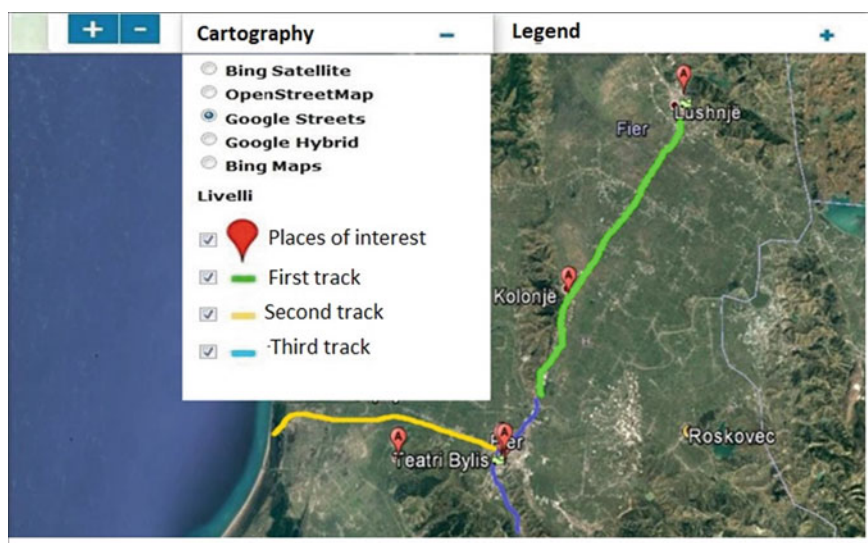


The image of the page shows, for example, how the graphic appearance of the same area can change. Specifically, the center of the city of Fier, the center of the region, is examined with four different display modes (Google Map, Google Hybrid, OpenStreetMap and Bing Satellite). From this comparison it is immediately evident how important it is to have a cartographic base with geographic information clearly identifiable and legible.

The navigation within the page dedicated to the single itinerary takes place in a similar way to what has already been illustrated for the main page. From the “Cartography” menu you can select the one that will be the background and/or the different layers that make up the path. The ability to choose the cartography intends to help the user to orient himself better in space, using the tool he deems most appropriate.

The increasing number of users of digital maps with portable IT equipment, such as smartphones or tablets, especially in the tourism sector, has led to the proposal of a mobile-friendly version of the “Itineraries for alternative tourism” website. In fact, the problem generally encountered by the user who connects with his or her portable device to the website, using any browser, has led us, therefore, to “revolutionize” the project both in terms of graphic dimensions and in terms of access to the contents. Using the Web framework³ of jQuery⁴ mobile, a reduced version of the site in question was created, while maintaining the underlying structure (with the relative .html, .css, .txt and JavaScript files), typical of OpenLayers (Map 2).

The list of points of interest is accompanied, if present, by the photo of the place. A search bar has also been inserted at the top of the list, to facilitate navigation between the points. Given the difficulty of some mobile devices to read, pdf files were chosen. The description pages of the individual points of interest include a photo, a short explanatory text and, for some routes, even a button in the title bar (a blue icon representing two photos). This button opens another page with additional photos and textual insights into the points in question, as shown in the Map 3. The app will add information, photos and descriptions related to the proposed Diffused Hotel.



Map 2 Detail of the open drop-down menus: “Cartography” menu *Source* Author’s elaboration



Map 3 Illustration on the map of the GjanicaGisLab app

5 Discussion and Conclusions

This article discusses for the first time the implementation of the Diffused Hotel model in Albania and the suitable forms of tourism in a pilot area, the sub-basin of the Gjanica river in the Fier region. From the fact-finding survey and monitoring activity carried out on the case study, aimed at an initial survey of the effects that a CEO produces on the revitalization process, a good reliability of the indicators used emerges which, albeit in different contexts and in the presence of regulations uneven, they helped to grasp the important aspects. The results confirm the acceptance by the local population of this receptive model in the area of the sub-basin of the Gjanica river, highlighting, among other things, further potentials linked above all to the environmental heritage. In addition, the contribution presented three software applications for the dissemination of tourist itineraries on a regional and sub-basin scale. As mentioned, the tourism referred to is less linked to “traditional” flows, characterized by high numbers of visitors and a significant impact on the territory. Instead, we wanted to build an instrument for the promotion of less known areas, but certainly equally pleasant from a naturalistic and/or cultural point of view, for a more conscious tourism with a less “consumerist” approach. The dissemination tool used was that of the Web and mobile phone.

Paradoxically, therefore, in the lesser known, more marginal areas and characterized by greater digital divide, it is this innovative and widespread technology that is the tool with which to promote the territory (Di Somma 2013; Mauro 2013). From a technical point of view, two of the software applications created (Web and mobile) use free software and development platforms, while the third (the iOS App) uses the

Apple circuit. The user can choose between web or mobile consultation, based on the situations in which they find themselves and/or their specific needs. If the first, in fact, is ideal for study or research, the second is useful for a purely touristic reading of the case studies. The convenience of a mobile device makes the application accessible wherever there is a good “data connection”.

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Exploring the Financial System of Madrasas in Gujarat with Focus on Sources of Funds and Its Utilizations



Ibadurrehman Patel  and Rusni Hassan 

Abstract The Main focus of this paper is to explore the financial system of Islamic educational institutions (Madrasas) of Gujarat specially where the income of these institutions comes from and how this fund is utilized. Madrasas are the main providers of Islamic education in India. From the conquest of India by Muslims majority of Islamic teachings is completely free till now because children from very low-income families almost exclusively populate madrassas. Unfortunately, since the British control, the Madrasas' financial system has been completely overlooked, and both the number of donors of waqf land and the number of waqf properties have been steadily diminishing, though in some states like Assam, Bihar, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, and West Bengal few Madrasas receive financial aid from the government. This paper tries to explore the income and expenditure of the Madrasas in Gujarat state where Madrasas does not get any financial help. This study adopts qualitative research which includes annual audit reports of these institutions. It also gathers information from library and electronic resources. This research shows that Madrasas in Gujarat are more dependent on public funding in terms of Zakat, Sadaqah, Fitra, Fidyah, Lillah (general donation), while wages, electricity, repairing, food, gift, program and exam, collection, travel, and hospitality of the guest are the main expenses associated to operate the Madrasas. This is one of the early studies that give analysis on the financial system of Islamic educational institutions in Gujarat.

Keywords Islamic Educational Institution (Madrasa) · Financial system · Income · Expenditure · Gujarat (India)

1 Introduction

As a vast country with its demography and dense population, India has struggled with the education index among the common population. India is a country with 1.38B people of religious, ethnic, and linguistic diversity, of which an estimated

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195 M or 14.2% of the population is Muslim (Muslim Population by Country 2021), most of whom identify as Sunni, which constitutes the world's third-largest Muslim population in the world after Indonesia and Pakistan, by far the largest minority group. According to the census, the 2011 literacy rate among Indian Muslims is 57.3%, far behind the national average of 74.4% (Ministry of Home Affairs 2011).

Anyhow, Islamic educational institutions (Madrasas) try to give education to Muslim children, Madrasa education in India stretches back to the twelfth century when Muslims conquered India. From that time forward, Waqf sponsored most of the Islamic education, which was completely free. Unfortunately, since the British control, the madrasah education system has been completely overlooked, and both the number of donors of waqf land and the number of waqf properties have been steadily diminishing. Nevertheless, according to (Qasmi 2005) currently, educational institutions in India, known as Madrasas, fall into two categories as per their financial backup: In several states, including Assam, Bihar, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, and West Bengal, several Madrasas are associated with state governments. Even though they are small, these Madrasas receive salaries and funding from their respective governments. Again, there are four types of community-based Traditional Islamic educational institutions: (1) Maktab, (2) Darul Quran, (3) Madrasa, and (4) Jamia, which correlate to schools, high schools, colleges, and universities in the English language. All these four forms of Islamic educational establishments are collectively referred to as Madrasas by the general public. However, our focus here is on the second category, which includes Madrasa and Jamiah, supported and run via donations such as Zakat, Sadaqah, and regular contributions from the general public. Although no regular census of the types mentioned above of madrasas has ever been taken, government sources estimate that there are approximately 1,00,000 such institutions in India (Basheer 2016). However, according to (Nair 2009) overall, there are 1825 madrasas in Gujarat, of which 63 are in the category of Madrasa and Jamiah (Kapodravi 2015).

However, (Sachar 2006) makes a critical observation validating the view that children from very low-income families now almost exclusively populate madrasahs. Therefore, these Madrasas must rely on either partial government funds or public funds in terms of Zakat, Sadaqah, Fitra and general donation. Madrasas in Gujarat state do not have any government-sponsored Madrasa education board like Assam, Bihar, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, and West Bengal (Ali 2015). Therefore, they are fully dependent on the well-wisher's fund. This study, hence, aims to identify the sources of funds and its utilization of Madrasas in Gujarat.

There is literature on protagonists of educational system (Dars-e-Nizami) the famous curriculum of Madrasas, as well as how the courses taught at Arabic Madrasas meet the needs of the students, reformation of Madrasa curriculum, interactions between the Indian state and Islamic madrasas, and their historical background in India, However, no particular research has been found on Madrasa in Gujarat, especially their financial aspects like sources of funds, its utilization and how it can be managed effectively. This is one of the early studies that give analysis on the financial system of Islamic educational institutions in Gujarat. Thus, this research will provide

a way forward for the further research in the area of financial system of Madrasas in Gujarat.

2 Literature Review

2.1 *Islamic Educational Institutions (Madrasa)*

Madrasa is an Arabic term, meaning a place for Dars literally, that is to say, teaching. Public schools and educational institutions in Islamic countries are known as Madrasa. In Encyclopedia of Islam, (Esposito 1995) described that Madrasa is a learning institution, in which theological studies about Islam, including philosophy and Islamic literature, are being taught. 'Madrasas were initially distinguished as learning institutions that taught Quran only. Nevertheless, many Western observers subsequently used this term to draw attention to all schools that promote an Islamic curriculum, rather than primary, secondary, or advanced. (Bergen and Pandey 2006) reported that Madrasas differ from country to country or even from city to city. They may be operated on a daily basis or as a boarding school or a school with a general curriculum, or as a strictly religious school linked to a mosque. Madrasa refers to an educational institution in several countries, including Egypt and Lebanon. However, in India, Pakistan, and Bangladesh, Madrasa frequently refers to Islamic religious schools. According to (Winkelmann 2005) this Islamic educational institution, therefore, aims to educate students so that they can pursue the path that the Quran and Shariah have prescribed and spread Allah's wisdom and message to humanity for the benefit of their physical, intellectual, and spiritual well-being. However, (Hasan 2009) claims that the main purpose of these institutions is to establish graduates such as those from modern schools, except that they are more familiar with Islam. Historically, Madrasas have been a learning hub in the Muslim world, and they remain so until today (Ellis 2007). The history of the Madrasa education system began from the Masjid al Nabawi (Prophet's Masjid). There was a platform called Al-Suffa where the prophet (PBUH) himself used to teach his companions; later, they were known as Ashab-e-Suffa. The Companions and Ulama of Islam followed the same track, and up to the ninth century, there is no evidence of separate building centres for students (Mubarkpuri 2000). It is somehow difficult to point out with certainty when and where the first separate madrasa was built. According to (Mubarkpuri 2000) the first Madrasa, like that of the present time, was founded in Nishapur by Shafai Ulama. However, (Al-Faruque 1987) stated that the minister Nizam ul Mulk Tusi is the pioneer in this field, and he established the first Madrasa in 1062 in Baghdad.

2.2 *Evolution and Growth of Islamic Educational Institutions (Madrasa) in India, Including Gujarat*

Madrasas were founded in India when the Muslim leaders arrived at the sub-continent. These institutions were created by the rulers and nobles of the state or were the result of the collective effort of the community. It is assumed that they were discovered in the area of Sindh and Multan first (Arshad 2005). According to (Saklain 1993) after the conquest of the northern part of the Sub-Continent (Sindh) by Muhammad Bin Qasim in 711 AD, Muslim scholars started to come and settle in its different cities and an informal setup of Madrassah was established in the city of Debal. (Tankarwi 2012) claims in Gujarat, the first Madrasa was established by the Shia Bohra community in the time of king Sidhraj Jaisingh in the early twelfth century. After that, several madrasas came into existence in the reign of Muslim kings. However, (Sikand 2005) argues that Muhammad Ghori established a Madrassah in the city of Ajmer in 1191. It was considered the first formal institution established by any Muslim ruler in the sub-continent and from there spread to the northern parts of the country. Then, from the latter half of the twelfth century to almost the end of the sixteenth century, there was a steady growth of madrasas under the patronage of the early Muslim and Mughal kings. Overall, during this time, madrassas gained financial support and respect from rulers and common citizens alike. The first conqueror of the Mughal era, Babar, is remembered for establishing (between 1526 and 1530) particular division for the advancement and administration of madrassas (Kidwai 2015). Among the subsequent kings, Akbar (1556–1605) was especially noted for enhancing the access of common citizens to madrassas (Riaz 2011). The Emperors Jahangir (1605–1658) and Aurangzeb (1658–1707) resurrected several old madrassas and improved financial arrangements for their upkeep and scholarships to poor students (Kidwai 2015). They provided a substantial amount of land (jagirs) to religious schools. State-sponsored madrasas persisted even throughout the era of the last Mughal Empire of Bahadur Shah Zafar (Siddiqui 1997). Thus, more than a thousand madrasas sponsored by the state are recorded to have been in operation during the pre-Mughal Tughlaqs and were widespread throughout the length and breadth of the country during Mughal rule.

However, there has been a concern in India about Madrasa education after the British enacted Legislation to seize overall Madrasa properties in India in 1828 (Nair 2009), particularly since the first war of Indian Independence took place in 1857, Madrasas lost political patronage. As a result, traditional education institutions no longer had recourse to endowments in the form of free properties (Kidwai 2015). Nonetheless, they continuously operated with the spirit of supporting the legacy of classical Muslim education in the Indian sub-continent amid the financial turmoil and the sequence of crises. Owing to the bitter experience of being governed by the colonial forces, the Muslims became more aware of their religious existence, producing many madrasas. The most prominent and popular among them was Darul Uloom Deoband and Mazahirul Uloom Saharanpur, established in 1866,

Darul Uloom Nadwatul Ulama, founded in 1892 in UP, and Jamiah Ashrafiah of Rander in 1870 in Gujarat (Nadwi 1999).

Anyhow, nowadays there are many madrassas, both old and modern styles, in Gujarat. The Jamiah Islamia of Dabhel, established in 1908, was really a great institution once, claiming on its staff men of the calibre of Maulana Anwar Shah Kashmiri and Maulana Shabbir Ahmad Osmani (Nadwi 1999). Jamiah Husainiah of Rander was founded in 1917; Al Jamiah Al Islamiyyah Taaleem u Al Islam of Anand has been established in 1919; Al Madrasa Al Arabiyyah Li Taalimi Al Muslimeen of Lunawada was originally established in 1930; Darul Uloom Saadat u Al Darain of Sitpon was established in 1939; Darul Uloom of Chaapi was officially established in 1945; Al Jamiah Al Islamiyyah Imdad u Al Uloom of Wadaali was started in 1956; Darul Uloom Falah e Darain of Tadkeshwar was actually founded in 1964; Darul Uloom Al Islamiyyah Al Arbiyyah Matliwala of Bharuch in 1966; Darul Uloom Al Arbiyyah Al Islamiyyah of Kantharia in 1969; Darul Uloom Baroda of Tandalja was erected in 1972; Al Jamiah Al Qasimiyyah of Ratanpur in 1981; Darul Uloom Al Markaz Al Islami of Ankleshwar in 1984; Jamiah Mazhar u Al Saadah of Hansot in 1985; Jamiah Uloom u Al Quraan of Jambusar inaugurated in 1988; Jamiah Al Qiraat of Kafilata in 1996 and Jamiah Ameen u Al Quraan of Paanpur began in 1998 are the most notable (Kapodravi 2015).

2.3 Types of Madrasas Based on Sources of Fund

For the thousands of Madrasas operating in India with the mission of spreading Allah's message to humanity, there are primarily two types of financial assistance to them:

Charity Based Madrasas

This type of Madrasas is almost dependent on the support of charity. The majority of the Madrasas have their own charity collectors, commonly referred to as "Safeer," who go door to door to ask for donations from the Muslim community. Organizations such as the Jamiat Ulama-e-Hind and Rabta-e-Madaris-e-Islami issue certificates to Madrasas affiliated with them to certify their authenticity and charitable work (Nair 2009). Occasionally, some Muslims make a large contribution to a Madrasa in terms of Sadaqah. Certain individuals make Zakat and Fitra contributions to certain institutions. During Eid-ul-Azha, Muslims frequently donate their charm-e-qurbani (slaughtered animal's skin) to Madrasas. However, certain Madrasas have permanent revenue streams, like lands, residential complexes, and other real estates that generate regular profits (Khan et al. 2003), but these types of Madrasas are very few.

Government Grants Madrasas

The government of certain states, including Assam, Bihar, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, and West Bengal, has established government-sponsored Madrasa education boards. While the government of these states provides some funding to these institutions, the number of such Madrasas is relatively small (Ali 2015).

3 Research Methodology

This research adopted the qualitative method as it allows the researcher to collect financial reports of Madrasas in Gujarat which will help to exhibit the sources of funds for Madrasas and help to know their main expenses. This research is based on secondary data which is collected from sources such as published articles, books, websites, academic writings, and last 3 years annual audit reports of 7 Madrasas out of a total of 63 Madrasas approximately, though these reports are not accessible online and are very hard to get. Furthermore, an explanatory research type will be used, since no research conducted about Islamic educational institutions (Madrasa) of Gujarat (India), particularly from financial aspects.

4 Findings and Discussion

4.1 Income and Expenditure Statements Analysis

The main objective of this study is to know the financial system of the institutions mentioned above, especially the income of these Madrasas, and how is it utilized as it has been discussed earlier that there is no study about the financial system of these institutions until now. Hence, the researcher tried to analyze the income and expenditure statements of seven madrasas for the last three financial years, categorizing the madrasas into three different classes according to the student's capacity. The first category is the madrasas with the capacity of 400–500 students, the second category is the madrasas which have the capability of 700–800 students, and the last category is Madrasas, with 900–1000 students. The data presented below were taken from the tabular form of the income and expense statements in an excel sheet from which the main income items and expense items were represented in a bar graph for comparing the financial periods (Fig. 1).

Madrasa A

According to the graph above, the main income of Madrasa is from Zakat, Sadaqah, Lillah and food fees in which income from Zakat is 12.3 M, 13.3 M and 12.5 M for the past 3 years respectively, Sadaqah was 1.1 M, 1 M and 1.3 M respectively, Lillah was 1.1 M, 1.4 M and 1.5 M respectively and food fees were 1 M, 1.7 M and 2.8 M respectively. Other income like Fitra & Fidyah, the skin of sacrifice etc., amount to 1.2 M, 1 M and 1.7 M, respectively (Fig. 2).

The graph shows that the expenditures incurred in Madrasa A are mainly in payment of salary, electricity, and food expenses. Salary expenditure was 10.4 M, 11.M and 12 M for previous 3 years respectively, electricity amount to 0.45 M, 0.47 M and 0.53 M respectively and food expense incurred was 5.2 M, 6 M and



Fig. 1 Income statement of Madrasa A. *Source* Financial Statements of Madrasa A (2019–21)

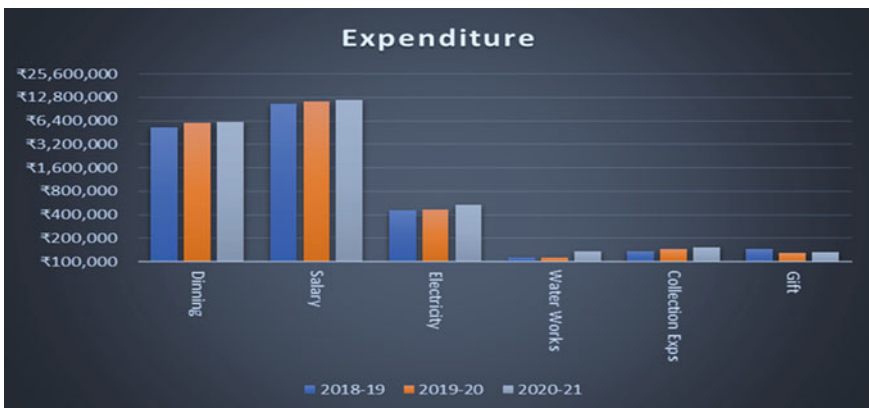


Fig. 2 Expenditure statement of Madrasa A. *Source* Financial Statements of Madrasa A (2019–21)

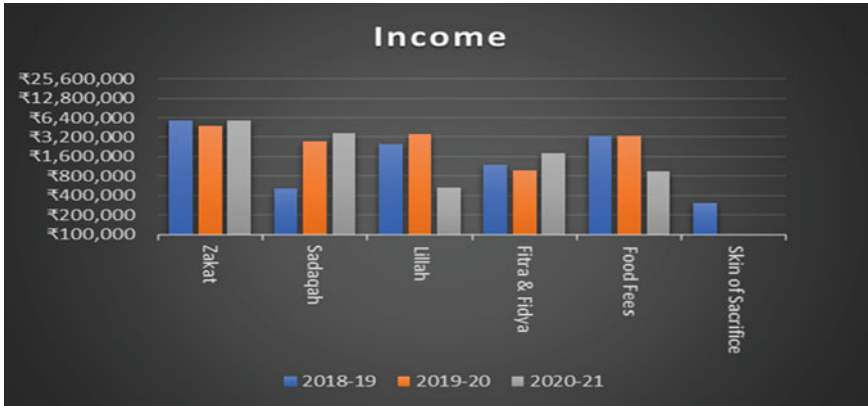


Fig. 3 Income statement of Madrasa B. *Source* Financial Statements of Madrasa B (2019–21)

6.1 M respectively, other expenditure like water works, repair and maintenance, gifts etc., amount to 0.65 M, 0.79 M and 1.1 M respectively.

Anyhow, the major source of income was Zakat. However, the main expenditure incurred by Madrasa A is in paying salary to their staff members, which is supposed to be paid through income from Lillah and fees; since they have inadequate funds, they had to cover the salary expenses through Zakat and Sadaqah. It should be noted that for the past 2 years, the Madrasa had to take Qarz-e-Hasan (Financial loan) of 0.36 M and 0.50 M (Fig. 3).

Madrasa B

As we can see from the graph above, the core income of Madrasa B is from Zakat, Sadaqah, Lillah, Fitra & Fidy'a, food fees and skin of sacrifice. Where the income gained from Zakat is 5.7 M, 4.8 M and 5.8 M for the 3 years prior to the current year. The income of Sadaqah increased from 0.51 M in 2018 to 3.7 M in 2020. Income from Lillah was 2.5 M, 3.5 M and 0.53 M respectively, and Fitra and food income were 1.1 M, 0.97 M and 1.8 M from 2018–20, Fees collection was 3.3 M and 3.3 M for 2018–2019 and 2019–2020, but it dropped significantly to 0.94 M due to Covid-19 pandemic (Fig. 4).

Expenses incurred by Madrasa B are mainly in paying salary, food expenses, electricity, collection expenses and repairing and maintenance. Salary paid amounted to 7.7 M, 9.1 M and 8.3 M respectively. Food expenses were 3.5 M, 4.2 M and 1.5 M for the past 3 years. Electricity expenses paid was 0.67 M, 0.58 M and 0.15 M respectively. Collection expenses, including travel and collection salary expenses were 0.62 M, 0.66 M and 0.53 M for last 3 years. Other expenses like program & exam, travelling, gift, guest, stationery, and printing expenses etc. amount to 1.3 M, 1.1 M and 0.8 M respectively.

Considering the income and expenditure of Madrasa B, we can see that the main income of the madrasa is from Zakat and the main expenditure is the Staff salary, part of the salary is being paid through Zakat funds since there is a shortage of funds

from Lillah and fees. It needs to be highlighted that the madrasa allocated a part of the budget to collect funds (Fig. 5).

Madrasa C

The above graph illustrates the main income of Madrasa C. They are Zakat, Sadaqah, Lillah, fees etc. The income from Zakat was 13 M, 18 M and 11 M respectively for the past 3 years. Sadaqah was collected 10 M, 2.7 M and 2.8 M for 3 preceding years. Income from Lillah was 1.4 M, 15.5 M and 8.5 M respectively, Income generated from fees was 1.2 M, 1.3 M and 0.22 M. Other incomes generated from the skin of sacrifice, gifts, school fees, ITI, NCPUL grant etc. which amounts to 2.6 M, 2.8 M and 0.79 M. According to the income statement of Madrasa C, in the past 3 years, the Madrasa generated the highest income in the period of 2019–20, which was 40.5 M

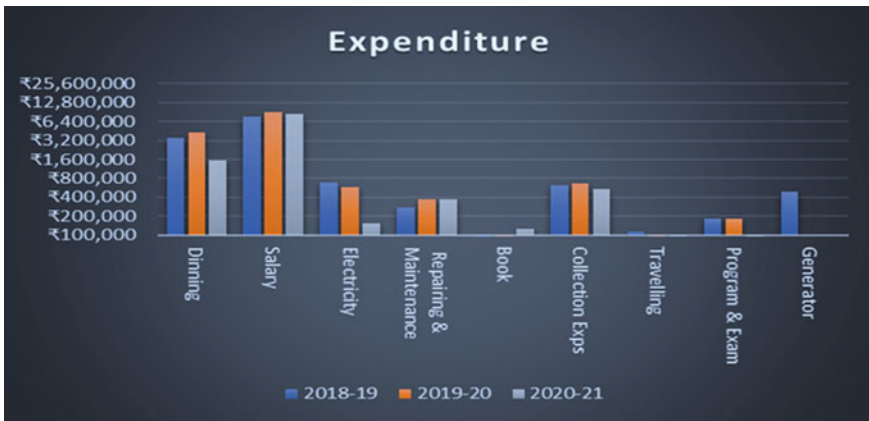


Fig. 4 Expenditure statement of Madrasa B. *Source* Financial Statements of Madrasa B (2019–21)

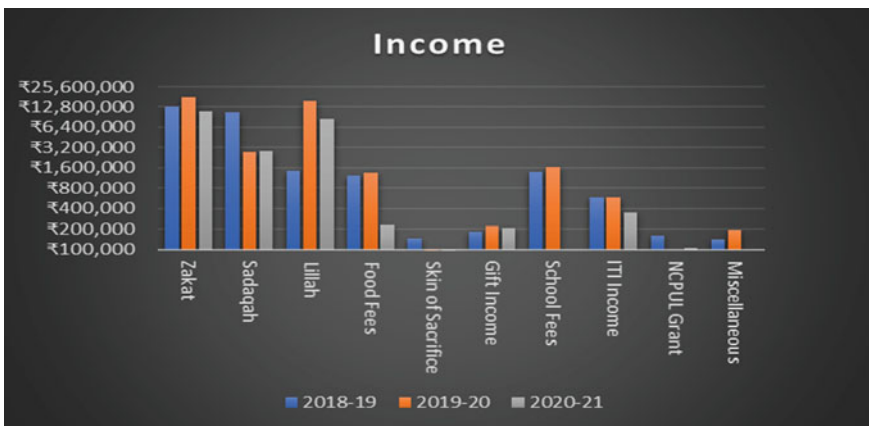


Fig. 5 Income statement of Madrasa C. *Source* Financial Statements of Madrasa C (2019–21)

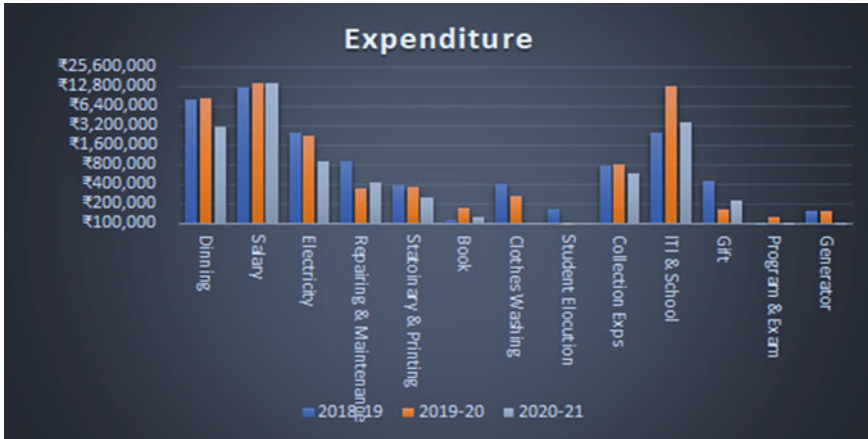


Fig. 6 Expenditure statement of Madrasa C. Source Financial Statements of Madrasa C (2019–21)

and the lowest in the period of 2020–21, which was 23.4 M due to the pandemic (Fig. 6).

The expenditure graph highlights the main expenses incurred by the Madrasa for the past 3 years, Staff salary, food, electricity, repair, and maintenance and ITI and School. The Staff salary was 12.3 M, 14.2 M and 14 M for past 3 years. Food expenses were 8.1 M, 8.3 M and 3 M, respectively. There is a decrease in food expenses for the period of 2020–21 compared to 2 years prior to it because of few students in the madrasa due to the pandemic. Electricity expenses also saw a decline from 2.5 M and 2.2 M in 2018–19 and 2019–20 respectively to 0.87 M in 2020–21 due to less electricity usage. ITI and school expenses incurred was 2.5 M, 12.8 M and 3.5 M for the past 3 years. Repair and maintenance expenditure were 0.9 M, 0.34 M and 0.43 M for the years 2018–2020. Other expenses amount to 3.7 M, 2.8 M and 1.9 M.

We can see from the above data that in the period of 2018–19, Madrasa C had to pay salary and cover expenses by using the income from Zakat and Sadaqah in contrast to the period of 2019–20 in which Salary expense was paid with income generated from Lillah and other income other than Zakat and Sadaqah. It is to be noted that the income and expenditure of Madrasa C are more than the above mentioned 2 madrasas, Madrasa A and Madrasa B. Madrasa C has income from ITI, NCPUL grant and school fees, which is specifically used to cover expenses of ITI and school. However, the expenses incurred in ITI and school in the period of 2019–20 is 12.8 M which was paid with income from unknown sources (Fig. 7).

Madrasa D

The income graph of Madrasa D depicts that its main income was from Zakat, Lillah, Sadaqah, fees and skin of sacrifice. The Funds collected from Zakat were 5 M, 5.8 M and 6 M. Funds from Sadaqah were 0.32 M, 0.32 M and 0.4 M, respectively, for the past 3 years. Income gained from cash waqf was 9.8 M, 10.5 M and 12.1 M. Lillah income was the highest income compared to all other items in the income statement.

Food Fees income was 2.4 M, 2.9 M and 3.5 M for the previous 3 years. Income from the sale of the skin of sacrifice was 3.5 M, 2.9 M and 2.5 M, respectively, for the past 3 years (Fig. 8).

Madrasa D's expenditure chart shows that the expense of this Madrasa mainly consists of Staff salary, food expense, electricity, repair, maintenance, etc. Staff salary was 11.1 M, 12.7 M and 14 M. Food expenses were 6.4 M, 7.1 M and 7.5 M for the period from 2018 to 2020. Electricity expenses incurred have been consistent for all 3 years, which is 1.4 M, 1.4 M and 1.6 M. Repairing and maintenance of the madrasa cost 1.1 M, 0.4 M and 0.5 M for the preceding 3 years. All other expenses like stationery and printing, purchase of books, travelling, etc. totalled 1.1 M, 1 M and 1 M, respectively.



Fig. 7 Income statement of Madrasa D. *Source* Financial Statements of Madrasa D (2019–21)

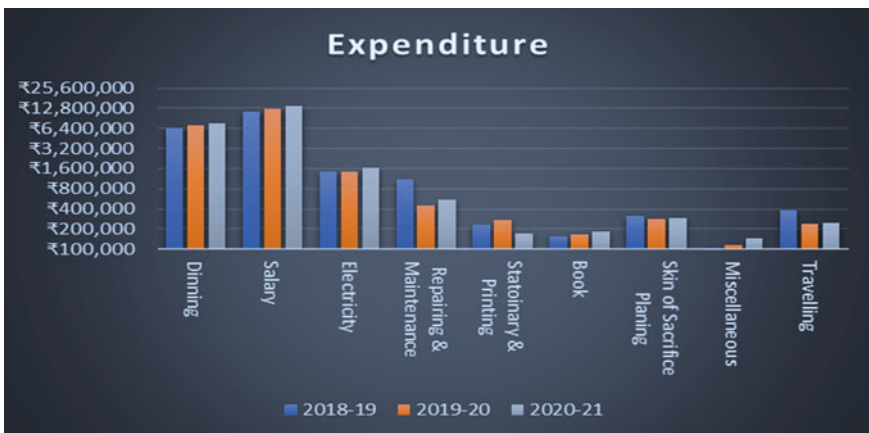


Fig. 8 Expenditure statement of Madrasa D. *Source* Financial Statements of Madrasa D (2019–21)



Fig. 9 Income statement of Madrasa E. *Source* Financial Statements of Madrasa E (2019–21)

Since Madrasa D has a large number of funds from Lillah and other income, including fees and miscellanies, they could pay Salary from that amount. Unlike the previous 3 madrasas, where the main income was from Zakat and salary had to be paid from the Zakat and Sadaqah funds (Fig. 9).

Madrasa E

The above graph portrays that the major income of Madrasa E is generated from Zakat and Lillah funds. Zakat collected amounts to 5.1 M, 4.8 M and 5.1 M, respectively, which is about 75% of the total income. Lillah collected is 0.9 M, 1.4 M and 0.85 M for the past 3 years. Other income includes share dividend, Sadaqah, Fitra and Fidyah, food fees and rental income (Fig. 10).

The expenditure of Madrasa E is incurred mainly in Salary, and dining expense which is 3.2 M, 4 M and 4 M for Salary paid and 2.7 M, 2.6 M and 2 M for dining expense respectively for the past 3 years. Other expenses include electricity, repair and maintenance, gas, collection expenses, travelling etc., which amount to 1 M, 1.1 M and 1.2 M for the period of 2018–2020. The major expense incurred by the Madrasa is in dining expenses, and salary paid, which consist of more than 50% of the total expenditure.

The point to be highlighted is that Madrasa E has multiple sources of income like rental income and share dividend, which was not found in income statements of previously mentioned madrasas. As Zakat funds are the main income, staff Salary was paid with the Zakat funds, whereas it is supposed to be paid with income from Lillah, rental income and share dividend (Fig. 11).

Madrasa F

The above graph illustrates the income of madrasa F, which consist of Zakat, Sadaqah, Lillah, build fund, share dividend, food fees and grant fund. Zakat collected was

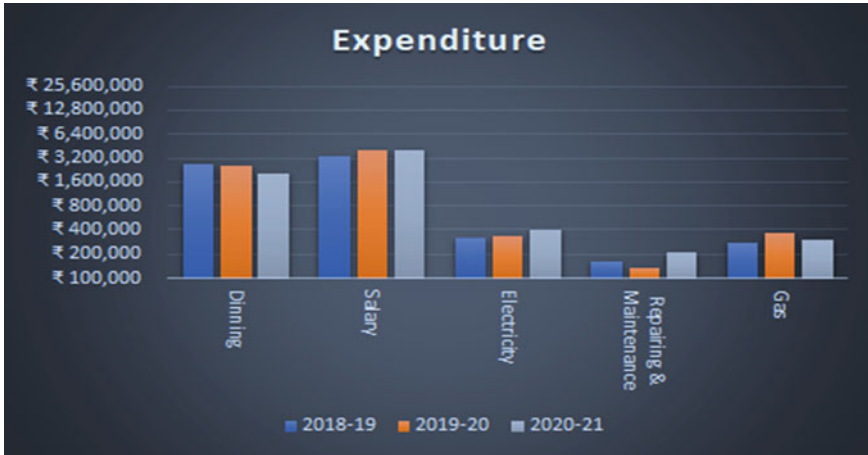


Fig. 10 Expenditure statement of Madrasa E. *Source* Financial Statements of Madrasa E (2019–21)

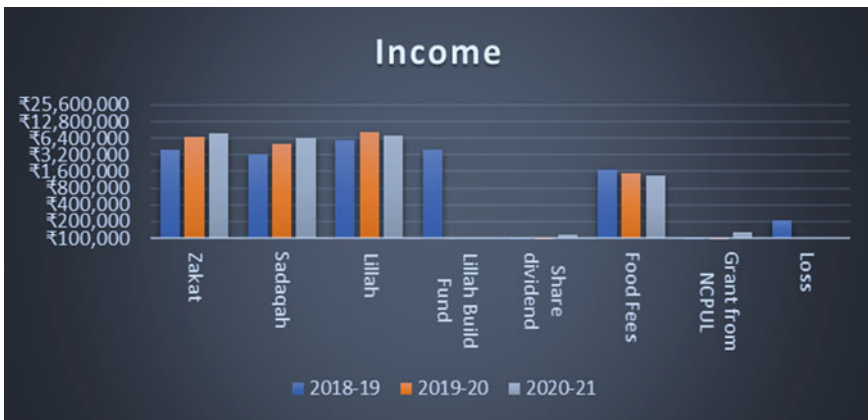


Fig. 11 Income statement of Madrasa F. *Source* Financial Statements of Madrasa F (2019–21)

3.9 M, 6.8 M and 7.9 M for the period of 2018–2020. Sadaqah was 3.2 M, 5.1 M and 6.3 M respectively for the past 3 years. Lillah collected was 5.8 M, 8.4 M and 7.2 M. The built fund was collected only for the period of 2018–19, which was about 4 M. Other income consists of share dividend, food fees, grant fund amount to 1.8 M, 1.6 M and 1.5 M in which grant from NCPUL is specifically used for the same purpose (Fig. 12).

The major expenditure of Madrasa F was in Dining expenses, Salary and electricity, which makes up around 80% of the total expenditure. The other expenses include repair and maintenance, land revenue, stationery and printing, collection expense, school expense, travelling etc., which amount to 3.6 M, 2.8 M and 2.8 M for the previous 3 years.

According to the financial statement of Madrasa F, in the financial period of 2018–19, the Madrasa incurred a loss of 0.2 M, and in 2019–20 and 2020–21 period, the Madrasa had an excess of 1.5 M and 1.5 M respectively. Despite using the waqf land, the Madrasa has made an annual payment of land revenue to the government. The madrasa also has a school and other small branch of the madrasa, which have separate expenses (Fig. 13).

Madrasa G

As seen in the graph above, the Zakat collected makes up the majority of the income of Madrasa G. Other Incomes include Sadaqah, Lillah, Fitra & Fidya, fees, rental income, kitchen stock etc. Zakat funds were 20 M, 23 M and 20 M respectively for the 3 years. Almost 70% of the income of the madrasa comes from the Zakat fund.

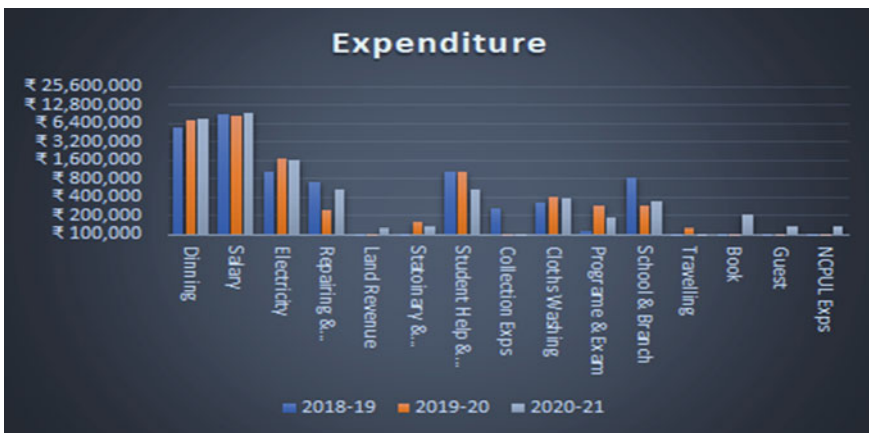


Fig. 12 Expenditure statement of Madrasa F. Source Financial Statements of Madrasa F (2019–21)

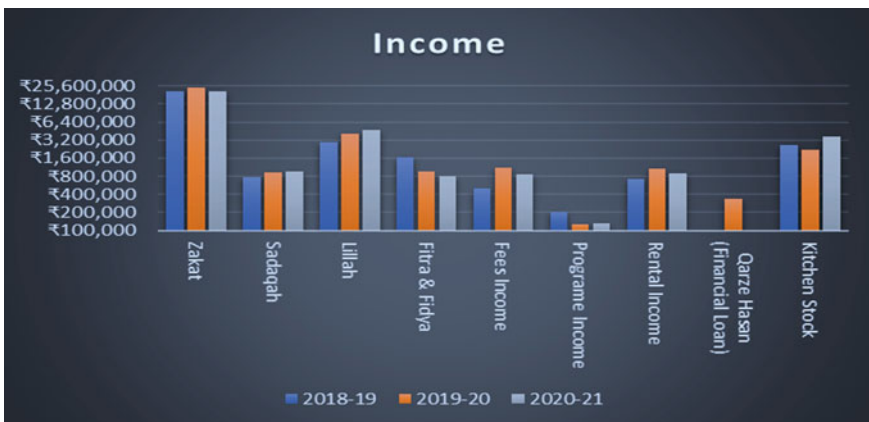


Fig. 13 Income statement of Madrasa G. Source Financial Statements of Madrasa G (2019–21)

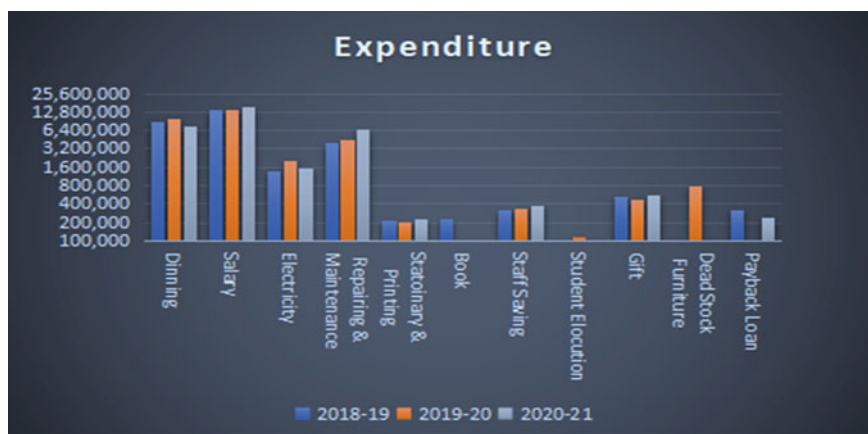


Fig. 14 Expenditure statement of Madrasa G. *Source* Financial Statements of Madrasa A (2019–21)

Sadaqah amounts to 1.1 M, 1 M and 1.3 M, Lillah income is 1.1 M, 1.4 M and 1.5 M, fees collected amount to 1 M, 1.7 M and 2.8 M respectively for 3 years preceding to the current year (Fig. 14).

A major part of the expenditure was incurred in food and Staff Salary which makes up 70% of the total expenditure. Other expenses include electricity, repair and maintenance, stationery, and printing, Staff Saving, Gifts etc. which amounts to 7.3 M, 11.1 M and 10.2 M for the previous 3 years.

The madrasa has generated revenue from multiple sources like fees collection, program income, rental income etc., but still, the Madrasa had to take a Qarz-e-Hasan (Financial Loan) in the year 2019–20 to meet the expenses. In the period of 2020–21, Madrasa was only able to pay back part of the loan taken in the previous financial year, which shows that even after Madrasa had multiple sources of income, it was not able to fully repay the loan in one financial year.

5 Conclusion

Looking at the financial statement of the Islamic educational institutions (Madrasas) in Gujarat, it is discovered that total revenue and expense differ by Madrasa, depending upon the size of students and the facilities offered. Even so, the first segment of Madrasas, which educates 400–500 students, has a budget of nearly 10 M INR, the second category, which teaches 700–800 students, has a budget of approximately 25 M INR, and the third category, which enlightens 1000 students, has a budget of up to 40 M INR. Apart from this, some Madrasas receive and spend more money than others because of quality of the services they give. Moreover, the main income of these institutions comes from Zakat, Sadaqah, Lillah, Fitra, Fidyah, and fees, whereas nearly 80% of income is derived from Zakat, Sadaqah, Fitra, and

Fidya, around 10% is obtained from Lillah, and the remaining 10% is sourced from fees and other sources. While wages, electricity, repairing, food, gift, program and exam, collection, travel, and hospitality of the guest are the main expenses associated with running the Madrasas. Most of the collected fund goes to wages, food and electricity expenses which are around 50%, 30% and 10% respectively, and the remaining 20% is allocated to other expenses. Compared to the cost of electricity, some Madrasas spend 10% of their total income on maintenance and repairs. However, salaries account for nearly 60% of total expenses in a few Madrasas, with food costs accounting for up to 30% of total expenses.

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Delivering Future-Ready Financial Management Course for Non-finance Students Using Internet of Things (IoT)



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Abstract It is evident that the impacts of COVID-19 crisis on education inevitably require a myriad of innovations on the delivery of conventional financial management courses in higher-educational institutions. The Future-Ready Financial Management Course (FRFMC) was one of a plethora of innovations that was developed to uncover the gap in the current curriculums. It also aims to cultivate and expand the abilities of students by enriching teaching contents and optimizing teaching methods through the Future-Ready Curriculum using a modified Attracting, Informing, Positioning and Delivering model. The development of FRFMC is extremely important as it can be used a means to attract non-finance students background to show interest in studying finance. Furthermore, the FRFMC dramatically changed the way higher-educational institutions, specifically educators in a financial management course to engage more efficiently and effectively with their new batches of digitally native and technologically savvy students. The reality is, many students are now on remote learning mode, highly depending on technology especially during the COVID-19 pandemic. While many students are considered sophisticated users of technology, few non-finance students are found struggling to learn the basics of finance for entrepreneurs. The FRFMC intends to cater to both groups of students. A number of 431 questionnaire surveys were collected among the non-finance student of Universiti Malaysia Kelantan and observations was adopted as the mechanisms to examine the students' experience during the FRFMC implementation. The findings show that financial management courses can indeed be taught in a more innovative and effective way in order to draw the interest of non-finance students to take up more technical courses in the future.

Keywords Non-finance · IoT · Future ready curriculum · AIPD

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1 Introduction

Today, financial management has become an essential course typically required for students specializing in fields such as business, management, and entrepreneurship (Usama and Yusoff 2018; Kenayathulla et al. 2020; Ramavhea et al. 2017). Non-finance students in these areas were required to at least grasp the basic importance of this course in managing businesses at large, and specifically, in managing the financial and operational sides of businesses. Nevertheless, some students have found technical courses such as financial management, accounting, and actuary difficult to learn, in particular, if they did not have prior basic knowledge on the syllabuses of these courses (Lubbe 2017). There are many reasons that contributed to this phenomenon. (Khoo and Fitzgerald 2021) and (Thomas et al. 2021) for example argued for a meticulous review of degree courses in the era of the Industrial Revolution 4.0 (IR 4.0) in order for latest innovations and technologies to be embedded in these courses which consequently make them more attractive and palatable for students, especially those hailing from the Society 5.0 as well as those from non-finance backgrounds. The integration of technology in the teaching and learning method for finance courses is thus deemed necessary as it can attract students to consequently provide better interest and participation towards the courses.

Although the needs for future-ready courses are growing (Andiola et al. 2020; Bowles et al. 2020), the actions taken on developing and offering the courses are noticeably sluggish. Many past studies have shown the need for future-ready courses for students (see (Andiola et al. 2020; Maali and Al-Attar 2020; Aziz et al. 2019)). Unfortunately, few studies have tried to propose appropriate processes and methods to develop future-ready courses. Hence, this study aims to develop a future-ready course, in particular, developing innovative financial management courses for non-financial management students as well as to implement the future-ready course.

It is an inevitable fact that students specializing in pure science disciplines are way more technologically savvy compared to those in social science disciplines. This is purely because technologies are ubiquitous in every aspect of the former's studies, such as in the use of machines to analyze scientific samples and report experiments' results, as well as the use of artificial intelligence to conduct specific laboratory chores, providing additional mileage to human limitations. Many pure science students regard their laboratories as playgrounds providing a particular excitement and experience in the teaching and learning experience of the courses. That subjective value naturally creates voluntary participation among students in passionately learning the courses. On the other hand, social science students still have to largely deal with mostly traditional way of teaching and learning methods. It is safe to say that their exposure towards technology are greater outside of the traditional teaching and learning activities of their social science courses than inside. This, more or less influences the students' commitment, interest, and participation in expecting more innovative and attractive social science courses. This passive attitude therefore prompts the need for technologies to be embedded into existing social science courses, in particular, accounting courses.

Conventional curriculums, in particular, calculation-based courses greatly lack in their efforts to embed current trends into their syllabuses and at the same time, failed to equip students with the necessary set of skills demanded for their job marketability in the future. The reality is that many students graduated without vital future-proof skills, and are severely insufficient in current trends exposures during their studies. This consequently results in many graduates facing additional challenges in getting a job placement as many employers nowadays prefer graduates with a sound technological and digital knowledge and skills. In other words, students today have a critical need for future-ready curriculums that can equip them with a contemporary set of critical skills such as digital, communication, and interpersonal skills which they expect to be delivered during their teaching and learning activities.

Besides, the year 2020, in which the COVID-19 pandemic impacted every aspect of human life including the educational sector has witnessed an aggressive shift towards digital-based teaching and learning activities. This is evinced by a massive amount of courses around the world shifting from a non-face to a face-to-face mode of delivery. The pandemic has forced many societies to follow standard operating procedures (SOPs) as a step to stop the virus from spreading, for example by implementing a social distancing policy in public places (Rachmadtullah et al. 2020). Yet the truth is that, social distancing has itself produced its own side effects to the traditional teaching and learning activities. For instance, many lectures and tutorials classes are nowadays routinely conducted online via synchronous or asynchronous methods. This means that many of the current curriculums are no longer relevant for implementation and need to be improved or transformed into one that are more future-ready.

Therefore, the objective of the study is to first create a future-ready financial management course for non-finance students. This is particularly to look into the effectiveness of future-ready course among first year undergraduate student in Universiti Malaysia. Second, the study seeks to innovate the conventional financial management courses using the Internet of Things (IoT) technology expected to enhance the interactive quality of a learning experience in a real-world environment. Third, the study expects to increase the students' motivation and subsequently stimulate their interest to studying financial management courses using the AIPD model.

This paper is organised as follows. Section 2 covers a review of relevant literatures on the evolution of education and technology over time. Section 3 discusses on the methodology and design of the study. Meanwhile, detail discussion on empirical findings are reported in the Sect. 4. Finally, conclusion, limitations and recommendations are present in the Sect. 5.

2 Literature Review

2.1 *Evolution of Education and Technology*

Education is often related with the ideas of schooling, learning and training whereas it can be access formally from university, college or school. In 1800s, education is deliver face-to-face in the lecture room or classroom. During the learning processes, both the lecturer and students could see the face expression among them and give respond and feedback immediately without delay. What more important, blackboard and chalks were used as a learning management system to deliver the information to the students (Muttappallymyalil et al. 2016). The use of the blackboard is solely depending on the ability and creativity of the teacher and lecturer to visualize the course for the students. In 1960s onwards, Overhead Projector (OHP) was widely used in classroom across the country. This technology evolution in education systems has influenced the teaching and learning process in schools and higher education institutions. Among of the benefit of the OHP were the teacher are faces the students at all times, bring images are projected in fully lighted rooms and simple and easy to use (Putney 1964; Gallentine 1970; Essex-Lopresti 1979). At this time, lecturer is the primary source of information and the students or learners passively receive it.

Late of 1980s, technology has begun to change the role of lecturers and students. Despite of doing the teaching activities, the lecturers' role is shifting to guide on the side as the students has open access to the information and knowledge via technology. The walls of the classrooms are no longer barrier as the technology has bring in the source and information into the classroom (Arumugam 2011). In addition, lecturers and students are also having the opportunity to communicate and collaborate with others across the countries. In the early of 2000s, technology have changes the learning management system especially in higher education institution. OHP was replaced by system networks and Web 2.0. Malaysia via National IT Council is one of the country that actively develop and redevelop education policy as to enhance the education system (Ministry of Education 2001). Later, in 2009, technologies such as wireless, Bluetooth and broadband have become a part of the daily life of a student (MIMOS 2009). Teaching and learning process become more interesting regardless it is theoretical or calculation courses.

In 2020, a virus called Covid-19 is attacking people across the country. The government has to stop the spreading of the virus by implementing the movement control order. As a result, many sector including education sector has affected with the new standard of the movement. The teaching and learning process in the school and higher education institutions are conducted from home. In parallel with the industrial revolution 4.0, many courses are conducted using advance technologies such as Internet of Things, augmented reality and zapper. The classroom activities such as quiz, test, examination and presentation were also conducted via online using a particular platform such as zoom, google meet, kahoot, youtube and webex. Despite of the changes in the technology, it brings an inspiration for the education sector to improve the teaching and learning management (Means 2010).

3 Methodology and Design

Figure 1 shows Simeon (1999, 2001) Attracting, Informing, Positioning and Delivering (AIPD) framework that has been adapted and modified according to the context of this study. The framework shows elements regarded as independent variables from the previous study, namely, attracting, informing, positioning, and delivering. The four elements are also called strategic dimensions in the framework. These elements function to affect the way an object becomes more attractive, dynamic, innovative, trustworthy, and exciting. In the context of the current study, the object here refers to the financial management course. Furthermore, Fig. 1 implies that an attractive, dynamic, innovative, trustworthy, and exciting financial management course creates a positive feedback, similar to receiving a positive perception towards the course from the students.

With reference to the AIPD framework (Simeon 1999; 2001), the study proposed a project design flow as exhibited in Fig. 2. This new framework proposed that lecturers are required to focus on the strategic dimension of the course’s website in delivering a future-ready curriculum, especially for a technical and calculation-based course such as financial management.

A total number of 431 non-finance students were involved in this research project. They were a first year students from faculty of business and entrepreneurship of Universiti Malaysia Kelantan. At the beginning of the semester, the students were given an explanation on the FRFMC which include on the briefing of the course, the individual and group tasks that need to be completed throughout the semester. For the course, students will be learning fourteen topics in fourteen weeks. The lecturers delivered the content for each topic either asynchronies or synchronies via zoom or google meet. Augmented reality was created which require the students to scan the zipper code to assess all the material and learning activities. For a group task and

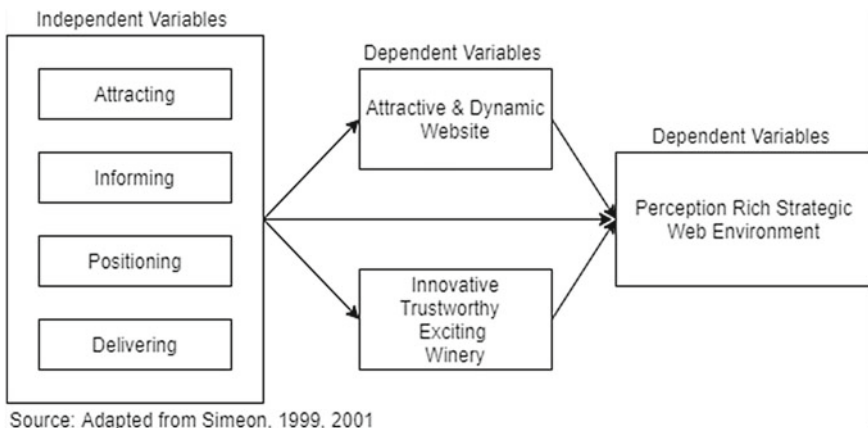


Fig. 1 AIPD framework

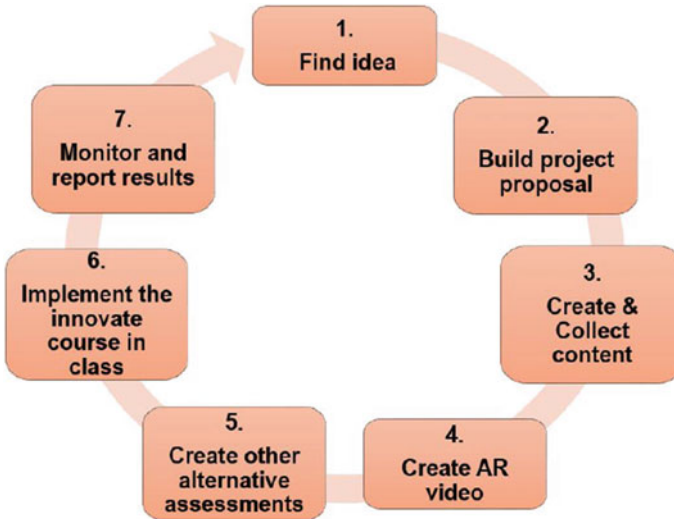


Fig. 2 Project design flow of FRFMC

presentation, students are required to form a group of 5 members in order to work on the group assignments which are preparing a report and delivering a presentation based on the instruction given by the lecturers. All the instructions and information on the group task were published on trello, e-campus and WhatsApp group. Three platforms were used as to make sure that the instructions and information were delivered to the students. This actions were taken as to consider some students that are from a remote area and having difficulty in accessing the internet. For the test, quiz and individual assignments, students will be informed at the early semester as how to access the questions and activities and which topics that need to be focus. For the submission, the students are required to submit both of the written report and video presentation either via e-learning management website, Trello or google drive.

3.1 Design of FRFMC

The project flow in Fig. 2 showed seven important phases involved in developing and implementing FRFMC for non-finance students throughout this study. Each one of the seven phases are discussed in detail below.

Phase 1

The first phase of the project began with a series of discussions on finding a suitable idea which offers an innovative and attractive quality to the project. In addition, the discussions were complemented with in-depth readings on the subject matter: the financial management course. The outcomes derived from the discussions and readings led the research team to an idea of innovating and restructuring existing

conventional teaching and learning activities, in particular, the financial management course, in order to suit current demands arising from the rapid technological development, student's preferences, as well as the universities' and industries' contemporary needs. Besides, the idea also fittingly reflects the government's current aspiration of encouraging more educational institutions such as higher learning institutions to be equipped with future-ready curriculums preparation in order to prepare students to meet prevailing demands of many industries today. Upon confirming the selected idea with the research team, the project was named Future-Ready Financial Management Curriculum (FRFMC), designed specifically for non-finance students. The non-finance students may include students studying in fields such as logistics, management, retailing, as well as business.

Phase 2

The second phase of the study saw further discussions on the agreed idea. The discussions were now focused on sharing all ideas to build the project proposal as the project is a strategic collaboration between lecturers with various knowledge and expertise on the subject matter which make up the research team. The research team comprised of lecturers from multiple sub-disciplines of financial management, namely financial accounting, management accounting, financial banking, entrepreneurial finance, information technology, business management, and corporate governance. Thanks to the good number of experts working together, the project proposal was prepared and completed a short period of time. At this stage, technology had begun to be integrated by the research team in helping conduct its discussion activities, segregating tasks and duties to each of its members in various geographical areas, setting working schedules, and gathering work form all of its members in the process of forming a complete project proposal.

Phase 3

In the third phase of the study, there was further expansion to the project proposal completed in the previous phase. The technology selected for innovating the course was also decided in the previous phase of the study. As far as this project is concerned, a simple Augmented Reality (AR) technology using IoT was selected to create an interactive, virtual, and integrated platform containing FRFMC contents for lecturers and students alike. The AR platform created required various contents for FRFMC such as assessments for students, quizzes, tests, group assignments, individual assessments, projects, and presentations, all to be included in one interactive, virtual, and integrated platform. This phase consequently saw the research team gathering all relevant contents to fulfil the particular AR platform's requirement. The contents that were derived mostly from existing practice were then transformed into digital forms in order to be integrated seamlessly into the AR platform. In addition, few innovative assessments were also created by the research team for non-finance students seeking to use the platform. For instance, the students can create their own website using a free website provider such as [Wix.com](https://www.wix.com) to present their projects, completely using their own creativity and preferences. Furthermore, virtual presentation task was also created by the research team to assess communication skills of the students using the

Fig. 3 A logo of the Zappar Triggers



platform. The task requires the students to create a 7 to 10 min long video and use Blendspace as a medium to present their projects. The students may choose to present their projects based on any particular role play characters they desire. The students are subsequently required to prepare a video presentation using Microsoft PowerPoint or Prezi and subsequently link it to Blendspace. An award awaits a production of the most creative video presentation.

Phase 4

The fourth phase of the study saw the AR platform finally created based on the contents gathered in the previous phase. To create the AR platform, the research team used the ZapWorks designer platform. The AR platform was created to be used as a base and provide an interface for lecturers and students to share FRFMC contents. Plus, it is also used in conducting teaching and learning activities in both online and offline classes. ZapWorks platform was used to create the Zappar Triggers and incorporate teaching and learning materials into the AR platform. Once a project created on the platform is published, one user interface will be created and is ready to be used by both students and lecturers. In order to reach the interface, both students and lecturers need to scan the Zappar Triggers using a Zappar scanner which can be downloaded for free from the Google Play store.

Figure 3 exhibits the Zappar Triggers that first need to be created on the ZapWorks designer platform already provided to both students and lecturers. The Zappar Triggers enable the students and lecturers using the platform to scan the tracker, enter the platform's classrooms, and access materials, guidelines, instructions, assessments such as quizzes, tests, project reports, videos, lecturer profiles, and other relevant materials prepared in the ZapWorks designer platform beforehand.

The Zappar Triggers need to be shared to students by a lecturer or a FRFMC course coordinator. Moreover, they can be also shared via the common e-learning platforms provided by an individual university or through messaging platforms such as a class' WhatsApp and Telegram groups. In addition, to provide better information, the Zappar Triggers can also be printed on posters carrying brief information about the course (i.e. FRFMC) as illustrated clearly in Fig. 4 below.

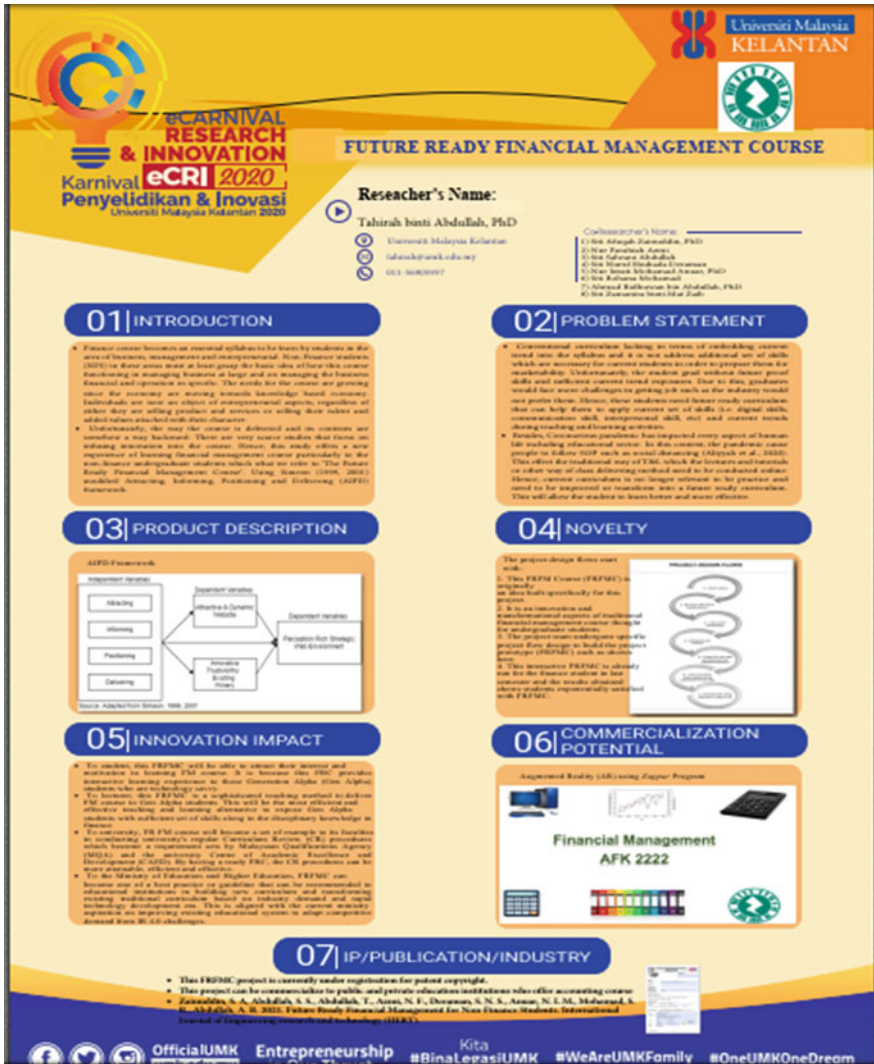


Fig. 4 An example of a course poster with a Zapper scanner printed on it

Phase 5

In the fifth phase of the study, alternative assessment mechanisms were created for the purpose of blended learning. The mechanisms were required to be suitable and relevant to FRFMC and may take the forms of online quizzes, online tests, exercises, financial management project reports, and video presentations. Both of the written report and video presentation produced will be published on the YouTube and/or attached to the Trello website (refer Fig. 5). Nonetheless, any groups of student

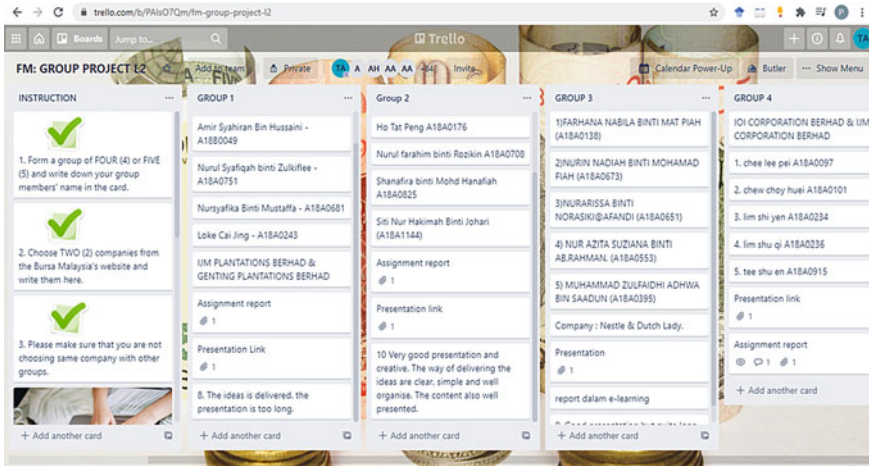


Fig. 5 An example of students' projects published on the Trello website

facing any internet-related problems may send and publish their project on their university learning management system, commonly known as e-learning.

Phase 6

In the sixth phase of the study, FRFMC was finally implemented in financial management classes. Students learning the course using FRFMC were expected to experience more interactive and fun-infused learning activities than those who are not.

Phase 7

In the seventh and final phase of the study, the students' responses, feedbacks, and recommendations were gathered and meticulously examined. The descriptive analysis and results obtained are illustrated succinctly in Fig. 6.

4 Results and Discussions

Based on the observations made during classes and upon the completion of the course, FRFMC was revealed to have been successful in transforming the traditional financial management teaching and learning activities into one interactive and fun-packed course for students. Students, were in general found to be more motivated and committed towards the course's requirements in stark contrast from past practice. Plus, they also became more guided, compliant, and skillful when given more technical activities involving technologies and applications. These positive outcomes are ultimately in line with the FRFMC Course Learning Outcome (CLO) which seeks to equip students with digital, interpersonal, communication, technical, decision making, as well as entrepreneurial skills throughout the implementation of the course.

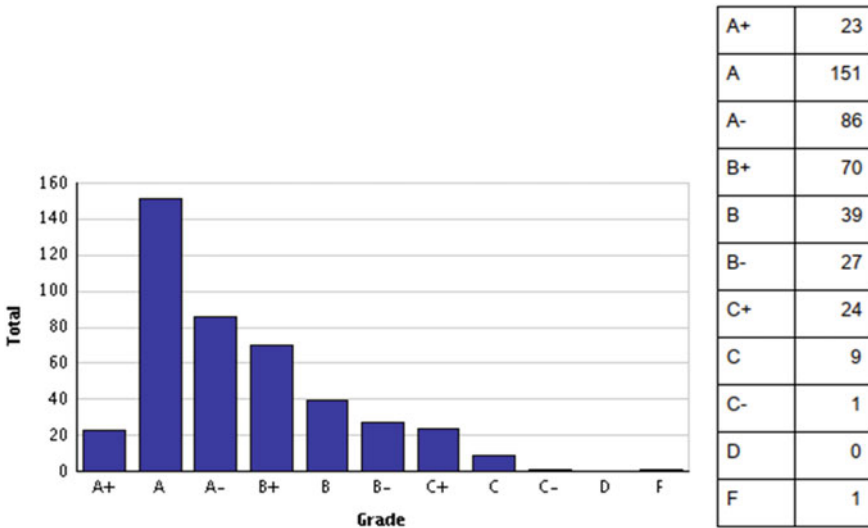


Fig. 6 Students' course grades analysis

Tables 1, 2 and 3 illustrate responses that were gathered from 431 non-finance students who experienced the implementation of FRFMC in one semester. All items in Table 1 show the highest mean score which is 4.5 each. The highest score obtained for each item indicates how information about the scope of the course's contents were accurate and clearly distributed and explained to the students from the beginning of the course. Early dispensation of comprehensive information undeniably forms the most crucial aspect of the course as it helps guide and navigate the students'

Table 1 Students' evaluation of FRFMC course

A. Course		Mean score
		4.5
1	This course increases my interest to study related fields at a much deeper level	4.5
2	This course has a proper scope of contents	4.5
3	This course contains important skills, concepts, and information	4.5
4	This course helps boost my intellectual development	4.5
5	There is a course briefing early in the semester	4.5
6	The teaching activities of this course help with the inculcation of soft skills in students	4.5
7	Assessments' results are informed to students within a reasonable timeframe	4.5
8	Generally speaking, I am satisfied with this course	4.5

Table 2 Students' evaluation on lecturers of FRFMC

B. Lecturer		Mean score
		4.4
1	The lecturer delivers the course contents in a clear manner	4.5
2	The lecturer has an adequate knowledge and mastery of the course	4.5
3	The lecturer is punctual for classes	4.4
4	The lecturer is focused and committed to his/her teaching activities	4.4
5	The lecturer communicates and interacts effectively with students	4.4
6	The lecturer often encourages students to produce high quality work	4.4
7	The lecturer inculcates good values in his/her teaching	4.5
8	The lecturer gives appropriate examples/exercises	4.4
9	The lecturer employs various methods in the course delivery	4.5
10	The lecturer is easy to reach	4.4
11	In general, the lecturer conducts the course in a professional manner	4.5

Table 3 Students' evaluation on infrastructures and facilities available in FRFMC

C. Infrastructures and Facilities		Mean score
		3.9
1	The class environment and available physical facilities support the teaching and learning activities of this course	3.9
2	ICT facilities (Internet connection, laboratories, software) support the teaching and learning activities of this course	3.8
3	The available space supports individual and group learning activities in this course	3.9
4	Available library resources for this course are adequate	4.0
5	Available teaching aids (microphones, LCD, screens, etc.) are satisfactory	3.9
6	In general, I am satisfied with the teaching and learning facilities provided in this course	4.0

subsequent directions and comprehensively inform them of the appropriate level of preparation they need to be equipped with before commencing the course.

Table 2 reveals students' opinions on the lecturer teaching the course. Item number 1 and 2 have the highest mean score of 4.5, referring to the students' experience of learning from an expert of the course. Indeed, apart from the attractive and innovative course contents, having subject matter experts as the course instructors or lecturers is also equally important for an effective implementation of the course. Notably, item number 7 which states that the course instructor 'inculcates good values in his/her teaching' and item number 9 which expresses the idea that 'the lecturer employs

various methods in the course delivery' are deemed extremely important yardsticks for the course as these values have the capacity to persistently encourage more non-finance students to study a technical and a calculation-based course such as financial management. Ultimately, a combination of all these elements can lead to the creation of effective teaching and learning activities in FRFMC.

Table 3 presents students' responses on the infrastructure and facilities available during the FRFMC implementation. Overall, the mean scores obtained show that many students gave a 3.9 rating out of 5.0 for this aspect of the course. Item number 5 and 6 have the highest mean score of 4.0, referring to how that students were generally satisfied with the teaching and learning facilities provided in this course.

Figure 6 adduces students' course grade analysis after experiencing FRFMC. From the total 431 non-finance students which experienced FRFMC, 260 of them scored A+ to A-, accounting for approximately 60% of the total number of students. Based on the collected observations and lecturer reports, it is also worthy to note that the one student who obtained a fail for the subject did not actually participate in FRFMC and had the intention to drop since the beginning of the course, thus having no experience of FRFMC at all.

5 Conclusions, Limitations and Recommendations

FRFMC is a suitable and fitting course for the Generation Alpha (Gen Alpha) students as they can easily access data of knowledge as well as documents of learning using this comprehensive educational technology. In addition, this study has also proved the true capacity of FRFMC lies in its ability to attract the interest and boost the motivation of non-finance students in studying a financial management course. This is primarily attributed to FRFMC providing, first and foremost an interactive learning experience to students who are naturally technologically savvy. Insofar as the lecturers are concerned, FRFMC is undoubtedly a sophisticated teaching method that lecturers can use to deliver the financial management course to the Gen Alpha students.

The course is guaranteed to be the most efficient and effective teaching and learning alternative to date to expose the Gen Alpha students to not only a sufficient set of strategically relevant skills, but also to the disciplinary knowledge of finance. Meanwhile, at the university level, FRFMC will unquestionably become an example of excellence and a symbol of pride to its faculty, especially in conducting the university's regular Curriculum Review (CR) procedures which have become a set of requirements by the Malaysian Qualifications Agency (MQA) and the university's Centre of Academic Excellence and Development (CAED). An available future-ready course will ensure that the regular CR procedures will be more attainable, efficient, and effective.

On the other hand, in reference to the Ministry of Education and Higher Education, Malaysia, FRFMC serves as best practice that also recommends guidelines to other educational institutions aspiring to transform their existing traditional curriculums to also suit the demands of industries amid the current rapid pace of technological

progress. Indeed, FRFMC is aligned with the ministry's current aspiration to improve the existing educational system to adapt to the competitions, demands, and challenges arising from the Industrial Revolution 4.0. Notwithstanding the course's plethora of benefits, the study could be further beneficial to many in the future if greater efforts are placed into replicating it in other public and private higher-educational institutions within Malaysia as well as in other developing countries.

Furthermore, it is recommended that future studies apply a qualitative approach in place of a quantitative approach used in this study as the approach would allow researchers to gain more input and information from the naturally varied responses offered by the respondents. Using AIPD model, future research may study on how the model will attract non-finance students to participate in learning process for financial management and to replicate the model into other calculation and theoretical courses. In addition, a comparison study between students in a remote and urban area is highly recommended as to see how the students in different places adopting new norm of learning during lockdown via Internet of Things. A research on how the lecturers at higher educational institutions deliver the calculation courses and attract students in both remote and urban areas using AIPD model is highly recommended for the future research.

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E-Agribusiness Description and TAM Adoption to Understand Traders' Behavioral Intention to Utilize ICT



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Abstract In Malaysia, Electronic Agribusiness is still in the early stages whereby the usage and acceptance of E-Agribusiness are still new among local traders in Kelantan. Many individuals are unaware of the purpose and benefits that may be obtained by utilizing the E-Agribusiness application. The objective of this study is to determine the user's behavioral intention of E-Agribusiness in Kelantan. The information and communication technology (ICT) have played an increasingly important role in all parts of modern life, influencing socioeconomic growth in areas such as education, administration, commerce, medical care, and agriculture. The technology acceptance model (TAM) can be a useful tool for predicting and evaluating the adoption of these new technical instruments. This paper is anticipating to provide academics, and other researchers with theoretical guidance when selecting which factors should be including in TAM extensions. The paper will utilize quantitative approach method to examine the adoption and the usage of a new technology application system and the focus group was a market trader in Kelantan. The finding will give advantages not only traders but also agro-food industries, and wholesalers by explaining how much potential of selling their goods to consumers, using this kind of technology in keeping with the sophisticated world of today. Therefore, the finding of this research is also expecting to provide the other way of selling products using the traditional method, by shifting to the modern and advanced method, and it can give impact towards an effective E-Business and E-Agribusiness solutions. Furthermore, this paper has the potential to influence local traders and other businesses to utilize this innovative technology to advertise their products in the most efficient way.

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1 Introduction

1.1 Background of Research

A growing number of agribusinesses are using the Internet for marketing, management, customer service, and coordination. For many individuals and businesses, the Internet has proven to be an enticing notion as a commercial tool. Online presence is becoming more and more of a need for business survival. The type of internal proportions that emerge between its various components, as well as interactions with other sectors of the national economy, have a significant impact on the dynamism of agribusiness growth. The agribusiness theory, created by J.H. Davis and R.A. Goldberg¹, is one of the comprehensive theories analyzing the share and relevance of individual sectors of the national economy in food production.

J.H. Davis coined the word “agribusiness” on October 17, 1955, at a speech in Boston on “Business Responsibility and the Market for Farm Products.” Davis released his popular book *A Concept of Agribusiness* in 1957, which provides the most advanced concept of agribusiness with scientific explanation, and his article from *Agriculture to Agribusiness* in the *Harvard Business Review* in 1956. The book’s co-author was R.A. Goldberg, Goldberg devised statistical and mathematical issues, particularly input-output tables, which depicted the flow of commodities and services between agricultural aggregates and various sectors of the national economy (Davis and Goldberg 1957).

Additionally, recent global trends indicate that information and communication technology (ICT) is essential to development success (Hanuranto 2011). Trading using electronic media, or E-Commerce, is one type of information technology development. E-Commerce innovations have an impact on a range of industrial sectors, including the “food”, agricultural industry (which includes agriculture, food, and beverage goods), that is one of the world most important economic sectors (Manouselis et al. 2009). Consequently, the “term”, E-Agribusiness emerges and becomes a subset of E-Commerce or E-Business, that is, business operations conducted via electronic media concentrating on agricultural commodities (Soekartawi 2007). According to Soekartawi (2007b), the quality of the instrument (the software used, the interface, and the completeness of the information accessible) is one of the factors of E-Agribusiness success or failure. Eventually, the mixing of disciplines requires to examine the developing practices of E-Business, particularly E-Agribusiness, necessitate the testing of methodologies for this ongoing research efforts in this field.

Other than that, digital marketplaces, that provide online trade services to consumers and traders, are becoming increasingly popular. It is critical to raise knowledge of E-Agribusiness in markets since it is predicting to lower transaction costs

which is resulting in more efficient operations. Moreover, E-Agribusiness is essential as a tool for electronically promoting agricultural products through marketing, promotions, purchasing, selling, and other agricultural product offerings. According to Chaffey et al. (2000), stated it is not hard to promote agro-based products on the internet, but the difficulty is determining how to display them in a more appealing manner in order to reach the market.

According to Schoop et al. (2003), most technologies such as E-Commerce, E-Business, E-Marketing, and E-Agribusiness were created in Western nations with distinct origins from those of developing countries. The success of technology adoption is highly depending on how adopters accept and utilize it, which is influencing by the connections between the technology and the adopters. Not unexpectedly, Hamblen (2003) and Reyes (2002), state that technology adoption in developing countries has not always been effective.

Based on reports published by Dailysocial.id (Information Technology and Services Company), the landscape of digital entrepreneurs is evolving as entrepreneurs producing E-Business or E-Commerce innovation in many areas, including E-Agribusiness (Startup Report 2017 and 2018). Several firms, notably Agrobazaar Online, have created platforms comprised of software and websites to assist E-Agribusiness operations. Furthermore, Agrobazaar Online, Gold Haovest, Organic4u, My Market, TM Farms, My Groser, Jaya Grocer, Happy Fresh and others have established platforms comprising of software and websites to assist E-Agribusiness operations in Malaysia.

Apart from that, ICT is relevant not just in the multimedia's industry, but also in other sectors of the economy such as in agriculture. The Malaysian government, through the Ministry of Agriculture and Agro-based Industry, is liable for strengthening, also speeding up contemporary agricultural technology, as well as information and communication technology (ICT) and the agro-food supply chain, as part of this program. Besides, Malaysia has launched AgroBazaar.com.my. It is the online website that would create new and long-term markets for agricultural products. The development of online agro-food through the E-Commerce paradigm has increased agricultural product market access. The Malaysian Federal Agricultural Marketing Authority (FAMA) manages the platform, which was established in 2014.

On the other hand, this paper will help scholars and practitioners to scrutinize the efficacy and acceptance of E-Agribusiness technology usage in overcoming the ordinary way of selling agro-food products in Kelantan. It is arranging as follows in order to explain the presenting parts. First, the summary of literature by using the proposed theoretical framework highlighted, which is the variables of technology acceptance model is extensively explored. Second, the problem statement of research is pointed out. Third, research's methodology is discussing. Lastly, the conclusion is providing by summarizing the all parts for future finding.

1.2 Problem Statement in E-Agribusiness Adoption

Although there are difficulties in the field of agribusiness, but it is a business that is important to customers and should be given priority. Agribusiness development is highly dependent on technological advancements and infrastructure (Rajalahti 2011). In both developed and developing nations, innovation is a significant factor of economic growth, boosting competitiveness and productivity, and resulting in social development to battle poverty, generate income and provide job opportunities. Latruffe (2010), classified competitiveness as the capability to market products and services that fulfill demand in terms of price, quality and quantity, while retaining profit over time for long-term sustainable agribusiness.

Some agricultural cooperatives and individual farmers are also involved in the establishment and operation of their own internet stores. With the rapid growth in the number of online stores, online marketing competition among early adopters is becoming increasingly intense (Zeng et al. 2015). A study on the topic of online agricultural commodity trading is still uncommon, and because this research is relatively current in line with evolving technology, it is highly suggested for academics to be able to undertake comparable research with the necessary advancements. Other obstacles include a lack of understanding regarding market access, E-Commerce, and digital marketplaces in terms of limited manufacturing capacity, cyber security, transportation costs, and cross-border E-Commerce laws (Kearney 2015; Rillo and Cruz 2016).

There are several issues occur in the involvement of E-Agribusiness towards firms or traders. First, no known studies focus on Malaysia context towards using E-Agribusiness technology, while it was being debating and discussing rapidly in other country. Second, the lack of consciousness about the internet “technology”, which means some individual is unfamiliar or prefer the traditional method rather than using technology advancement in their “business”, especially rural farmers and market traders. As a result, the focus of this paper has been on the factors that influence the adoption of business sites and the challenge of conducting electronic commerce over the internet among traders of distinct levels of knowledge, ability, and age.

It occurred because they felt comfortable with the old methods rather than switch to a modern method. Apart from that, lack of internet technology skills and knowledge in the agribusiness sector which will lead the agriculture entrepreneur being left behind when they are not being exposed this kind of technology. It may also happen because of certain factors such as age factors, no access through the internet, and not being explained detailed about this kind of technology. They not unaware of the importance of using such technology at present, not proficient in using IT for certain individual and so forth.

Various studies report that the use of E-Agribusiness application is widely used in Indonesia and in other countries, although this technology is still new in our country, but it is actively used because many farmers are involved in agribusiness. Then, it is also influenced through many productions of agricultural products that

have been produced in many areas of Indonesia. But, different from “Malaysia”, which is not many entrepreneurs are exposed with this application which makes the E-Agribusiness system is still in the early stages in terms of usage, adoption, acceptance and others in the context of market traders in Kelantan, Malaysia.

Aside from that, the gap in this research can be identified when market traders continue to sell their agricultural products using regular methods rather than sophisticated methods such as FAMA’s E-Agribusiness application, Agrobazaar Online, which was introduced in all states in Malaysia on December 11, 2014. They prefer to stick with the same method, because they are not being exposed this new technology and not being explained in detail regarding the benefit and features provided. It is also because traders in Kelantan’s market have varying educational levels, ages, and may not have sophisticated phones, making it difficult for them in utilizing or downloading new applications when their phone cannot download this type of platform. They may also be inexperienced with technological advancements and require adequate advice from others before implementing this new technology.

1.3 Aim and Objectives of the Research

This paper aims to review previous research that has investigated the factors influencing the user’s behavioral intention towards the adoption of the E-Agribusiness application system, then to highlight the primary research models employ in this study. In addition, this study also identifies the chance for future research in E-Agribusiness technology, and recommends that studies will be conducting from an alternative corner in helping to enhance the rate of E-Agribusiness site usage in countries with modern technology development.

In order to complete this paper, the following are the objectives of this study that will be developing:

- i) To determine the perceived ease of use that affect perceived usefulness towards adoption of the E-Agribusiness application system.
- ii) To determine the perceived ease of use that affect the attitude towards adoption of the E-Agribusiness application system.
- iii) To determine the perceived usefulness that affect the attitude towards adoption of the E-Agribusiness application system.
- iv) To determine the perceived usefulness that affect behavioral intention towards adoption of the E-Agribusiness application system.
- v) To determine the attitude that affect behavioral intention towards adoption of the E-Agribusiness application system.
- vi) To determine the behavioral intention that affect actual system usage towards adoption of the E-Agribusiness application system.

2 Literature Review

2.1 Definition of E-Agribusiness and the Relation with E-Business

The goal of the paper is to evaluate traditional business and E-Business models as well as integrate strategies regarding on the current literature and industry debates on the best models. Mostly, aspects of E-Agribusiness have been around for years in practice and literature. However, because of their particular use in the context of fast technological development, the meanings of the following words are necessary:

E-Business: A business that employs computer media and involves at least two participants is known as E-Business. The focus of E-Business is on management and strategy. Subsets of E-Business include E-Marketing, E-Commerce, and E-Agribusiness (Balasubramanian et al. 2018a).

E-Marketing: Moving components of marketing strategies and activities to a computerized, networked environment such as the Internet is referred to as E-Marketing. Next, E-Marketing, in greater depth, is the strategic process of developing, distributing, marketing, and pricing goods and services to a target market via the Internet or digital technologies (Balasubramanian et al. 2018b).

E-Commerce: E-Commerce is online business that involves a money transaction or a legally binding promise to exchange products or services (Ernst and Ehmke 2000).

Agribusiness: Farmers, providers of farm inputs, processors of farm output, manufacturers of food products, and those who transport, market, or prepare food items are all included in the agricultural input, production, and processing manufacturing sectors of agribusiness (Beierlein and Woolverton 1991, p. 3).

E-Agribusiness: E-Agribusiness is basically E-Business including a company that predominantly operates in the food and agricultural industries (Hooker et al. 2001). It is technically defined as any type of commercial transaction in which the parties engage electronically rather than via physical transactions or direct touch. Electronic agriculture is the practice of doing agricultural commerce through the internet. In a nutshell, it's referred to as "E-Agribusiness." An application of E-Commerce in agriculture is another name for it. It is essentially agriculture based on information technology.

As a result, E-Agriculture is a potential field that uses the internet and related technologies to cover the whole agricultural value chain. E-Agriculture covers all agriculture and infrastructure initiatives in which ICT has the ability to enable community empowerment, such as providing Internet Demand Based Agriculture Information using ICTs that assist farmers in accessing commodity pricing information. Such methods are used in the growth of crops and the development of direct ties with powerful partners.

In order to give higher value for their products, such techniques are used for cultivating crop maintenance and building direct ties with potential consumers. Its

main goal is to make commodity pricing information more accessible to farmers and traders. Multipurpose community centers that improve access to the farming community and information connected to agriculture, but not exclusively. It also has a significant influence on other aspects of life, such as education, health, and everyday necessities, in addition to allowing communication between the village community and the rest of the world.

2.2 Development of E-Agribusiness Theory

Agribusiness is typically characterized as a set of operations that begin with the production phase and include harvesting, post-harvest, marketing, and other agricultural-related activities (Soekartawi 2003). The phrases E-Agriculture and E-Agribusiness were used to describe the importance of ICT in agricultural activity. As a result, E-Agricultural and E-Agribusiness is essentially the use of ICT in agriculture or agriculture-related business. To put it another way, E-Agribusiness is E-Commerce for agriculture. Ingale et al. (2007), also given a similar definition about E-Agribusiness. Then, E-Agribusiness, as recently described, is E-Commerce or E-Business in the sector of agricultural business. So, what exactly is E-Business? E-Business may be defined as business operations conducted using electronic services, based on the terms 'e' (electronics) and 'business' (business). E-Business is a transaction of goods and services through electronic services, as business activity is essentially a transaction of commodities and services. Apart from that, when it comes to agriculture, the phrase E-Agribusiness is frequently used.

2.3 What is the Important of E-Agribusiness Platform?

E-Agribusiness is growing increasingly essential and popular among business people, not just for agricultural products but also for other agricultural-related items such as services (Soekartawi 2005a and b). The following aspects, among others, contribute to the benefits of E-Agribusiness. The first important element is reducing costs. For example, corporate communication in the past used traditional methods where it took a long time to interact with customers, but unlike now where communication methods have changed to more sophisticated technology, easy, fast, and most "importantly", it only requires low costs. Next, saving time which is communication by traditional methods such as telephone, fax, and correspondence requires a lot of time. So, by using the internet, whether it's for sending e-mails or have a conversation, time may be saved.

Besides, the next element is easily and rapidly integrating the supply chain. Using the internet, even the most complicated trade processes such as supply chains, may be simplified using the internet's capabilities. Other than that, become a 'worldwide' promotional event at a low cost. The firm or traders' gains market exposure that

can be seen and known by the whole world by using the internet. Furthermore, the diversification of the formation of corporate profits. In addition to the benefits derived from traditional methods that do not make use of the internet, there is now a new option, namely commerce through the internet, which is a new revenue stream. On the other hand, shorten product cycle time. By leveraging the internet, the product cycle is shortened and resulting in a larger number of business processes, then it also generates higher profit.

Apart from that, increase customer loyalty. Customer happiness has become a reference point in modern business. The more devoted consumers, the better for the company's growth and trader's business being developed. Customer loyalty may be increased in a variety of ways by using the internet. According to Soekartawi (2002), in his book 'Marketing Management of Agricultural Products: Theory and Its Application,' is just a method for marketing agricultural products using the internet's benefits that is E-Agribusiness. Other than that, E-Agribusiness application can be utilized in all agricultural operations and sectors, starting from the process of agro-food production until marketing process towards customers.

2.4 What is the E-Agribusiness Mechanism?

The role of producers, customers, and the media are all three participants in this E-Agribusiness system which is the role of the producer. Manufacturers use the internet to sell their products. Then, the function of appearance, completeness of accessible information, convenience, and, of course, the price of goods become crucial in order for this sales campaign to capture customer attention. Besides, the role of the consumer. Consumers have the right to acquire comprehensive information as potential customers so that they are not disappointed in the future. This information might include things like pricing, the quality, delivery method, how long the products will take to arrive, how to pay and so on. Next, the role of the media. The presence of information on the internet must be organized and portrayed in a way that customers will recognize. Information in the media must not only be accurate, but it must also attract the interest of potential buyers. The importance of internet specialists, computing professionals and information technology experts is highlighted in this situation.

2.5 Scope of E-Agribusiness

In agriculture, E-Agribusiness has a lot of potential, especially in horticulture and processed goods. Agro products such as mango, grapes, spices, other fruits and various kind of vegetables are in high demand on both the domestic and international markets. Other than that, sugar and tea are processed agricultural goods. Then, dairy products like drinks and other items will be sold online to generate higher profit and

increase the income of market traders. Besides that, farmers may receive up-to-date regarding market information and sell their production via electronic medium.

2.6 Advantages of E-Agribusiness

There are several advantages of E-Agribusiness, that is a global market. The usage of the internet is unlimited, so that, people around the world are using it in their daily lives. E-Agribusiness also use this kind of system because it is easy to attract customers in a short time. Apart from that, inventory costs. By using just-in-time solutions, E-Agribusiness may significantly reduce inventory expenses. It also improves the firm's potential to correctly predict industry demand. In Addition, consumer service. Consumer and after-sales service costs typically contribute for at least 10% of E-Agribusiness operating costs. Many services may be made available online, as well as improvements in product and service quality. Furthermore, distribution period. Consumers submit purchases quickly on the internet using E-Agribusiness, and items are delivered in the traditional manner. Next, easy reach of the system. Small and medium-sized businesses may also use the internet to deliver information about their products and services to all prospective consumers across the world at an affordable price. Other than that, direct link included between many parties. Enterprises and traders may use the internet to create direct connections with consumers, essential suppliers and distributors, making it easier to conduct transactions and share trade information.

2.7 What are the E-Agribusiness Restraints?

Although E-Agribusiness offers many advantages and benefits, it also has certain flaws. These flaws, among others, are as follows:

Not every area has access to internet network facilities or services. As a result, the issue of infrastructure availability becomes extremely critical. Next, *this E-Agribusiness method is not being familiar by a few consumers in the term of doing transactions.* This might be as a result of inexperience or trying something unexpected. Other than that, *software for this E-Agribusiness is not accessible in all locations.* Even if there is, it is frequently prohibitively expensive. Certainly, specialist software such as Intershop Online (Intershop Communications product), Merchant Server (Microsoft Corp product), Electronic Commerce Suite (iCat production), and others are now available to construct this E-Agribusiness system. Moreover, *not everyone possesses a credit card.* Even if they have a credit card, many customers are still cautious due to security concerns. Concerned that the credit card information supplied may be used inappropriately by other unscrupulous parties. On the other hand, *difficulties created by the features of the agricultural product itself,* such as

its bulky nature (big volume but low value), products sometimes being seasonal of times, standards differing between nations and so forth.

2.8 Technology Acceptance Model in E-Agribusiness

This paper presenting an integrated theoretical framework based on the technology acceptance model (TAM) towards the trader's acceptance, then also the intention to utilize ICT enabled products and services (Amin and Li 2014). This paper also focuses on the intention to use new technology which is E-Agribusiness by market traders. Besides, the latest study falls in the first category since it aims to identify commonly used variables influencing Perceived Usefulness and Perceived Ease of Use in three specific "sectors", which is *e-learning, agricultural and virtual reality*. A variety of theoretical models have been suggested to help explain the elements that influence information technology adoption. On the other hand, Davis first introduced Technology Acceptance Model (TAM) in 1986.

Two cognitive beliefs were posited in TAM which is perceived usefulness and perceived ease of use. It can be seen that the theory of Technology Acceptance Model also can be use in the form of E-Agribusiness technology, because it is using the same based like E-Commerce which involving the ICT in the term of intention to use new technology in their business. According to TAM, the user's behavioral intention, attitude toward using, perceived usefulness of the system and perceived ease of use of the system all impact one's actual system usage of a technological system, either directly or indirectly. External variables, according to TAM, influence intention and actual usage via mediating effects on perceived usefulness and perceived ease of use.

Other than that, according to Amin and Li (2014), which intended to confirm TAM as a helpful theoretical model for understanding and explaining traders' behavioral intentions to utilize IT services in developing countries, which was stated above. According to TAM, the attitude toward utilizing a new technology influences users' behavioral intentions based on the theoretical framework. As a result, PEOU and PU may be significant antecedents of (A). Thus, explanatory variables will affect each determinant, assisting in understanding the psychological construct underpinning adoption behavioral intention.

Next, the direct links between latent constructs, which are unobserved variables represented by measurable variables, are then characterized as an inner model. PEOU is also thought to have a mediator effect from PU to A, which is characterized as an indirect effect because the link involves at least one intervening construct (Hair et al. 2013). This paper differs from others in a variety of ways. This study focuses on E-Agribusiness application usage by utilizing the original TAM framework, that is TAM 1 with 5 variables. Additionally, Davis has developed TAM in 1989 with the goal of identifying users' acceptance or rejection of technology (Lindsay et al. 2011). This approach incorporates perceived ease of use, perceived usefulness, attitude towards use, behavioral intention to use, and actual system usage. These five variables can be discussing and explaining in the paragraphs below.

2.8.1 Perceived Ease of Use

The degree to which potential users believe the target system to be simple to deploy is described as perceived ease of use. To put it another way, potential “users”, not anticipating significant difficulty in learning and applying these technologies (Chuttur 2009; Surendran 2012). Besides that, Venkatesh and Bala (2008), propose a definition of PEOU that focuses more on the usage of information technology systems and applications. PEOU is described as the level of confidence in the use of information technology (IT), or the degree of confidence that applying the technology does not necessitate a lot of effort in its use or application, or that it does not necessitate a lot of hard work on the part of its users. Thus, the new technology either prefer or not by traders based on the features provided in the system to easiest their work.

2.8.2 Perceived Usefulness

Perceived usefulness, according to Chuttur (2009), is the degree to which a person feels that adopting a certain system would improve their job capacity. According to Venkatesh and Bala (2008), perceived usefulness is defined as the degree to which a person feels that deploying information technology would improve a user’s job competency. According to Fadare et al. (2016), individuals choose to use or not use it based on their level of belief that the application may help them perform a decent job. Because of that, the advantages and benefits gaining when using new technology such as E-Agribusiness can increase a trader’s productivity and can speed up the process of selling their goods.

2.8.3 Attitude Towards Use

Previous research has revealed that perceived usefulness influences people’s attitudes toward technology use (Bashir and Madhavaiah 2015; Marakarkandy et al. 2017; Ratnaningrum 2013). A person’s evaluation of whether it is good or bad for a particular activity is based on personal characteristics and factors known as attitudes (Ajzen and Fishbein 1980). Next, Ajzen (1991) also describes attitude as “the extent to which a person has a favourable or negative judgement or appraisal of the action in issue.” The attitude an individual has toward an activity to be performed is an essential indicator of actual conduct by taking into account the acceptance of the most recent innovation. Because of that, the determination from the usage of technology was based on the attitude of “users”, whether they show a good perception or not in using this kind of technology.

2.8.4 Behavioral Intention

Behavioral intention is interpreted as a person's perceived likelihood of engaging in some particular action (Ducey 2013). Behavioral intention measures a person's desire to engage in particular activities (Marakarkandy et al. 2017). Behavioral intention is used to determine the likelihood of someone using an application (Surendran 2012). Behavioral intention also plays an important role in developing the new technology, because when the users see this kind of technology that can help them towards selling their products more efficiently, at a lower cost, and with features of the system that can attract more customers rather than the ordinary method, then traders need to switch towards virtual business in their everyday operations.

2.8.5 Actual System Usage

According to Kim and Kwahk (2007), actual usage relates to the frequency and duration of technology use. The real usage can be defined by its intention, based on the Technology Acceptance Model (TAM). As a result, actual usage might also indicate that an individual's desire to utilize technology will determine whether or not they will actually use it (actual usage) (Davis 1989). Prior research has found that behavioral intention has a significant impact on actual behavior. Furthermore, according to the TAM model, perceived usefulness and perceived ease-of-use predict behavioral intention, which determines actual usage. On the other hand, according to Sani et al. (2020), actual usage is the degree to which you believe the system you're using is acceptable and the extent to which technology is used. The acceptability of "traders," whether they wish to use this type of technology or not, determines the real system utilization. Hence, when they use advancement technology, it can improve their work and they will not have left behind as various businesses are now employing the online system in marketing their goods, same goes to selling agricultural and agro-food products by market traders.

2.9 Propositional Statement

The following are the propositions of this study that will be developed:

Proposition 1: Perceived ease of use will affect the perceived usefulness towards adoption of the E-Agribusiness application system.

Proposition 2: Perceived ease of use will affect the attitude towards adoption of the E-Agribusiness application system.

Proposition 3: Perceived usefulness will affect the attitude towards adoption of the E-Agribusiness application system.

Proposition 4: Perceived usefulness will affect the behavioral intention to use towards adoption of the E-Agribusiness application system.

Proposition 5: Attitude towards use will affect the behavioral intention to use towards adoption of the E-Agribusiness application system.

Proposition 6: Behavioral intention to use will affect the actual system usage towards adoption of the E-Agribusiness application system.

3 Research Methodology

According to Bryman and Bell (2015), describe distributing questionnaires to a group of people in order to get information regarding their ideas, attitudes, habits, and societal concerns. The population of the study consisting of all entrepreneurs that sell agricultural and agro-food products in the markets. Technically, this paper will use explanatory research design. Explanatory research is a method or type of study in which the primary goal is to learn and understand the characteristics and processes underlying the relationship, and connection between the independent and dependent variables. Next, explanatory is conducted for a problem that was not studied before in-depth. This is because of lacking research that has been made in the context of Malaysian regarding behavioral intention towards the E-Agribusiness application system.

To complete this study, questionnaires will be using in data collection. The questionnaires will be dividing into two sections and it will be distributing by online. The first section contains a statement about the respondents' backgrounds, while the second section contains information on the variables' measurements, that is perceived usefulness, perceived ease of use, attitude towards use, behavioral intention to use, and actual system usage. The second part will use 7 Likert-type scale, which "1" indicating extremely disagree and "7" indicating extremely agree (Komalasari and Ramadhani 2020).

The study will use both primary and secondary data. The primary data will be collecting by administering the online questionnaires to respondents who meet the predefining criteria. In the meanwhile, secondary data will be gather from a literature review of a variety of scientific publications, including books, research papers, research journals, theses, and dissertations. Research shall further aid through the articles published in relevant print and electronic media. PLS-SEM was the analytical tool that will be use in this study, then SmartPLS 3 software will be use to process the data. For these variables, T-tests will be use to compare the means of respondents and non-respondents. There are no statistically significant differences, thus enables generalizing findings to the sample (Miller and Smith 1983).

SmartPLS also is a statistical package created largely by a group of German academic software developers (Ringle et al. 2015). This statistical tool conducts the SEM analysis by utilizing Ordinary Least Square of estimation approaches (Hair et al. 2011; Ringle et al. 2013; Hair et al. 2014), and generally used by researchers

in examining the theories. SEM is one of the most prominent statistical procedures available to quantitative management researchers for data analysis, and it is one of the most complete statistical tools for examining correlations between observable and latent variables (Hoyle et al. 1995). So, this software is suitable to use in this study to get the accurate data system rather than using other software to be a match with this topic.

4 Conclusion

In conclusion, this paper will contribute to the process and development of my research paper. First, this paper is examining the actual meaning of E-Agribusiness and its relation in E-Business, and how the new technology can be applying to traders in the market. E-Agribusiness is a new way of promoting and selling agricultural products that has the advantage of reaching a large geographic audience, and giving precise product information at a cheap price, same goes to the way E-Commerce operated. Apart from that, similarly to other research, the purpose of this paper can help my research in determining the TAM as a helpful theoretical model for understanding, and explaining traders' behavioral intention to use ICT services in the context of Malaysia. E-commerce, also known as E-Agribusiness in the agricultural industry, has become an inseparable element of the business operations that drive Malaysia's economy. In addition, this paper may contribute to the creation of the contents of my research paper as well as provide more information towards my study, in knowing a detail about the intention to utilize this innovative technology towards adults, which can be classified as a local trader in Kelantan's market.

Other than that, through this paper, it is clarifying that many firms are changing the way they do business as a result of the changing industry of agriculture. Customers have access to new channels as a result of E-Agribusiness. In agriculture, the usage of information technology and information systems is increasing. The usage of the E-Agribusiness, which may transmit all operations carried out by agricultural entrepreneurs, is one of the most significant elements. Next, E-Agribusiness may be carried out simply by leveraging current technologies such as content management system technology, which does not require big resources, such as the content generation and administration that is simple to set up. So that, E-Agribusiness operations can be carried out easily at anytime and anywhere. Furthermore, this paper can be used as a reference and guideline for my research to learn more about the theory of agribusiness and electronic agribusiness, and the intention to use this kind of technology by traders in Kelantan, then the involvement of TAM theory, and how the variables can influence behavioral intention and actual system usage.

Aside from that, the data will be collecting base on various questions of variables that will be giving using Google Form, and will be distributing by a researcher regarding this topic to respondents for the purpose of quantitative analysis data. This study focuses on providing evidence on the relationship between the variables as

well as a helpful solution to the problem of new technology adoption and acceptability among Malaysian traders or adopters. The findings of this study will help in changing the attitude of the agricultural product traders targeting in the study, allowing them to accept and adopt technology. This paper is also expecting to benefit traders, wholesalers, and agro-food organizations by assisting them the efficient technique to market their agricultural products, as well as can attracting a large number of customers to make purchases on their platform, based on the various agricultural goods they offer and advertise towards their customers.






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Factor Accepting Internet of Things (IoT) Among Generation Y



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Abstract With the rapid advancements in the Internet technology, many retailers are embracing Internet of things technology in their operation. The usage of IoT is to enhance customer experience and improve efficiency. The rise of usage IoT in retail sector is believed to associate with the increasing number of generation Y in spending online. Therefore, there is urge in investigating factor affecting IoT among generation Y in purchasing online. This study will extend the UTAUT Model by analyzing the perceived risk, perceived trust, interactive communication and attitude towards accepting IoT technology among generation Y.

Keywords Internet of Things (IoT) · Perceived trust · UTAUT model · Perceived risk · Interactive communication · Attitude

1 Introduction

The Internet of Things (IoT) is a progression of the conventional internet towards a system of intelligent things and devices connecting the physical and digital world. The IoT describes the pervasive presence of objects which can interact with each other through wireless telecommunication (Atzori et al. 2010). By augmenting physical things and devices with abilities to sense, compute and communicate, these objects form a collective network (Guo et al. 2013). Building on Tan and Wang (2010), this study continues with the IoT in retailing as a smart and supportive environment which is based on connecting objects and assortment items via sensitive, responsive

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and adaptive technologies with devices enabling the consumer to experience an augmented shopping experience in- and outside the physical store.

2 Literature Review

2.1 Factor Affecting Customer Acceptance Towards Internet of Things (IoT)

2.1.1 Facilitating Conditions

Facilitating conditions of UTAUT describes users' perception if they have the necessary resources, capability, and a sense of control in successfully performing the behavior. In other words, it facilitates people's engagement in seeking relevant information. Users need to possess the fundamental mastery to use IoT systems/devices. For example, when the railway staff use mobile IoT devices for maintenance of the train's mechanic parts and monitoring the temperature of the wheels, if they do not have the capabilities needed to operate the IoT systems, anxiety of control and negative evaluation of the IoT technology could be aroused. On top of that, facilitating conditions as an assemble in UTAUT refers to the extent to which an individual regard that organizational and technical infrastructures required to use the intended system are available (Ghalandari 2012). It basically illustrates how much an individual would trust that an organizational and technical infrastructure exists to support use of the system (Ventakesh et al. 2003).

2.1.2 Effort Expectancy

Effort expectancy can be interpreted as the was interpreted as a desire or expectation to use technology based on convenience. It is concerned with users perceived exerted efforts when using the IoT technologies/services. For IoT users to adopt IoT, they need to feel that IoT is easy to use. The relationship between effort expectancy and behavioral. Extensive previous studies state that perceived ease of use is a significant determinant of behavioral intention was often found to be significant and positive (Ventakesh et al. 2016). The basis of this concept essentially is easy-to-use system make users more willing to adopt them.

2.1.3 Social Influence

The social environment of the decision maker should not be overlooked when considering the acceptance of technological advancements. Social influence is an important factor as the opinions of the social surroundings have a strong influence on user

behavior. (Cimperman et al. 2016; Kijsanayotin et al. 2009). This is especially true for products and services that are still in the early stages of development or adoption. Majority of users do not have access to credible information concerning use details. As a result, the importance of social network opinions for individual product evaluations grows. Consistent with Venkatesh et al. (2016), we include the factor of social influence in our study model to account for social context, which is defined as a user's impression of whether other key individuals believe they should engage in the behaviour. Social influence is similar to subjective norm of theory of reasoned action (TRA) (Venkatesh et al. 2003). Influence from peers, family, and even media such as television, might influence users' intention to adopt IoT technologies and services. Many users have used mobile IoT devices because it is portrayed as a trend by the media. The topic of social influence has gotten a lot of press in the IS field. For example, Palau-Saumell et al. (2019) emphasized that social influence can be considered as the most powerful forerunner of the intentions to use. In the varieties of studies conducted based on the UTAUT model, a remarkable influence on the intention of use can be credited to the social influence factor. (Afonso et al. 2012; Hoque and Sorwar 2017; Tosuntaş et al. 2015; Yildiz Durak 2018; Zhou et al. 2010).

2.1.4 Performance Expectancy

Performance expectancy refers to users' feelings of improved performance when they use the technology. IoT technologies can supply retail stores with faster processes, lead to less queuing time, and improve service quality perceived by users. For example, in the context of wearable medical devices, effectiveness can be viewed as the extent to which the device can assist consumers in monitoring daily physical conditions, making self-care plans and minimizing threats to one's health. Thus, PE describes as how confident one is that the technology will improve end users' healthcare experience. End users' perceptions of more effective health management, greater access to healthcare services, and overall quality of life improve as their PE of connected healthcare devices rises. This has a favourable effect on end users' ease of use of connected healthcare devices (Hoque and Sorwar 2017). Also, applied IoT technologies to railway section, maintenance staff can receive data from the transponders installed in trains through a mobile reader in their hand to decide whether they need maintenance, thereby improving the efficiency of maintenance tasks (Wang et al. 2013). The system automatically keeps an inventory and plans maintenance schedules based on accurate mileage for each part of the train, rather than just age. Accordingly, the perceived usefulness of IoT technologies is likely to be high. Consumer pleasure and intention are both increased when services are convenient, according to existing studies. IoT technologies are expected to have higher adoption rates if they can make consumers' lives easier.

2.2 Attitude Toward Acceptance of IoT

Attitude towards behaviour refers to the degree at which a person attributes to either a favourable or unfavorable behavior upon critical assessment of that behaviour. Achituv and Haiman (2016) found that doctors had a good attitude regarding IoT-based medical equipment, indicating that they were aware of and prepared to employ the technology. According to Kim (2016), the majority of IoT consumers have a good attitude toward utilising IoT devices and believe the information provided is of higher quality. Liu et al. (2017) reported that the majority of IoT users in healthcare had positive opinions on useful capabilities and preferred solutions in areas like inventory or material tracking, as well as identification and authentication, which might increase the efficiency, convenience, and safety of healthcare services. Barsaum et al. (2016) found that even patients held favourable views towards using IoT devices. It was also discovered that if the perception of risks involved is small, user's attitudes toward using an IOT-based application is stronger. (Alraja et al. 2019). From the Theory of Planned Behavior perspective, Ajzen (2005) declared that before a consumer decided to behave, he or she is usually affected by the intention to behave on that behavior.

Intention to behave is the tendency of an individual to do or not to do certain behaviour. Intention is defined by the level of the positive attitude of the individual toward particular behaviour and by the level of support from people that are influential in his life, as well as by the beliefs that the behavior will be able to be conducted (Ardhanari et al. (2013). According to Schiffman and Kanuk (2000) attitude is termed as the initial disposition that is learned to behave on something which consistency is required to determine whether he/she likes or dislikes the object. Individual's attitude toward behaviour is proportional to the level of belief attributed to that behaviour or object. Ardhanari et al. (2013) state that in general terms, the preferred attitude is shaped when someone correlates the expected consequence with the behaviour. Perceived usefulness and perceived ease of use are discovered to substantially predict and generate a positive attitude, which, in turn, leads to behavioural intention resulted from their positive interaction (Tsourela and Nerantzaki 2020). On the effects of attitudes on consumers' acceptance of the IoT, literature shows that attitudes toward a technology is an antecedent to intention, creating a belief-attitudes-intention relationship (Lee and Chang 2011; Davis 1993; Mathieson et al. 2001). The attitudes toward the use of a technology is a major determinant of whether a consumer will use it or not (Davis 1993). Positive attitudes lead to the adoption of technology, whereas negative attitudes lead to its rejection. (Liker and Sindi 1997). Researchers applied TAM to online shopping, including the relationship between attitudes and behavior intention, and they found that attitudes positively influence behavioral intentions (Chen and Tan 2004; Heijden and Verhagen 2004; Moon and Kim 2001; O'Cass and Fenech 2003).

Consumer attitudes toward internet commerce have been demonstrated in studies to have a favourable impact on their responses. The intention to buy, the intention to return to the online store, and the intention to promote products to others are all examples of consumer responses. (Balabanis and Vassileiou 1999; Jarvenpaa and

Todd 1996–1997; Korzaan 2003; Shim and Drake 1990; Yoh et al. 2003; Lee and Chang 2011). Moreover, research has found that the interactive aspects of a website are significant in boosting consumers' opinions regarding an online store, their willingness to browse the site, and their intention to make an online purchase. (Fiore and Jin 2003; Gehrke and Turban 1999; Li et al. 2001; Udo and Marquis 2000). Furthermore, Ardhanari et al. (Ardhanari et al. 2013) reveal that, the influence of family and friends also play a major role on user's attitude toward purchase and purchase objective on the acceptance and use of the IoT. Study shows that there is a positive relationship between parent's attitude and children's attitude especially towards a purchase behavior. Thus, in most instances children's attitude toward object is much affected by parent's attitude and referrals from friends. Assael (2004) reiterated that peer influence enhanced the possibility of an informed attitude and purchase behavior as compared to advertising. Tsourela and Nerantzaki (2020) said in their study that technical expertise does not only limited to the skills but instead a collection of encounters, experiences and understanding of new technologies. The experiences with technology vary between individuals regardless of skills which leads to multiple technical identities. This can affect their interaction with the said technology.

Riley et al. (2005) study on the drivers and barriers to online shopping revealed that attitudes toward using technology in general, and Internet technology, influence the propensity to shop online and the perceived usefulness of online shopping. In relation to online purchase behaviour, Goldsmith and Bridges (2000) describe attitudes toward technology as the top tier of a three-tier hierarchy of attitudes (therefore attitudes toward the product and the firm. Indeed, according to Modahl (2000), customers' attitudes regarding technology are the single most important factor of PC purchases and online purchasing. Furthermore, it has been argued that a low level of "technology anxiety" may be a stronger predictor of adopting self-service technologies like the Internet than demographic factors. (Meuter et al. 2003). The level of technology anxiety was also found to influence the overall level of satisfaction, the intention to use the technology again, and the likelihood of engaging in positive word of mouth (Meuter et al. 2003).

Additionally, Athiyaman (2002) indicated that influence from the social media is another important factor of Internet users' intention to purchase online, second only to the attitude towards web purchasing. Similarly, attitudes towards technology also influence consumers' perceptions of the risks associated with online purchasing as reported by Lee and Tan (2003: 879) that: "the perceived product and service failure rates will be higher under on-line shopping than under in-store shopping".

2.3 Interactive Communication/Website Characteristics

Interactive communication also referred to as website characteristics play an important role in online purchase intention (Beldona et al. 2005). Website characteristics also involve the layout, graphics image, information, interactive or communication features, e-commerce and energy management (Chong 2014). A well-developed

website, in terms of content and functions, increases online shopping intention and customer satisfaction, and ultimately increases the return rate (Chen et al. 2010; Schaupp and Bélanger 2005). Consumers can connect to various IoT services through technologies such as grocery store touchscreens, smart shopping carts, websites placed on smart devices, and mobile apps. This type of shopper-facing technology might be the only part of the IoT technology with which consumers interact (Inman and Nikolova 2017). Interactive communication capability should offer consumer's the ability to search for further information regarding a product or service as they are engaged in the use of any technology. For instance, users of the internet should be able to make further inquiries about product or service properties or qualities and receive adequate response before making a final decision to purchase or not (Childers et al. 2001). The stimulating impacts of appealing and intriguing e-tailer websites stimulate internet users to engage in online buying activities. (Ganesh et al. 2010). Website design should include all elements of consumer experience at the website such as information search, order processing, personalization and product selection (Wolfenbarger and Gilly 2003; Ha and Stoel 2009). Again, interactive graphics and colours also please and arouse customers' intention to buy when they are engaged in online shopping activities (Shaheen et al. 2012). Ducoffe (1996) indicate that perceived informativeness as the ability to provide the necessary information to a target audience. According to Grewal et al. (2017), one of the important areas that will shape the future of retailing is "technology and tools that enable consumer decisions". Informational content is one of the need-satisfying functions in E-commerce, according to Hausman and Siekpe (2009). They discovered that an informational website allows online shoppers or potential consumers to compare and assess various options, resulting in increased customer satisfaction and increased online purchase intent. Similarly, Schaupp and Bélanger (2005) state that rich information increases the chance of online purchases by assisting online customers in making better informed selections and increasing their trust in online websites.

Other studies indicated the importance of desirable functions in online websites such as product catalogue, price comparison tool, search engines, shopping carts, and tracing mechanisms. Based on the findings by Chen et al. (2010) for Taiwanese Internet users, a user-friendly interface and convenience of use have a substantial impact on their intention to make an online purchase. Schaupp and Bélanger (2005) show that interactive mechanisms enhance the reputation of e-tailers, and impact online shopping intention positively.

2.4 The Characteristics of Generation Y

The fact that Generation Y is technologically adept is the most intriguing and essential aspect about them (Ang et al. 2009; Kumar and Lim 2008; Martin 2005) with the additional of their great reliant on advanced technology (Evelyn et al. 2011). Generation Y has a lot of resources, they're energetic and action-oriented, they follow trends, and they rely on the media and the internet for information. (Mohamad Nor et al.

2018). Generation Y is an avid Internet user who is open to new technologies and has the ability to form and maintain intimate relationships with others through the Internet. (Lim 2008; Syrett and Lammiman 2004). Another distinguishing feature of Generation Y is its considerable spending power in comparison to earlier generations, making it an important target for marketers (Ang et al. 2009; Farris et al. 2002; Sox et al. 2014) and eagerness to participate in online purchasing. Generation Y is more comfortable with the Internet and is more open to technology advancements (Kotler and Armstrong 2010, p. 98; Pricewaterhouse Coopers 2009). They are equally at ease with online and mobile activities (Jones and Leonard 2008; Pricewaterhouse Coopers 2009).

Generation Y has a significant spending power, according to Retail Research (2012), with about 200 billion dollars in annual spending. They also have the ability to spend money swiftly (Parment 2013; Pentecost and Andrews 2010; Mandhlazi et al. 2013). When it comes to the elements that influence their shopping decisions, Generation Y prioritizes product value before acquiring any item or service from any supplier (An Oracle white paper 2009). This generation will not be concerned about debt and will simply spend when they have money (Aquino 2012). The similar thing happened in Malaysia with Generation Y; according to OCBC, Generation Y has a tendency to buy now and pay later, which generated a market potential for this market segment (The Star 2013; Sox et al. 2014). In terms of branding, Generation Y considers a reputable brand to be a reflection of one's status and is willing to pay more for a reputable brand they favor (Farris et al. 2002; O'Cass and Choy 2008). Furthermore, branding is even more crucial in Generation Y, according to Aaker (1997), because this generation uses brands to represent themselves.

In terms of loyalty, keeping in mind that Generation Y has been exposed to a wide range of options and choices when it comes to purchasing items or services (Evelyn et al. 2011), when compared to previous generations, this set of consumers is thought to be less devoted to a single provider (Greene 2004; Lazarevic 2012). According to an Oracle survey, Generation Y is loyal, but only to brands that can match their interests. As a result, it is critical for a corporation to establish a sense of dedication and togetherness in Generation Y (An Oracle White Paper 2009). Generation Y has a lot of purchasing power, therefore it's become a very important sector for marketers (Sox et al. 2014). Members of this generation are able to spend their money quickly (Parment 2013; Pentecost and Andrews 2010; Mandhlazi et al. 2013). Understanding the variations between generations might help to develop effective marketing tactics (Parment 2013).

3 Conclusion

As of today, previous studies on IOT application among consumers are still very lacking. The absence of a thorough study for the subject creates a loophole for the advancement of the IOT technology. Therefore, this paper aims to enlighten all the issues regarding IOT applications in online shopping among Generation Y. The

current paper is to focus on developing and testing an integrative model of factors that determine the acceptance of IoT technology among Gen Y. The target for the Gen Y is due to their willingness of acceptance for the evolving technologies. Gen Y tends to be more familiar with the concept of fast-changing technologies as they are more comfortable with changes and are open to embrace any new concept within the digital agendas. As to the exposure to the online shopping, Gen Y is taking a step forward in online retails by taking charge of their spending power and keeping true with the loyalty of the brand or instant expenditure once the income is credited into their accounts. This study aims to encourage retailers to utilize the new technology as customer preference is rapidly change overtime. From this study, it will help to open the eyes of the future generations of the many benefits of IOT implementation and how by targeting Gen Y would be the most suited approach due to their nature of technology savvy generation. It will magnify the importance to grasp on the fast pace evolving technologies while adapting to an existing field's concept. This research will prove how IoT experience has helped to boost customer experience and generate new revenue streams and thus will help the business remain competitive in the market. IoT will not only help to magnify the relationship built between brand and customers, but it will help to open a new portal that unlocks future opportunities that will bring only good things to current businesses.

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The Effect of Digitalization of Cooperative on Better Transparency and Competitive Advantage



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Abstract This study attempts to provide insights into how the digitization process might improve cooperative transparency and competitive advantage. A thorough assessment of related and pertinent publications on cooperative digitization, transparency, and competitive advantage was conducted. The cooperative as a kind of economic institution could benefit from the new and current features in the business environment, which have provided a smooth road for the digitalization process. Because corporate operations cannot be carried out physically, and resource and transaction mobilization are limited, digitalization is required during uncertain economic times. Whereas, for the cooperative, gaining the faith and confidence of its members is a major priority. The practitioner will be more motivated, and the digitalization process will be enhanced if they have a better knowledge of how the digitalization process may improve both transparency and competitive advantage.

Keywords Cooperative · Digitalization · Transparency · Competitive advantage

1 Introduction

Cooperatives are non-profit “people-centered companies” owned, controlled, and operated by and for their participants to meet their common economic, social, and cultural needs and ambitions. Malaysian cooperatives consist of clusters of consumers, cultivation, housing, transportation, manufacturing, and services (Shamsuddin et al. 2018). All Malaysian cooperatives are governed by Cooperative Act 1993 (No. 502 of 1993) on 4 February 1993 (Shamsuddin et al. 2018).

A cooperative differs from a firm based on equity or stock ownership in terms of its structure (either private limited or public via listing on the stock exchange or

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over the counter, i.e., without intermediary). Members' cash contributions, loans, and government grants ensure the survival of a cooperative (Musa et al. 2020).

Due to the tough economic conditions because of pandemic covid-19, cooperatives' revenue decreased to RM35 billion from RM45.79 billion last year (Aziz 2021a). The descending trend corresponds with Malaysia's GDP contracting by 5.6% in 2020, the lowest level since 1998. After a challenging year in 2020, cooperative players should rebound with the introduction of technology and digitalisation (Aziz 2021b). Digital business tools such as e-commerce should be implemented and running to avoid more severe losses from the Covid-19 pandemic.

2 Transparency for Better Business Performance and Increase Members' Loyalty

Organizations are encouraged to display transparency, even before digitalization enters the era. Grashuis and Cook (2019) posit that a cooperative which provides better transparency will increase its business performance. They added, this is because loyalty of members increases as the cooperative provides better transparency. By being transparent, it demonstrates openness of the management, and it influences member attitudes and perceptions. According to Susilowati et al. (2014), cooperative performance is based on members' loyalty. For cooperative, the members that signed up with the organization are marked as the cooperative customers. Susilowati et al. (2014) add, service quality and customer satisfaction are a very important concept that cooperatives must understand if they want to sustain in today's competitive environment.

Kasuma et al. (2018) reveal that cooperative members are more likely to be loyal when a cooperation results in financial rewards as well as improves the rapport between organization and members. In the end, such loyalty contributes to the development of commitment and trusting relationships among members. Similarly, Yacob et al. (2016) discover a favourable association between service quality, member satisfaction, and loyalty in their research. Chareonwongsak (2017) claims that the motive for transparency among the cooperative boards of directors has a major impact on cooperative performance. Chareonwongsak (2017) finds that board control, function, composition, meeting quality, skill, and compensation have all been found to affect board member motivation to provide better transparency. Padmaksumah (2020) classified cooperative membership loyalty into two categories: contributing and incentive participation.

As mentioned, there are numerous transparencies expected from a cooperation towards its members, including financial transparency. It is essential that cooperative financial performance is disclosed as a sign of transparency. Cooperatives need to ensure that financial statements are prepared within a financial year and audited by authorized auditors (Masuku et al. 2016). Better financial statement disclosure has a positive impact on microfinance institutions' operational success (Quayes and

Hasan 2014). Thus, it is possible that incorporating the transparency practices into management policy and procedure will reduce the possibility of financial reporting manipulation. The financial performance report's transparency can also help to lessen the ambiguity that might lead to a rise in perceived risk (Agung et al. 2018). This explains that members' satisfaction has a beneficial impact on an organization's profitability and performance because transparency has reduced their concerns.

Rahim et al. (2017) advocate that low transparency is an indicator of poor internal control. Possibilities of lack of data integrity, inaccuracies in both financial and non-financial data are potentially leading to fraud. Cooperative members certainly do not want the cooperative only being transparent on matters that will mirror positive performance. Brandão and Breitenbach (2019) provide evidence that reasons for weak transparencies are due to competition factors, type of market they are in, low member's participation, as well as opportunistic behaviour by cooperative members. Grashuis and Cook (2019) added, financial performance is not the only long-term reasoning for loyalty but transparency of the management team.

According to Feng et al. (2016), the smaller the cooperative, the stronger the social capital, as measured by member participation, trust, contentment, and loyalty. Khafid and Nurlaili (2017) discover contradictory results, claiming that cooperative size, cooperative age, and leverage have no effect on financial success in part. Nonetheless, they discovered that the size and operation period of the cooperative has an impact on financial achievement if it serves as a mediating function for the accountability variable. These findings have crucial implications for policymakers, governments, and cooperative stakeholders in terms of developing effective interventions to improve cooperative members' satisfaction, loyalty, and business performance. With digitalization in place, a cooperation should have better transparency and recognize members' loyalty as competitive advantage to generate better business performance.

3 Competitive Advantage Increase Sustainability for the Business

It is undeniable that in today's digital era, starting a business is not uncommon and has become a way easier, cheaper, and more resourceful than before, especially with the usage of technology. The technology usage has facilitated and even to certain extent eliminated some barriers and hurdles faced by the start-ups business before such as capital requirement, networking, physical store and warehouse, marketing, and advertising stuffs as well as the need of skilled workers. The digitalization simplifies the process and work systems of the business by reducing complexity in the production plan thus facilitating efficient and flexible control and management. Furthermore, it enables the business to be conducted virtually, thus reaching customers beyond the geographical border is easier, besides the advantages of empowerment of employees' decision-making and decentralization of management (Latos et al. 2018).

However, this digital transformation also intensifies the competition among the business as the entry and exit requirement becomes loose. Therefore, the business needs to have competitive advantage to remain standing and sustain in the market especially for the long term. It is imperative for the business to have sustainable competitive advantage that could secure the competitiveness and long-term value and benefits of the business rather than just remain the existence of the business in the market. Prior literature discusses on various ways of achieving competitive advantage, including implementation of value-creating strategy in the product or in the process, and maintaining the business' ability to maintain above-average profit, which are often associated with the high profit and economic value that are not concerted by the competitors (Conto et al. 2016). However, the external factors of economic, social, environmental processes and technological elements play an important role in influencing and synergizing the business' efforts (Sołoducho-Pelc and Sulich 2020; Haseeb et al. 2019). For instance, values and beliefs and IT managerial resources are the elements of technological that are significant in ensuring competitiveness and creating the sustainable competitive advantage for Small and Medium Enterprise, especially through the intervention of sustainable competitive advantage (Haseeb et al. 2019; Ongori and Migiro 2010).

According to the resource-based view, the nature of resources by the business and details of the qualities of the resources are the key elements that must be maintained to translate into sustainable competitive advantage (Adams and Lamont 2003). Basterretxea and Albizu (2011) highlight the importance of the cooperative management training policy as the source competitive advantage of the cooperative in attracting, developing, and retaining the managers of cooperatives. In addition, the digitalization which incorporates the usage of new technology also contributes to increasing the satisfaction of cooperative members by associating members' participation and transparency in the governance structure and values and principles of the cooperative (Boevsky and Kostenarov 2020). The authors further assert that the application technology in the digitization process serves as a medium of exchange between workers and consumers that can be used in a connection of involvement, sharing, participation, mutualism, sustainability, and attention to diversity.

According to Bratos and Marcuello (2017), there are three key issues that are faced by the cooperative in the economic globalization era which are the viability of the cooperatives, their roles in promoting the local development and stability of local communities and the tensions and potentialities in internationalization of cooperatives. Thus, in light of the resource-based view, tangible internal resources serve as a viable business strategy in sustaining the competitive advantage of the cooperative (Othman et al. 2015).

4 Steps to Digitalise the Business

Cooperative is a form of business which requires a rejuvenate process to align with the evolution of digital. This process entails a transformation from the traditional way

of managing the business cooperative to more sophisticated and digitalized cooperative. The transformation in digitalizing the cooperative “concerned with the changes digital technologies can bring about in a company’s business model, ...products or organizational structures” (Hess et al. 2020). However, Nadkarni and Prügl (2021) argue that digital transformation in business will need to bring together competent employees and executives in order to reveal the transformation power. Thus, transitioning business to a digital business requires technologies and skilled employees to handle it. In general, there are seven steps on how to digitize the business which could be applied to the cooperative business on better transparency and gain competitive advantage. Figure 1 shows the steps to digitalise the business which are (1) set digital protocols, (2) provide mobile support, (3) incorporate cloud-based technologies in the business, (4) selection of partnerships, (5) target the end-to-end customer experience, (6) reduce potential bottlenecks, and (7) review customer feedback.

1. Set digital protocols

Planning and goal are the core elements in digitizing the business including a cooperative. It is very important to consider how digitization processes will impact the business performance and transparency. The cooperative needs to know the directions of digitizing the business in order to drive the organisation to become more

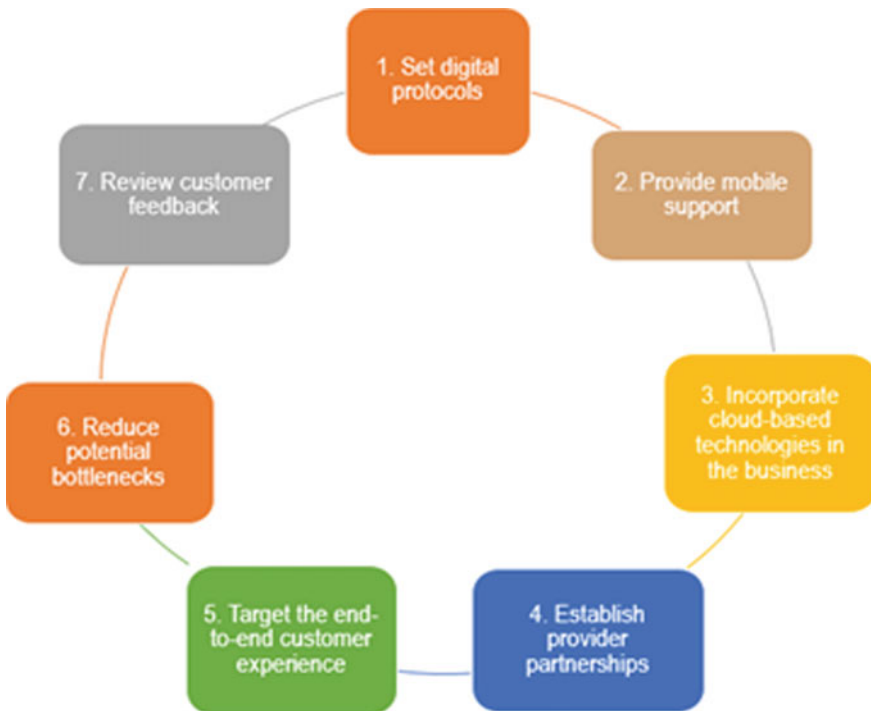


Fig. 1 Steps to digitalise business Source Softlinx (2018)

adaptable to change (Betz 2018). For example, if the business wants to focus on digitizing the documentation, the manager should know how to create, edit, store and transfer the documents. Thus, digitizing the business concerned the types of technology that the business wanted to adopt and adapt and the competence of the manager and employees to conduct the technology.

2. Provide mobile support

Mobile support is the most critical and vital component on how to digitize the business. Today, more than 96% of Malaysians own smartphones (Müller 2021), emphasising the importance of a digitalization strategy that includes mobile assistance. The second steps of digitizing the business require the business owner to deploy a digital services platform that allows for quick innovation, adaptability to new business opportunities (Sebastian et al. 2020) and create value to the customers (Nadeem et al. 2018) especially during Industrial Revolution 4.0 and pandemic covid-19. As a result, if the customers, employees and target customers are unable to use the internal or external digitization features on their smartphone devices, it will contribute to a decrease in sales and profit and demotivate the employees.

3. Incorporate cloud-based technologies in the business

A cloud-based technology, such as a Customer Relationship Management programme and a Knowledge Management System, are frequently included in the creation of a corporate digitization plan. Both technologies are designed to give a single area for the administration of certain information, such as leads, wikis, and other items. The business model of cooperative financial institutions, for example, are encouraged to be shaped through technological advances such as Fintech as to digitize the products and services online (McKillop et al. 2020). This can be seen on the FinTech providers such as in the payments using mobile wallets and digital currencies. Recently, a large number of new FinTech providers and capital raising platforms such as mobile banks and crowdfunding (McKillop et al. 2020).

4. Establish provider partnerships

This step concerns how the cooperative business could reduce the administrative cost once digitizing the business. Although expanding the team and selecting of third-party services providers portray that the business will incur more cost, a cooperative that digitizes the business could reduce its expenses such as expedite the decision process of loan approvals. In addition, the effect of digitalization is able to increase intensity in the collaboration with the partners, facilitate collaboration among partners across industry sectors and provide digitalization knowledge and services as a result of collaboration (Rachinger et al. 2019).

5. Target the end-to-end customer experience

The digitization process involves a variety of team members especially with a different background in technology, designers of the digital business platform, strong communication skills and others with specific skill sets (Rachinger et al. 2019). Those

employees that have the special skills in dealing with the business transformation are enabled to increase the productivity and enhance the services of the company. However, the manager needs to invest some amount of capital to expense the training for the employees with less technology skills (Teece 2018).

6. Reduce potential bottlenecks

In some cases, when the incompetent employees, for example attending intensive IT programme are unable to meet the deadline set by the manager, the manager need to consider additional funds to hire temporary employees. Therefore, the digitalization business could fulfill customers' needs and increase the business competitive advantage.

7. Review customer feedback

Finally, the business managers are responsible to evaluate the feedback from the customers. This is vital to be considered by all the business organisations because their opinion and responses will assist the business to react to necessary changes. In addition, technical resources and digitalization reference documents are important to be accessed by the employees as to solve common issues raised by the customers immediately (McKillop et al. 2020).

5 Cooperative Towards Digitalization

To remain competitive and relevant, there is no doubt that the cooperative sector should capitalize on the disruptions caused by the Covid-19 pandemic by deploying digitalisation initiatives (Aziz 2021a) Digital transformation in the cooperative sector is the process of employing digital technologies to either create new or strengthen current digitized processes, digital channels, digital products, and digital engagement (Leticia et al. 2020). Price Waterhouse Coopers (2016) reported that 100% of the cooperatives surveyed identified digital technology as a key issue. Meanwhile, 50% of the cooperatives describe it as a revolution and 50% as a means of optimisation. Hence, digitalisation is very crucial to cooperatives in other for them to remain competitive in the market.

Even though there are many reasons to embark on digital transformation, the two primary benefits derived from this digital transformation are twofold namely adding value for customers and expanding customer base and improved bottom line (Leticia et al. 2020). Specifically, the digital transformation may add value to customers by providing convenient access, encouraging faster turnaround times, reducing decision-making burden, customizing engagement and better-targeted communication and providing safer finances. In the meantime, this transformation may expand customer base and improve bottom line by strengthening profitability and sustainability, providing simpler data management, preparing channels for faster loan deployment, expanding financial inclusion and financial health, encouraging data-driven decision

making, reducing fraud and loss from cash handling and enhancing brand reputation and customer retention.

Concerning the Malaysian cooperatives, after a bleak year in 2020, the cooperatives should rebound with the adoption of technology. The cooperative revenue was hit significantly by Covid-19 that fell to RM35 billion in 2020 from RM45.79 billion in 2019, which is the country's worst performance since 1998 (Aziz 2021a). Businesses, on the other hand, embraced digital measures to reimburse for the decline in traditional revenue sources throughout the year, as economic experts warned that entrepreneurs who ignored the digital transformation would struggle to survive. In fact, business through a cooperative system is still the best and most effective way to stimulate the development of entrepreneurs in the country, thus contributing significantly to GDP. In Malaysia, the cooperative sector has approximately 6.1 million members, the majority of whom are from the bottom 40% (B40 income group), representing nearly 20% of the total population in the country (www.medac.gov.my).

Ciruela-Lorenzo et al. (2020) argued that in order to compete in a sustainable manner, it is necessary for cooperative to diversify the activity, innovate and collaborate with others, incorporate talent, and use new technologies. Therefore, the first step in the digitalisation process could be to assess the company's level of digitalization using the developed digital diagnosis tool. This tool is used to reflect on and propose new development and improvement strategies that allow for competitive advantages.

Brunetti et al. (2020) found that digital transformation is a prevalent challenge of the regional innovative system that necessitates a multidimensional set of strategic actions organized around three major pillars. The first pillar is "culture and skills," which consists of three strategic areas of action: digital education, talents, and digital culture. The second pillar is "infrastructures and technologies," that emphasizes the importance of information, interaction, and artificial intelligence as major strategic fields of action. Meanwhile, the third pillar is "ecosystems," which emphasizes the significance of investing in medium to long-term visions, partnerships, and life quality.

In this regard, Leticia et al. (2020), propose that, in order to pursue the digital transformation, it is vital for the cooperative to take into account few steps:

i) Cooperative should understand the target market.

Cooperatives must not skip the step of thoroughly understanding their customers' needs and desires. Both current and prospective members should be taken into account. Potential members represent any customer segment that digital could open up and that the cooperative does not currently serve (Nurdany and Prajasari 2020).

ii) Cooperative should understand the issues of regulatory.

Cooperatives already operate in a highly regulated environment, and the digitalization will introduce new areas of compliance that must be carefully considered. One such area is digital onboarding. Cooperatives will need to invest in technology that can electronically verify the identities of new clients.

iii) Cooperative should evaluate the readiness of cooperative digital.

Cooperatives will need to transform their activities, systems, teams, and processes in order to fully digitize. Business processes should be reviewed to determine how and where they can be improved or reengineered. To ensure the architecture is sound, the core infrastructure (core banking system, data warehouse, reporting, dashboards, and integrations) should be reviewed.

iv) Cooperative should begin with the core banking system.

Members of cooperative must have direct connections to flexible and convenient digital channels, which is dependent on the cooperative's digital core banking system. Improving or transitioning a cooperative's current core is the best first step toward digitization.

v) Cooperative should develop cooperative digital capacity.

Many cooperatives will embark on this journey with in-house technical skills that are insufficient to execute digital transformation and re-engineer back-end processes. Technical know-how must be developed and prioritised throughout the organization, beginning with the top management.

vi) Cooperative should continuously develop and assess the business case for digitization.

Cooperatives will need to develop and evaluate the business case for digitization on an ongoing basis. Each digital transformation investment should be evaluated based on its Cooperatives, like banks, will need to digitize in order to survive in an increasingly competitive environment. Competitors are beginning to provide their customers with simple digital access, customized products, and 24-h availability. While cooperatives are aware that they must digitize in order to compete, they have not done so sufficiently. Cooperatives must speed up their digital transformation in order to remain relevant. They can increase their chances of success and reduce costs by collaborating and leveraging collective capabilities.

Cooperatives must take a more proactive and positive approach to digitalisation and the adoption of efficient technological platforms in order to maintain their livelihood in an intensely challenging and digitally driven world (Aly 2020). Cooperatives still have time to evolve. Cooperatives can retain and grow their customer base by prioritizing innovation, and they can continue to be the main financial service providers for lower-income group who benefit from the savings services and low-cost borrowing they provide. Cooperatives can take their place in a digital world with dedication, wise resource management, and strategic decision-making (Brunetti et al. 2020).

Cooperatives should integrate digital technologies into their model as quickly as possible to meet stakeholder expectations. In this juncture, they should realise that by not going digital at the earliest opportunity is considered risky (Leticia et al. 2020). However, seizing the opportunities offered by digital technology is only possible if the business, technological, human and regulatory challenges are well managed (Price Waterhouse Coopers 2016). Although technology has progressed, the key

challenge for the majority of cooperatives lies in their implementation and effective use.

6 Conclusion

Uncertain economic conditions are a fundamental motivation for a company to be innovative and resilient. In fact, digitalization is the only viable strategy for remaining competitive in the marketplace. Profit generating is only one aspect of the system that ensures cooperative organization growth. The most crucial aspect is to retain members committed to the organization. One of the most important ways to achieve this is to keep members informed and give them access to the cooperative's current performance and activities.

As thoroughly discussed above, there are ... ways to suggest how digitalization is related to increasing transparency. As for the cooperative, transparency is important to disseminate information on the cooperative's wellbeing and activities to the members. The more transparent the cooperative to the members, the more confidence, trust, and loyalty the members can be towards the cooperative. This is because the member may gain understanding and be aware of where their contribution goes. By application of digital technology, the information about the cooperative activities and achievement from the business operations can be easily connected and channeled to the members. From the above example, many cooperatives in Malaysia have transformed their business transactions from offline to online. Customers and members can easily inquire related info just from a few clicks and communication with the customer service is available 24 h. Digitalization not only restores member confidence through information disclosure transparency, but it also encourages other best practices that improve the organization's image, such as replacing paper transactions with paperless transactions when disseminating information to customers and members. It also offers clients and members flexible operation hours to contact the cooperative for information.

Furthermore, the cooperative's rapid adoption of digitalization has resulted in added value in terms of competitive advantage. Perhaps the best features for gaining a competitive advantage over common business and industry rivals are being more transparent and closer to members and customers. Competitive advantage is just as vital for business as it is for long-term sustainability. To maintain the legitimacy of the organization among other organizations in the industry, it is either to become a follower or an early adopter of change, according to institutional theory.

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Implementation of the E-portfolio in Teaching Practices in Malaysia IPTA



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Abstract Electronic Portfolio is currently a benchmark for teaching practice. All available information can be distributed to anyone without restricted receptiveness by utilizing the system. For example, E-Portfolio manifests students' artwork to lecturers to share their knowledge and experience online. In addition, the platform allows students to exhibit their competency, marketability, self-confidence, and visibility in previous, current, and future without a natural appearance. E-Portfolio has provided various benefits not only for students, lecturers but the whole community of learning. This researches implement the development process of e-portfolio contents and the challenges for implement E-Portfolio in the teaching practices system in Malaysia.

Keywords E-portfolio · Development process · Challenges · Implementation · ADDIE model

1 Introduction

E-Portfolio in teaching practice is a digital collection created by a pre-service teacher of their course-related work, like a routine lesson plan, teaching reflection report, teaching essays, class video and photographs activities, and collection of assessment form by a school mentor and university supervisor (Leslie and Camargo-Borges 2017). It can also capture other aspects of a pre-service teacher's life, such as trainer

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experiences, employment training history, school curricular activities, etc. In other words, the digital document can make visible trainer learning experience exhibit and manifest professional development as a teacher. It can demonstrate their knowledge of training teaching and classroom overall process. "It is a compilation of elements that documented teaching experience and performance (Naylor et al. 2015).

Typically, it is an individual work of training experience and reflection of practice during a practicum. Importantly preparing E-portfolio demands teaching theories and procedures that need to be an experiment to render explicit knowledge that may currently be implicit (Forsyth 2016).

Furthermore, effective E-portfolios are thoughtful documents, which present a consistent story of the pre-service teaching journey. This novel uses proof that verifies the analysis made about this journey and indicates its impact on student learning. The E-Portfolio is prepared and updated daily to assure professional development is documented and exhibits teaching practices.

This paper presents the implementation result of the E-Portfolio development by exhibit the challenges in implementing the Teaching Practices E-Portfolio in UPSI through a survey of academicians. A total of 500 respondents Google survey form from academicians inside UPSI, engage and participate in manifest their perspective on the development of e-portfolio and its implementation in the teaching practices. Most of the respondents provided important feedback on the advancement of E-portfolio as one of the advancing ways to evaluate a trainer's understanding and experiences. The findings explain the essential things that need to be manifest in e-portfolio materials, artifacts, and the hurdles of implementing an E-portfolio in UPSI.

It highlights the critical part of the teaching philosophy statement about personal teaching orientation and learning within the academic discipline. Simultaneously, the essential teaching disciplines describe delivery strategies, evaluate teaching quality, and describe the pre-service teacher/class (Curriculum 2019). Investigated the relationship between teaching and learning methods employed and teaching materials development and discussed any innovative assessment strategies developed. Also, the reflection discussion on how teaching practices have evolved and plans for future professional development.

2 Literature Review

E-portfolio in teacher education program developed involves three purposes: learning process for professional development, formative and summative assessment, and proof of teacher qualification for career purposes (Ashikin et al. 2015).

The E-portfolio process can illustrate the growth of trainee teachers as a reflective tool that will allow feedback to be corrected immediately. It also saves storage space and minimizes the administrative process usually implemented through the current manual filing system. An e-portfolio is an authentic assessment because it assesses student outcomes based on the actual realities that students perform in

settings (Johnson et al. 2010). The e-portfolio assessment could strengthen students' knowledge; it provides an opportunity for students to identify their needs, reflect, collaborate, and make self-assessments, peer-based assessments, and self-regulation (Wong et al. 2017).

Domestic and foreign researchers conduct many studies related to e-portfolio aspects. Among the study elements emphasized in the e-portfolio are various aspects of students' views on e-portfolio, process, and implementation. Researchers also conduct studies on e-portfolio assessment, but no formal evaluation elements are completed until now (Lu 2021). The following is a review of the literature on e-portfolios based on some of the aspects mentioned.

Implementation of E-portfolio on teaching practices program from students' survey opinion was conducted in Malaysia by Kabilan and Khan (2012); Bala et al. 2012), focusing on pre-service teachers' views on the implementation of e-portfolios in their professional development. Furthermore, in a study on 55 students in the TESOL program at USM, the study's findings show that an online portfolio is a tool for monitoring "monitoring tool" that allows trainee teachers to appreciate the importance of the learning process and identify the critical weaknesses and strengths. Furthermore, teaching delivery efficiency can be improved using the portfolio (Kabilan and Khan 2012), which shows that further.

Surveys have also conducted a study on 20 new teachers in English education from various primary and secondary schools in Johor Bharu. The teacher was involved in compiling an online portfolio for six weeks after training. The research verdicts reveal that these teachers stated changes in their professional development from their involvement in the online portfolio process. They indicated that participation in the process could improve social competence and language skills. In addition, the online portfolio provides a platform for them to develop their ICT skills and creativity. As a result, they are more assured of using technology and more motivated to apply it more widely in the classroom (Bala et al. 2012).

Several works on e-portfolio implementation emphasize teachers' professional development aspects. The researcher conducted a long-term qualitative study among seven new teachers using four-year action research involving e-portfolios among students in the first, second, and third years of research and at the beginning of their work (Boulton 2014). The data collection process involved semi-structured interviews, questionnaires, and observations on participants. This study focuses on the process of transitioning teachers from university to career settings. Findings show a change from teacher training to job settings, self-improvement, and empowerment as a teacher. The study's findings also show an increase in teachers' acceptance of e-portfolio and professional development benefits as qualified teachers. This study shows the importance of e-portfolio as a platform to develop professional identity needs to be implemented and produced at the tertiary level and needs to be disseminated among trainee teachers.

In addition, a study examines the implementation of e-portfolios and the challenges of use among trainee teachers at a university in Australia (Oakley et al. 2016). E-portfolio implementation analysis toward focus group using mixed-method interviews on 23 trainee teachers and four academic staff who teach training courses.

The studies show that it is difficult for students to understand the purpose of the e-portfolio because there are no guidelines, especially aspects of reflection. As a result, they face difficulties in achieving critical level reflection. Apart from that, the study participants also faced technical issues related to the use of technology. Trainee teachers also stated that they would appreciate it if the e-portfolio could be shared with other individuals and not created in privacy. The lack of feedback from the supervisor, especially the aspect of student reflection, is one of the complaints expressed by the trainee teachers in this study. However, these trainee teachers stated that their reflective writing skills are improving. Findings from academic staff noted that an e-portfolio is a platform that can encourage the continuous development of trainee teachers.

A literature review on the qualitative study has examined the factors that influence the adaptation process of trainee teachers using an e-portfolio. The survey of nine trainee teachers of primary and special education in Mississippi, USA, was obtained through conversations and document investigation (Zhong and Hartsell 2015). The study's findings show that the factors that influence students are school factors, social stress, time constraints, past experiences, family, and personality. This statement implies that e-portfolios need to be formed based on a specific framework with a clear description to make the presentation more meaningful.

Research on the implementation and challenges in e-portfolio among trainee teachers in Australia's study involves 79 respondents of Year 4 Degree in Early Childhood Education and Special Education students. They have been practicing E-portfolios after the session, and they need to answer questionnaires and interviews with focus groups and individuals. The data shows that among the challenges faced include the time limit for using e-portfolios, lack of assessment aspects cause students not to answer given characteristics, students do not understand the instructions given, and have obstacles in terms of technology (Roberts et al. 2016).

Studies on e-portfolio assessment by Roberts et al. (2014) on several literature studies on reflection assessment in e-portfolios found that most reflection processes are not authentically asses. Therefore, researchers have provided four principles that can improve evaluation in the process of reflection. The four principles are 1) Applying practice based on current practice (practice-based task) as an aspect that needs consideration. 2) Students should be given a detailed guide or model to reflect on. 3) Provide students with self-assessment of reflective writing in an environment where they can control what they can share.

An E-portfolio appraisal investigation was also conducted, which measured the trainee teachers' self-appraisal practice (Yang et al. 2017). This qualitative research utilizes an assessment framework for Portfolio Assessment for California Teachers-Teaching Event on 14 English trainee teachers. The study's findings show that trainee teachers show progress when using the framework. Still, the development of sub-skills in four things is needed further to strengthen the teacher's analysis of teaching and learning.

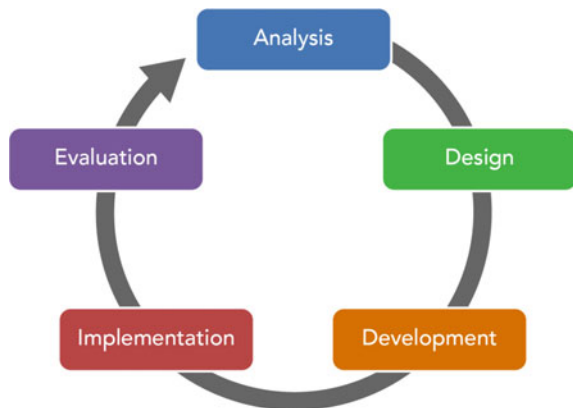
This study gives implications to the aspects of assessment in an e-portfolio that can help teachers improve teaching and learning. A carried out a project under the EUFolio Project involving 15 schools in Slovakia (Ghoneim and Ertl 2016). This

study involved 80 teachers using an e-portfolio as a formative assessment tool and their success in implementing the strategy. This study uses several data sources: self-assessment questionnaires, teacher teaching planning plans, and focus group interviews. The study’s findings show that all teachers have used all the elements in formative assessment through the e-portfolio platform. The results also show that teachers and 350 students build their e-portfolios using virtual space and practice self-regulation in their learning process.

A study related to the E-portfolio implementation at Universiti Pendidikan Sultan Idris (UPSI) through the MYGuru system platform using survey analysis on students’ perceptions to assess their soft skills (Baharom 2017). Respondents involved a total of 78 students, and the other 5 participants were interview. Data were analyzed based on the Personality Development course, where critical factors were listed through e-portfolios, surveys, and interviews. The study’s findings show that trainee teachers agree that the e-portfolio has the ability as an assessment tool to assess soft skills. The survey findings also found that trainee teachers are willing to use the e-portfolio system to evaluate soft skills.

A study shows that most existing e-portfolio platforms fail to improve teacher practice and enhance professional development and student growth and learning (Chang et al. 2011). Its dues to no assessment tool can guide trainee teachers to analyze professional development in teaching practice and other processes. Referring to the past research, it is clear that the assessment element is a critical element. However, most study participants faced difficulties understanding and actively engaging in the e-portfolio platform due to a lack of systematic guidance relatively vague assessment implementation. Therefore, a survey of constructing a comprehensive e-portfolio system containing modules and user manuals and complete rubrics should emphasize giving trainee teachers a clear picture of the essential elements to boost their quality. In addition, systematic assessment instruments can provide clear guidance to prospective teachers to produce a portfolio of teaching training that can increase their professional development (Fig. 1).

Fig. 1 E-portfolio using an ADDIE Model proses development



3 Methodology

This study will use the ADDIE Instructional Model (Allen 2006) involving five stages: Analysis, Design, Development, Implementation, and Evaluation.

The First Stage (Analysis)

The researcher will study the need to develop an E-Portfolio System Model of teaching practice at this stage. The researcher will conduct a needs study comprising 60 students who will undergo teaching training to examine their conditions for developing the e-portfolio training system. In addition, the researcher will also discuss the development of the system based on the literature review, the theoretical framework in the e-portfolio model.

Stage 2 (Design/Design)

In this phase, the design will consider creating the e-portfolio system and the modules produced in the system. It covers target groups, examines objectives in developing e-portfolio systems, selects information delivery methods, graphical aspects, layouts required by users, etc. In this phase, modules and user manuals will be determined, and choose the learning objectives required in the e-portfolio system.

Stage 3 (Development Phase)

At this stage, learning content, as well as instructional learning, is developed. The researcher will validate each instructional unit/module, including the validity process. It includes internal assessments related to instructional strategies and related content individual and group verification. The system operations are based on evaluation feedback in formative and summative activities. Subsequently, after building this e-portfolio system, this phase continued to gain expert consensus on face validity, content validity, and constructs through the application of the Delphi. This method involves selecting five experts (Subject Matter Expert; SME) with various backgrounds (education and Instructional Education) to evaluate and validate the module's content and instructional design. Thus, data were collected through four stages:

Level I: Experts evaluate the content of the application built.

Level II: Identify expert consent and disagreement about the theme's content in Level I through the proportion of items. In Level II, experts will comment on content, improve the content and add new content in line with e-portfolio objectives.

Level III: The panel will re-rate item changes based on item changes in Level I.

Level IV: In the last stage, the expert will give the previous item to be studied, and the expert is allowed to see the views or proportions of other experts.

Study procedures involving experts will be put together in a workshop to determine the agreement engaged with the study.

Stage Four: (Implementation/Implementation)

At this stage, educational instruction operated.

Stage Five: (Evaluation)

The evaluation or evaluation stage is a continuous evaluation that takes place formatively that evaluates the processes and materials conducted during the analysis and design stages. The evaluation process is carried out during the developmental stage, which includes individual and group evaluation. The summative assessment contains experimental operations, which is the final step in the validity process. Two facilitators will evaluate the research team on 100 trainee teachers at UPSI. This one-day workshop consists of sessions that include demonstrations using the applications developed. Next, the sample will then answer a questionnaire or Google Docs Application to evaluate their feedback related to the application to see aspects of the course, content, assessment, time, navigation, multimedia, interactive process, design, and overall experience. The data will be analyzed using SPSS descriptively to determine the overall evaluation of the applications developed.

4 Analysis and Discussion

The summary presented by the Google survey form showed that 500 respondents, which are academicians, engaged in the survey. Referring to Fig. 2, respondents from 9 faculties, namely FPM, FSKIK, FPTV, FSK, FSSKJ, FPE, FSM, FBK, and FMSP. A total of 227 respondents from FBK equivalent to 44.2%, 6 respondents representing 1.2% from FMSP, 15 respondents from FPTV equivalent to 2.9%. Twenty-two respondents equal 4.3% of FSK, while from FSKIK, a total of 142 respondents equals 27.6%. FSM consists of 96 respondents, equivalent to 18.7%, and a total of 1 respondent equivalent to 0.2% from FSSKJ (Table 1).

The survey queried respondent’s experience and interaction in the portfolio platform. It comprises Google Site, Sahara, WordPress, Blogger, Live Pebblepad, and

Fig. 2 Respondent enrolment by faculty

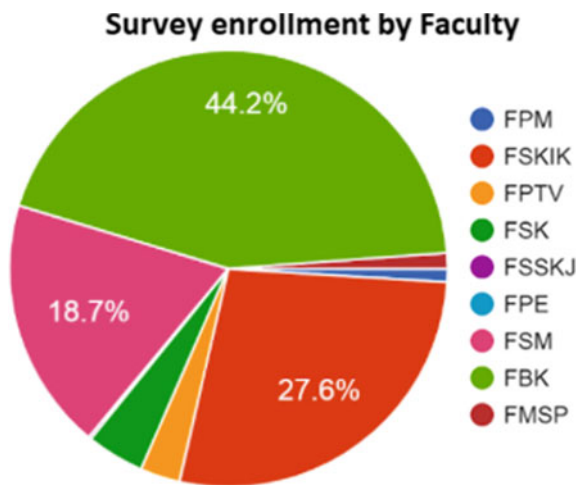


Table 1 Result analysis selection of Strongly Agree, Agree, and Neutral

Internet Access capabilities and understanding of Portfolio platform				
Part	Item	% - 1st	% - 2nd	% - 3rd
1	Interaction on respondent's experience and interaction in the portfolio platform	81.9% Google Site	71.9% Blogger	45.5% Work press
2	Have access to mobile phones/laptops/computers/electronics devices	52.1%	38.7%	8.8%
3	Have access to the Internet capability	37.2%	42.4%	18.3%
Perspective on E-Portfolio understanding				
4	Write reflections on teaching practice in an organized manner	26.7%	50.6%	20.6%
5	Make self-assessment, peer-based assessment, and self-regulation	22.8%	50%	25.3%
6	Using the e-portfolio platform in the teaching training process	21%	41.5%	30.2%
7	Increase motivation for the process of continuous professional development in teaching practice	26.8%	50%	21.2%
8	Organize teaching and learning materials flexibly	31.7%	50.4%	16.5%
The Development of E-Portfolio content				
9	Document teaching and learning materials flexibly	20.8%	53.3%	23.5%
10	Read and understand the content in the e-portfolio	23.9%	51.9%	22.8%
11	Clear instructions in the e-portfolio platform to avoid confusion	53.1%	33.1%	12.8%
Challenges in Implementing E-Portfolio				
12	Save storage space on teaching training-related materials	31.3%	47.9%	19.5%
13	Upload and download materials for teaching	33.1%	52.9%	13.2%
14	Quickly review previously uploaded materials	38.5%	47.9%	13.2%

the Wix platform. Logically, the replacement of people signifies their perception of the current advancement of I.T. in their social context. Based on Fig. 3 (Part 1), 411 respondents, or 81.9% of academicians, choose "Google Site" as an e-portfolio platform they have heard or visited. The findings found that most respondents choose Google Site as an e-portfolio platform that they have heard or visited with the highest percentage. It also demonstrates that most respondents are aware of I.T. development by having experience in portfolio platforms. People now favor interacting in the virtual world preferably than in an actual face-to-face meeting.

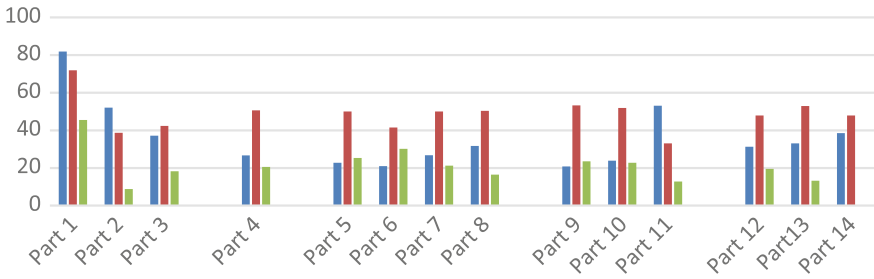


Fig. 3 Result analysis selection of Strongly Agree, Agree, and Neutral

Moreover, most respondents own their website and blog via Blogger, Google Site, Sahara, Wix, etc. Consequently, most of the respondents are IT-literate. Thus, the development of I.T. in educational institutions cannot likely guide to creating an E-Portfolio as a platform to improve academic learning. Recognizing that most respondents are IT-literate, all also own their devices to collect information obtainable online. For instance, in Fig. 3, they access laptops or notebooks, desktops, mobile phones, and tablets. Hence, by applying those devices, entirely the information distributed online is at their fingertips.

Figure 3 (Part 2) shows the findings that as many 52.1% “Strongly agreed” that they have the existing knowledge to access mobile phones/laptops/computers/electronics devices. For option, “Agree,” a total of 199 or 38.7% of respondents chose this option. As a result of these findings, the overall result of existing knowledge for access to mobile phones/laptops/computers/electronics devices is excellent.

Referring to the survey, respondents have access to the Internet. Figure 3 (Part 3) shows the findings that they have the existing knowledge for access to the Internet. 37.2% of respondents chose, “Strongly Agree”. Viewing for E-portfolio information, administration contacts numbers, and so on is easy. This situation causes people to feel that every instant of their lives is essential. It further demonstrates that the respondents are continually attached to the Internet and their data subscription. Hence, the online system makes people seem connected.

The survey results indicate different perspectives on E-Portfolio in educational institutions. Figure 3 (Part 4) presents that agree that E-Portfolio is a suitable platform for the teacher training process. Students will be motivated and easily be grades and awards rather than simply learning to achieve graduation’s ultimate goal (Ashikin 2015). This mindset causes students to pursue good academic results and develop soft skills, which are very important in teaching (Chung and Elizabeth 2014). For option, which is “Neutral,” as many as 106 or 20.6% of respondents stated that the “Agree” e-portfolio platform could allow them to write reflections of teaching practice in an organized manner. In addition, choice of 137 respondents represents 26.7% of respondents “Strongly Agree” with this statement.

Based on Fig. 3 (Part 5), A total of 130 respondents, or 25.3%, chose option, “Neutral.” In addition, for options “Agree” and “Strongly Agree” 257 and 117 respectively,

50.0 and 22.8% of respondents chose this statement and e-portfolio platform allows students to make self-assessment, peer-based assessment, and self-regulation.

Figure 3(Part 6) shows that confident of using the e-portfolio platform in the teaching training process. A total of option, which is “Neutral,” as many as 155 or 30.2% of respondents stated that they “Agree” they can use the e-portfolio platform in the teaching training process. In addition, option of 108 respondents represent 21.0% of students “Strongly Agree” with this statement.

Figure 3 (Part 7) shows the findings that the e-portfolio platform allows respondents to increase motivation for continuous professional development in teaching practice. For option, “Neutral,” as many as 109 or 1.6% of respondents choose this option. In addition, 257 respondents, equivalent to 50.0% of respondents, select option, “Agree”, and 138 or 26.8% of respondents choose option, “Strongly Agree”.

Figure 3 (Part 8) shows the findings that the e-portfolio platform allows respondents to organize teaching and learning materials flexibly. For option, “Neutral,” as many as 85 or 16% of respondents choose this option. In addition, a total of 259 respondents, equivalent to 50.4% of respondents, chose option, which is “Agree,” and 163 or 31.7% of respondents chose option, which is “Strongly Agree.” As a result of these findings, the overall mean for the e-portfolio platform enables respondents to organize teaching and learning materials effectively.

A researcher (Barnes and Gillis 2015) suggested that the chosen artifacts must be examples of works that reveal the students’ potential in academic performance and their marketability in the workforce. Hence, the E-Portfolio should be valuable cover materials for student assignments and prominent involvement in extracurricular activities. Uninfluential artifacts must not be covered in the E-Portfolio because it will reduce the potential market of the students. Students must be supervised correctly by their enrolment in universities to deliver a unique and inspiring E-Portfolio system. E-Portfolios also operates as a highly effective practice that provides students and educators with an assessment tool to improve academic success (Boulton 2014). From the survey, most agree that requiring an E-Portfolio can ensure the success of the E-Portfolio system; making an E-Portfolio is one of the learning agility scenarios that inspire students to develop their skills slowly. Therefore, the analysis signifies that having their E-Portfolio can ensure the students’ learning success. The Development of an E-Portfolio must support the student’s growth and assess their learning and marketability (El-Senousy 2020). An E-Portfolio can enhance the student’s visibility, self-confidence, marketability, and competency from the paper’s analysis. Some content development of an e-Portfolio is one of the fundamental aspects that need consideration.

Based on Fig. 3 (Part 9), that using this e-portfolio platform will allow them to flexibly document teaching and learning materials. 121 respondent’s equivalent to 23.5% “Neutral” which is option. A total of 274 respondents, or 53.3%, chose “Agree” with the statement that this e-portfolio platform allows them to document teaching and learning materials flexibly. In addition, option, “Strongly Agree,” as many as 106 or 20.6% of respondents chose. The results found that the this e-portfolio platform statement will allow respondents to document teaching and learning materials flexibly is and will help all materials provided, will be easy to display online.

The respondents fully accept that E-Portfolio can improve student visibility in their learning process, whereas the majority can improve the marketability and confidence of respondents.

Therefore, E-Portfolios are a platform to prove student performances (i.e., beyond the teacher's reach) because the old assessment system provides inadequate proof (Lu 2021).

Furthermore, E-Portfolio equips students with creative alternatives to transfer their expertise to interactive and significant performance displays. Examples of performance indicate the student's soft skill level, which defines their success in job application (Pegrum and Oakley 2017). Hence, students who want to succeed need to learn to improve their soft skills.

Figure 3 (Part 10), that they are confident to read and understand the content in the e-portfolio. A total of 117 respondents, or 22.8%, chose option, "Neutral." In addition, for options namely "Agree" and "Strongly Agree" 267 and 123 respectively, 51.9% and 23.9% of respondents chose this statement.

Based on Fig. 3 (Part 11), that they need explicit instructions in the e-portfolio platform to avoid confusion. A total of 66 respondents, or 12.8%, select option, "Neutral." In addition, for option, namely "Agree" and "Strongly Agree," 170 and 273, respectively, 33.1% and 53.1% of respondents choose this statement.

Accomplishing an e-Portfolio in training has numerous advantages and disadvantages. (Özer et al. 2016) said that e-Portfolio is the most innovative technology to enhance technical skills, support prospective job hunting, and assess performance and confidence. The whole of the contents in the E-Portfolio can be evidence of proof to improve a student's proposed career development (Flores et al. 2015). Referring to Hart Research Associate (Md Azhan et al. 2014), 95% of companies prefer selecting applicants among talents that can improve the company's improvement. Accordingly, the e-Portfolio requires interactive and filled with interesting knowledge to be shared in the future (Odo 2016). Although, the challenges of designing and achieving a great e-Portfolio are several. Approachability is not limited, and therefore students must be careful in collecting material to be uploaded in their e-Portfolio. Pointless material can reduce the marketability of a student if uploaded. Therefore, students are responsible for their e-Portfolio and the information it contains (Meiers 2007).

Figure 3 (Part 12) illustrated the challenge that might happen when implementing E-portfolio. The e-portfolio platform allows them to save storage space related to teaching training. A total of 100 respondents, or 19.5%, chose option, which is "Neutral" on this statement. Finally, option "Agree," with 246 respondents or 47.9% select option. Meanwhile, 161 respondents or 31.3% "Strongly agree" that the e-portfolio platform can save storage space related to teaching training.

Figure 3 (Part 13) shows that none of the respondents or 0% of respondents chose option, "Strongly disagree," that the e-portfolio platform allows respondents to upload and download materials for teaching. While four respondents, or 0.8%, chose option, "Disagree," regarding this statement. For option, "Neutral," as many as 68 or 13.2% of respondents choose this option. In addition, 272 respondents, equivalent to 52.9% of respondents, select option, "Agree," and 170 or 33.1% of respondents chose option, "Strongly Agree." As a result of these findings, the overall for this

e-portfolio platform can allow respondents to upload and download materials for teaching is capable.

Figure 3 (**Part 14**) shows the findings that many respondents or 0.2% of respondents chose options, namely “Strongly Disagree” and “Disagree,” that the e-portfolio platform allows them to review the materials uploaded easily. While 68 respondents, or 13.2%, choose option which is “Neutral” regarding this statement. For option, which is “Agree,” a total of 246 or 47.9% of respondents chose this option. In addition, 198 people or 38.5% of respondents “Strongly Agree” with this statement.

A recorded that students favor the traditional portfolio method, including the combination of printed documents (Guerriero 2014). They do not strive to use e-Portfolio as a springboard to promote metacognitive skills and future career development. The students encountered that unreliable receptiveness to the Internet at their home executes connecting with their e-Portfolio challenging most of the time. A researcher also suggested that uploading huge files into an e-Portfolio is challenging and time-consuming (Chang et al. 2011).

Furthermore, users have to preserve their passwords for security purposes and regularly back up their files because of server problems. Their lecturer also demands students to upload all their works into an e-Portfolio. They do not know the advantages of having an e-Portfolio by themselves. Therefore, e-Portfolio is not yet a common platform in education compared with other social sites, such as Twitter, Instagram, and Facebook.

Completing E-Portfolio in the learning process has several challenges. The important and difficulties are plagiarism, storage or server problem, and students not uploading their learning material in the e-Portfolio. Common challenges come from waste activities in and waste out of learning materials uploaded in the e-Portfolio. The student just uploads the learning material by force and loading work to academic staff to appraise E-Portfolio. Additional issues, such as creating the e-Portfolio because of habit and assessment and students feel the e-Portfolio has no benefit, are deemed common challenges but lower. E-Portfolio enhances the independence of students through self-learning. Hence, students need to be mature and motivated to learn independently, and they will not leave behind in the learning process. Suggested that the e-Portfolio encourages students to be contemplative when creating their e-Portfolio (Costandi et al. 2019). Universities or institutions must give regular training to promote and drive students to use the e-Portfolio as a learning component. The respondents prioritize academic introductory course materials because accumulating core course materials indicates a student’s potential academic performance and marketability in the workforce. Hence, the most practical assignments in their academic core course should place in students’ E-Portfolio. The E-portfolio system should consider teaching experience records. It will be an added value representing the students’ competency and skills, enhancing their marketability when striving for a workplace.

5 Conclusion

The implementation of an e-Portfolio is helpful to enhance the learning system at a higher education level. E-Portfolio promotes the ideas of producing an “equitable” student”; it encourages the assessment of students holistically and encourages students to learn new skills that are unavailable in the classroom, especially about Web 2.0 tools. All of these skills are typically acquired only by their experiences (i.e., learning by doing). To create an effective e-Portfolio and obtain good grades, students must gain such competency. Therefore, implementing an e-Portfolio can produce proactive students who participate in various activities in their learning.

The Google survey results indicate that most respondents give confident feedback on the development of e-Portfolio as one of the universal methods to assess students’ knowledge and skills. Thus, the comprehensive contents of the e-Portfolio must be developed. Furthermore, a good e-Portfolio must have inclusive contents that meet selected essential criteria to measure students’ academic achievement. Therefore, integrating a suitable assessment method is equally important to determine the success of the e-Portfolio system.

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Towards Managing Covid-19 Using Artificial Intelligence and Big Data Analytics



Azwa Abdul Aziz, Elissa Nadia Madi, Nik Nurul Nadia Nik Pa, and Mokhairi Makhtar

Abstract Coronavirus Diseases (COVID-19) is an infectious disease caused by a newly discovered coronavirus that becomes world pandemic with 200 countries recorded affected, and nearly 1 million people died. Starting from Wuhan in December 2019, within three months, the spread across global with high reproduction rates (R Rates). There is evidence in one case, it spread to more than 100 people and creates his pandemic cluster. As the pandemic contributes to a large volume of data, Artificial Intelligence (AI) and Big Data Analytics (BDA) play a huge role in understanding the pan-demic to help necessary action can be deployed. Researchers and developers are increasingly using artificial intelligence, machine learning, and natural language processing to track and contain coronavirus and gain a more comprehensive understanding of the disease. So far, due to new diseases, there is a limited study to cover how AI and BDA will help in fighting COVID-19. Therefore, we provide a comprehensive analysis of the existing and potential of using AI and BDA to manage the COVID-19 outbreak based on COVID-19 Outbreak Life Cycle phases; detection, spread, management, recovery. We also presented the challenges needed to be overcome for BI in BDA in the fighting. To conclude, these findings show the necessity of AI and BDA as a critical tool to understand COVID-19 and there a lot of ongoing intensive works have been carried out to cope with COVID-19.

Keywords COVID-9 · Artificial intelligence · Big Data Analytics · Machine learning

1 Introduction

As an emerging infectious disease, COVID-19 has involved many countries and regions. With the further development of the epidemic, the proportion of clusters

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Fig. 1 Johns Hopkins University dashboard (John Hopkins Centre 2020)

has been increased. COVID-19 is an infectious disease caused by a newly discovered coronavirus. A new spreading illness caused by a coronavirus (COVID19) has affected many countries and regions. Just after five months of the outbreak, more than 3 million cases of Covid-19 (COVID-19 2020) have been recorded around the globe. Figure 1 shows cumulative cases of COVID-19 around the worlds based on Johns Hopkins University (Coronavirus Research Centre) in April 2020. In June 2021, more than 180 million were affected, which a number of deaths going to four million depicted the vaccination programs already started for most countries.

Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without special treatment. Older people and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illnesses. The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes.

COVID-19 clinical characteristics were very similar to those of viral pneumonia. However, after analysis of respiratory samples, the experts at the PRC Centers for Disease Control declared that pneumonia, later known as novel coronavirus pneumonia (NCP), was caused by a novel coronavirus (Huang et al. 2020). Like other viruses, SARS-CoV-2 has many potential natural hosts, intermediate hosts, and final hosts that lead to major challenges for preventing and treating viral infection (Wang et al. 2020b). SARS-CoV-2 has high transmissibility and infectivity and a low mortality rate than severe acute respiratory syndrome and Middle East respiratory syndrome coronaviruses (SARS-CoV and MERS-CoV, respectively). However, COVID-19 is dangerous to the person who has a low immune system, such as older adults and a person who have comorbid (blood pressure, kidney problems, etc.)

The COVID-19 global pandemic contributes a large volume of data. Artificial Intelligence (AI) and Big Data Analytics (BDA) play a huge role in understanding the pandemic to help necessary action be deployed. Researchers and developers are increasingly using artificial intelligence, machine learning, and natural language processing to track and contain coronavirus and gain a more comprehensive understanding of the disease (Kent 2020). AI and BDA have been applied intensively, including prevention, monitoring, treatment, and finding a solution (vaccine) for the pandemic. For example, companies and governments worldwide are tapping the location data of millions of Internet and mobile phone users for clues about how the virus spreads and whether social distancing measures are working (Toh 2020). These efforts involve analyzing large data sets to uncover patterns in people's movements and behavior throughout the pandemic.

AI already fascinated healthcare expertise, where the complexity and rise of data in healthcare mean that artificial intelligence (AI) is fit applied within the field. Machine Learning (ML) algorithms are already outperforming radiologists at spotting malignant tumors and guiding researchers in how to construct cohorts for costly clinical trials (Devenport 2019). A tremendous amount of data needs to be analyzed to combat COVID-19, such as monitoring people, understanding symptoms, predicting outbreaks, and clustering infection. AI can be used as a critical defensive weapon in fighting COVID-19. The 5'Vs of big data criteria (Volume, Variety, Velocity, Veracity, and Value) defining the COVID-19 dataset. Thus each of these performs unique challenges to be solved.

This paper seeks to address the following issues:

- i. An early review of using BDA and AI in fighting COVID-19
- ii. To explore the potential of using AI and Big Data Analytic managing COVID-19 pandemic
- iii. Discuss critical challenges implementing AI in COVID-19

The paper has been divided into five parts. The first part is the introduction and aims of the research. The second part begins by laying out the theoretical dimensions of the study and the definition of critical key terms. The third part describes the potential applications using AI in every phase of COVID-19 control and prevention with the suggestion algorithms as solutions of analytic problems in COVID-19. Part 4 followed by discussing the challenges of using AI and BDA against COVID-19. Finally, in part five, the conclusions and suggestions for future works.

2 Background and Motivation

COVID-19 occurred just before the Lunar New Year. Millions of Chinese were expected to travel for the holidays, including people in China, Hong Kong, Taiwan, Singapore, Malaysia, and other parts of the world where Lunar New Year is the biggest festival celebration for Chinese. Thus, it led to a major spread around the globe, although quick reaction for China government in managing the pandemic, the

first case appeared in Wuhan, China. Therefore, the Industrial Revolution (IR) 4.0 key components such as AI and BDA are essential in controlling and monitoring the pandemic. For example, Taiwan quickly mobilized and instituted specific case identification, containment, and resource allocation approaches to protect public health. Taiwan leveraged its national health insurance database and integrated it with its immigration and customs database to begin creating big data for analytics; it generated real-time alerts during a clinical visit based on travel history and clinical symptoms to aid case identification (Wang et al. 2020a). Besides, the Quick Response (QR) code technology is used for scanning and online reporting of travel history and health symptoms to classify travelers' infectious risks based on on-flight origin and travel history in the past 14 days. Therefore, a comprehensive understanding of AI and BDA will help to fight the diseases because not all algorithms can be implemented in all problems. Most importantly, we need to avoid overestimating such in the case of providing a risk assessment system for COVID-19.

2.1 Artificial Intelligence (AI)

Artificial intelligence (AI) is a wide-ranging branch of computer science concerned with building smart machines capable of performing tasks that typically require human intelligence. AI is an interdisciplinary science with multiple approaches, with the access of Internet-of-Things (IoT) of resources (big data) and advancement of algorithms (machine learning techniques such deep learning) and high-speed infrastructure (hardware) with affordable cost contribute to new industry revolution (IR

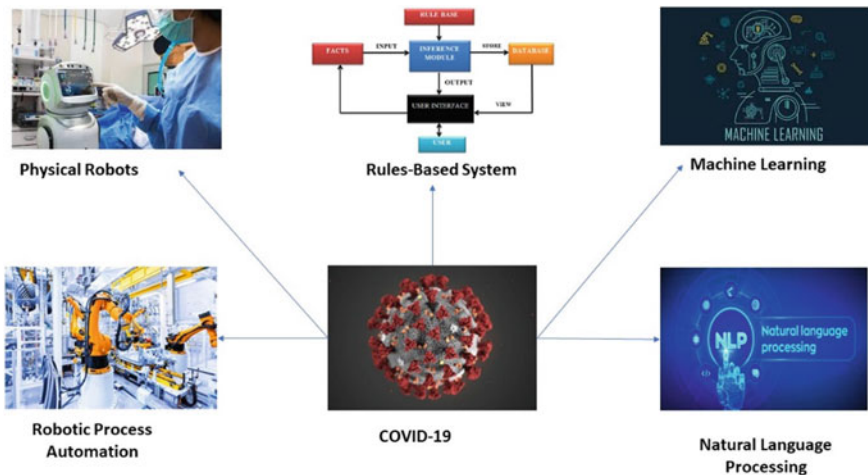


Fig. 2 AI contributes to healthcare

4.0). Davenport (Wang et al. 2020a) segment the types of AI relevant to healthcare into five approaches, as shown in Fig. 2.

i. **Machine Learning (ML)**

The first approach is Machine Learning (ML). It is algorithms that use statistics to find patterns in massive amounts of data. For example, how Google produces a searching result, recommendation systems like Netflix or Youtube that personalise user needs, or voice assistants such as Siri and Alexa. It is defined as a statistical technique for fitting models to data and ‘learn’ by training models with data divided into two main categories: supervised and unsupervised.

The supervised learning process exploits the labeled examples in the training dataset (Han et al. 2012). Supervised learning creates a function that maps the input variables (x) to an output variable (y).

$$y = f(x)$$

The goal is to approximate and generalize the mapping function so that when new input data is presented, the model can accurately predict the output variables for that data. In general, the features or attributes that are used to build the ML model are pre-defined by the user. The SML model’s success depends on the knowledge and information that exists in the training data.

SML is the type of machine learning in which machines are trained using well “labeled” training data, and on that data, machines predict the output. The labelled data means some input data is already tagged with the correct output.

Alternatively, unsupervised ML does not need any labeled data. Thus, it can be applied to any text data without manual effort (Agarwal and Mittal 2016). However, the unsupervised model requires the expert to verify the clustering result produced by this approach, as shown in Fig. 3. The goal for unsupervised learning is to cluster data based on patterns and behavior obtain from learning analysis.

The use of AI in healthcare is broad such as applied in diagnosis processes, treatment protocol development, drug development, personalized medicine, and

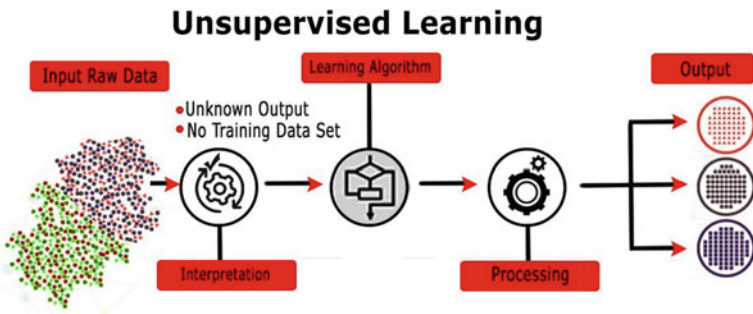


Fig. 3 Unsupervised machine learning (Mahesh 2020)

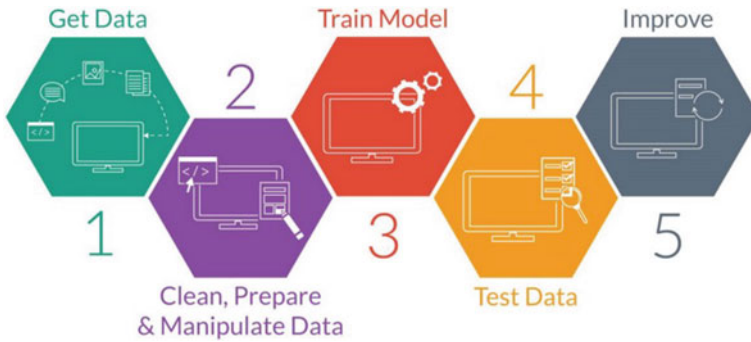


Fig. 4 The general process in ML (Maloo 2018)

patient monitoring and care. For example, Manogarana et al. (2017) proposed architecture of IoT and Big Data for secured smart healthcare monitoring and alerting system. It is due to the difficulty of analyzing and finding valuable information in Big Data. In another example, the prior clinical records from the Cleveland Heart Disease Database (CHDD) and sensor data of the patients were collected to test the Logistic regression-based MapReduce with assisted by the Apache Mahout application (Ge et al. 2018). In research by Sharma et al. (2018), they proposed disease monitoring testing. It can analyze the data and analytic requirements for the involved parties, such as the healthcare system provider that is the service provider (SP). These patients are the distributed data contributors or users, and medical providers called doctors, hospital staff, and nurses.

The general process in ML involved data preparation (etc.: cleaning, transformation, remove noises), train the model (using an algorithm), result evaluation and interpretation, and model improvement. Kook (2018) divide the ML process into 5 phases, as shown in Fig. 4.

The first phase process is obtaining data, followed by the cleaning process. The subsequent phases involved a train and test model where choosing the suitable model is the most critical job in ML. The final process is calibrating and improvement of the result.

ii. **Natural Language Processing (NLP)**

Natural Language Processing or NLP is a field of Artificial Intelligence that gives machines the ability to read, understand and derive meaning from human languages (Yse 2019a). In healthcare, the dominant applications of NLP involve the creation, understanding and classification of clinical documentation and published research. NLP systems can analyze unstructured clinical notes on patients, prepare reports (e.g., radiology examinations), transcribe patient interactions, and conduct conversational AI (Wang et al. 2020a).

iii. **Rules-Based Experts System**

Expert systems based on collections of ‘if-then’ rules were the dominant technology for AI in the 1980s and were widely used commercially in that and

later periods. In healthcare, they were widely employed for ‘Clinical Decision Support’ purposes over the last couple of decades and are still widely used today (Wang et al. 2020a). However, these approaches suffer complex decisions that lead to performance problems, whereby more suitable learning algorithms can replace Rules-Based such as Decision Tree or Random Forest Classifier (RFC) when dealing with high sparsity of dataset.

iv. **Physical Robots**

Robots in many domains, including healthcare, help do critical jobs as accuracy and consistency play a considerable role. They perform pre-defined tasks like lifting, repositioning, welding, or assembling objects in places like factories and warehouses and delivering hospital supplies. Surgical robots initially approved in the USA in 2000, provide ‘superpowers’ to surgeons, improving their ability to see, create precise and minimally invasive incisions, stitch wounds, and so forth (Wang et al. 2020a). Robots have reduced human interaction by disinfecting hospital rooms, moving food and supplies, and delivering telehealth consultations. AI is being used to track and map the spread of infection in real-time, diagnose infections, predict mortality risk and more (Mahendra 2020).

v. **Robotic Process Automation**

The process of robotic automation is considered as not involving physical robots. Instead, it relies on a combination of workflow, business rules, and ‘presentation layer’ integration with information systems to act like a semi-intelligent user of the methods (Wang et al. 2020a). The use of technologies such as image recognition, gene sequence, and repetitive system tasks is an example of applying robotic process automation.

2.2 *Big Data Analytics*

The mass of data creates by IoT devices leads to the essential BDA. In cases of Covid-19, data produced from social media regarding the pandemic, fake news, patient movement from one area to another that can retrieve from mobile are necessary to do the analytic process. By combining with AI analytics, big data helps us understand the COVID-19 in outbreak tracking, virus structure, disease treatment, and vaccine manufacturing. The definition of big data relates to early 5Vs criteria. The early 5Vs of Big Data definition based on these criteria and shown in Fig. 5.

i. **Volume**

For example, volume refers to the amount of data generated through websites, portals, and online applications within the Social Media space. The size of the data fixes the value and potential insight. Besides, the volume of big data structures grows at an unbelievable rate such that it can only be effectively managed using clusters. The massive volume of data on big data is increasing as Internet technology evolves. Millions of people produce video

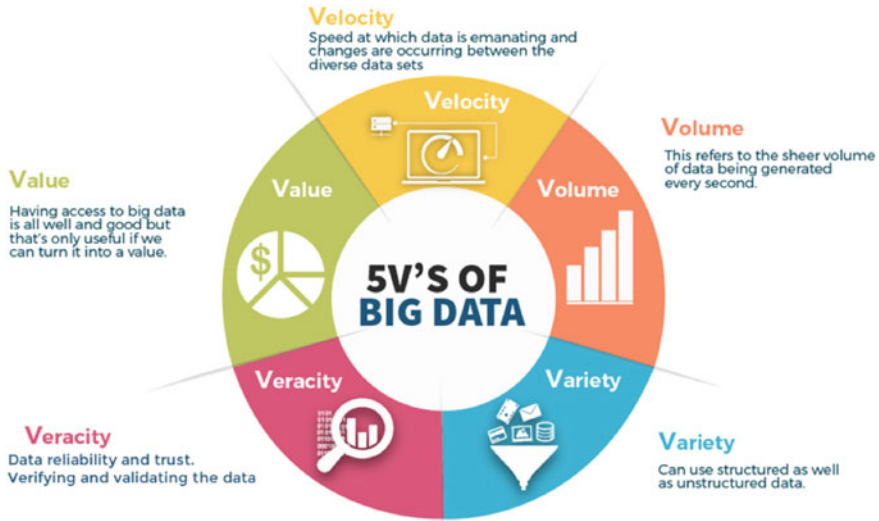


Fig. 5 5Vs big data criteria (Marr 2015)

data on YouTube, status on Facebook, photos on Instagram and more. The amount of data produced has resulted in vast volumes of data stored digitally on the internet.

- ii. **Velocity**
Velocity refers to the tremendous speed or velocity within which the data moves in a big data system, and data stream must be generated and dealt with promptly. Big data involves the massive movement of data from various sources to process the same data in real-time and in batch processes. The data are generated and processed to meet the demands that can be highly variable.
- iii. **Variety**
The data come in a large variety of formats and is often sourced from different platforms. It is including structured, numeric data in the traditional database and unstructured data such as text documents, video, and audio. Data are generated from multiple sources, making it hard to transform and integrate data across systems. The data is stored using various formats such as doc, jpeg, png, pdf, and more.
- iv. **Veracity**
The data veracity mentions the degree of certainty in data sets. It is the inherent unpredictability of some data that requires analysis of big data to gain reliable predictions.
- v. **Value**
The extent to which big data generate economically worthy insights and or benefits through extraction and transformation. Big data is also characterised by large datasets containing data with varying quality and sentimental value.

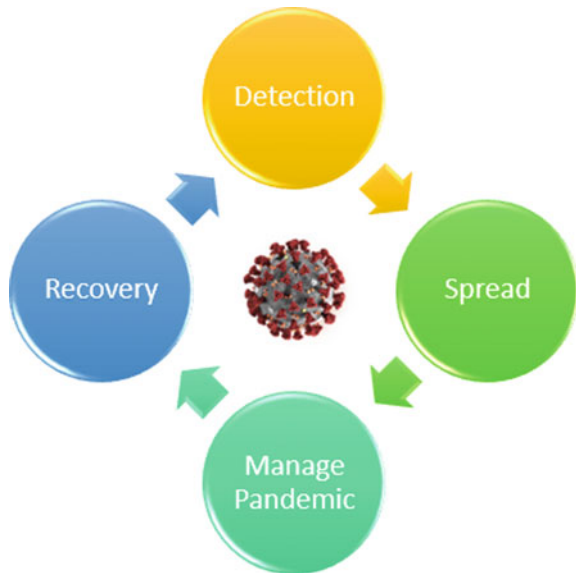
3 Fighting COVID-19 with AI and BDA

Naude (Yse 2019b) emphasises six areas where AI can contribute to the fight against COVID-19; early warnings and alerts, tracking and prediction, data dashboards, diagnosis and prognosis, treatments, cures, and social control. For early warnings and alerts, he used the Canadian-based AI model, BlueDot, which predicted the infection outbreak at the end of 2019, issuing a warning to its clients on 31 December 2019, before the World Health Organization did on 9 January 2020. Tracking helps predict how the COVID-19 disease will spread over time and space, such as the 2015 Zika-virus, a dynamic neural network was developed to predict its spread. The tracking and forecasting of COVID-19 have caused the emergence of an industry of data dashboards that visualises the pandemic (ex: John’s Hopkins’ JHU CSSE, Corona-virus world meters). On the other hand, a fast and accurate diagnosis of COVID-19 is a critical process to save human lives. Therefore, AI models such as Deep Learning are essential algorithms for analysing tasks that may provide helpful input for medical diagnosis. AI is considered necessary in treatments and cures. The use of AI in healthcare for treatment had intensively used past ten years, such as gene sequence or developing vaccination. Finally, AI can be implemented in social control by integrating IoT devices such as mobile to track crowded for a specific area.

In this paper, we used the outbreak life cycle proposed by Biaggi (Huang et al. 2020), divided the outbreak into four phases, as shown in Fig. 6.

- i. Detection

Fig. 6 COVID-19 outbreak life cycle



Detection is the process to detect an early outbreak for authorities to take necessary action before it becomes a global pandemic. For example, in late December 2019, Toronto start-up BlueDot spotted an unusual cluster of pneumonia cases around a market in Wuhan, China, which a week before CDS in the US and WHO issued statements warning of an outbreak of a new influenza-like illness at the exact location (Yse 2019b; Huang et al. 2020). BlueDot, specialising in infectious disease surveillance, uses an AI algorithm to analyse big data from hundreds of thousands of sources. Including news reports, airline ticketing data, government notices, health data and disease networks to detect the emergence of new infectious illnesses.

Another area that can utilise AI analysis is providing a risk assessment model to identify user potential to get COVID-19. This identification can be achieved by analysing existing patient data with expert (doctors, epidemiologists, etc.) verification and consultation, and a predictive model can be generated to mimic actual results. In Malaysia, Universiti Sultan Zainal Abidin (UniSZA) proposed an application known as COVID-19 Health Assessment and Evaluation System (CHaSe) to help an organisation detect an early possible staff/student which a high risk for COVID-19 (Cook 2018). This system combines medical, epidemiology, statistician, and data analysis experts to produce a comprehensive application of COVID-19 risk assessment.

Turning to ML algorithms, classification algorithms such as Random Forest Classifier (RFC), Multinomial Naive Bayes (MNB) and Support Vector Machine (SVM) can be used to produce prediction models by feed a fit training data to do model. It will operate in many COVID-19 detection applications to predict the next impact area based on existing travel patient data.

ii. Spread

Controlling spread is a vital task to gain advantages in fighting COVID-19. Mobile phones play a crucial role in tracking the movement of people to help identify where the disease is likely to spread. For example, an early alert can be sent to users if they entered high-risk areas, where people diagnosed having COVID-19 is high. Another aspect, COVID-19 can be traced to taking further action to the place or people interacting with them.

The process of understanding clusters or new clusters that appeared is vital for the government to take early action to prevent the spread in communities. Specific AI algorithms that are used to other problems before may suit the challenges given by COVID-19—for example, using Social Network Analysis to investigate the link between patients in its cluster. SNA is the process of investigating social structures through the use of networks and graph theory. It characterizes networked structures in terms of *nodes* (individual actors, people, or things within the network) and the *ties, edges, or links* (relationships or interactions) that connect them. However, it is crucial to identify how many people were infected by the patient during the outbreak. Figure 7 shows how the result may produce if identifying clusters using SNA.

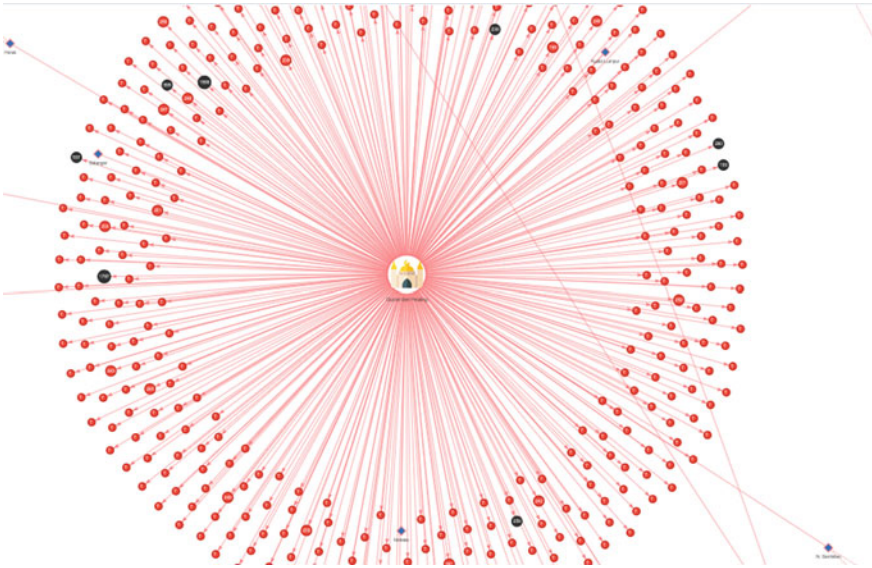


Fig. 7 Network cases graph (Malaysia COVID-19 2020)

Understanding spread data and the relation between action taken to the patient also infected essential studies. Descriptive analysis is the process of using ML algorithms to analyst datasets. For example, Mathematical modellers at Imperial College London are attempting to track how the reproduction (R) number has changed as isolation, social distancing, and the total lockdown were introduced, as shown in Fig. 8 (Manogaran et al. 2017). Reproduction is measuring rating a disease's ability to spread.

Figure 8 shows the R number decreased when UK governments have taken several actions to control the spread. It helps to gain insight analysis (descriptive) of the preventive result to slow down infection rates.

Geo-location analysis is also an essential feature in understanding the spread velocity, time, and impact. For example, how fast the spread movement between locations to a nearby location can be estimated using a statistical predictive model or Association Rules by looking at pattern frequency of previous cased. Studying important factors lead the affected such as numbers of travellers' movement whether correlating with areas affected. Figure 9 shows an example taken from the outbreak. The website uses data analytics to monitor COVID-19 spread in Malaysia using Geo-location analysis.

iii. Managing Pandemic

Controlling spread also mean to ensure social distancing mechanism obligates by the citizen. Two tech giant companies, Apple and Google, began a project to create the groundwork for Bluetooth-based contact-tracing apps that can work across iOS and Android phones without compromising location

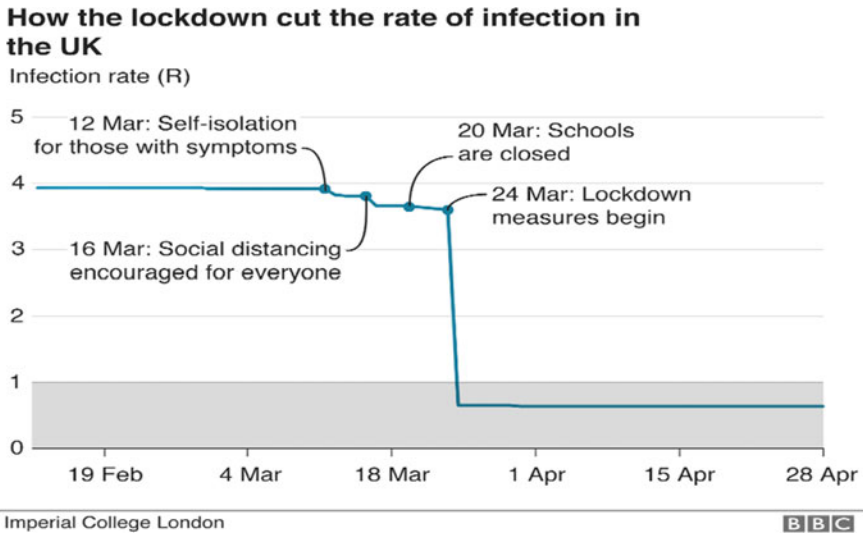


Fig. 8 R number decreased in UK

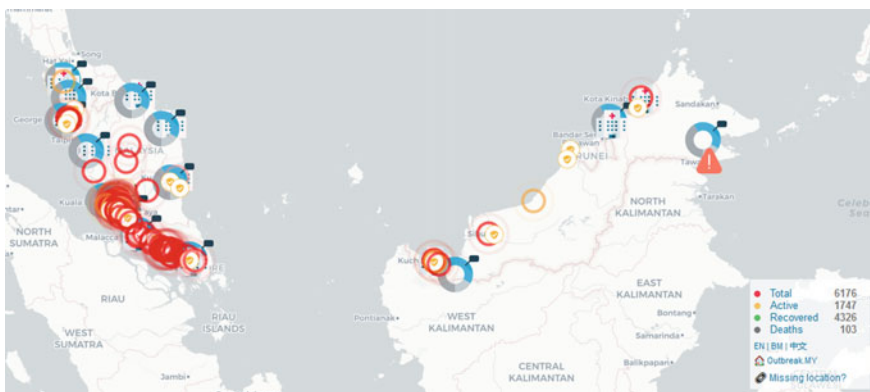


Fig. 9 Geo-location analysis (COVID-19 2020)

privacy (Greenberg 2020). The main idea is to keep track of whether a smart-phone’s owner has come into contact with someone who later turns out to have been infected with Covid-19. Once alerted the system tracking the person who communicates with the owner. All of them will receive alert messages.

Managing pandemic also involves developing a vaccine for COVID-19. ML is already used to identify illnesses, from cancer to eye diseases, widely used in health-care. In January, Google DeepMind introduced AlphaFold, a cutting-edge system that predicts the 3D structure protein based on its genetic sequence (Etzioni 2020). DeepMind released protein structure predictions of several under-studied proteins

Fig. 10 3D atomic-scale map (Mahendra 2020)



associated with SARS-CoV-2, the virus that causes COVID-19, to help the research community better understand the virus. The University of Texas at Austin and the National Institutes of Health used a popular biology technique to create the first 3D atom-ic-scale map of the part of the COVID-19 virus that attaches to and infects human cells—the spike protein (Mahendra 2020), as shown in Fig. 10.

Data science can play a central role in analysing the large-scale testing of people by linking these results with anonymised health characteristics of hospitalised patients. It allows understanding the critical risk factors to help peoples that have the most significant risk. The analyst is more accurate than previously been done if more data is available.

iv. Recovery

Recovery is the process once the outbreak has been contained. AI can be used to understanding data that is collected from this pandemic to deal with future episodes. Historical data plays a significant role in performing data analyst tasks. It will allow authorities to test different scenarios and outcomes to make data-driven decisions on the best actions to take in the future.

Recovery also involved the process of boosting the local economy after it is affected by COVID-19. The method of recovery involving managing spread and ensure the risk of new outbreaks is as low as it can. ML can be used here too by simulating different outcomes to test and validate policies, public health initiatives and response plans (Bennett 2020). Therefore, the data-driven decision process can be generated from ML results lead to an increased likelihood of being effective.

4 Challenges of Implementation AI in COVID-19

This section discusses the challenges that occur to implement AI and BDA in COVID-19. Some of the significant obstacles to implementing AI in COVID-19 are:

i Data Availability

The accuracy of ML depends on the availability and fitness of data, especially for supervised ML approaches. However, as COVID-19 is a new disease and still in the development process, the lack of central databases to analyst COVID-19 has become the most significant challenge to understand the pandemic. The knowledge is also scattered across countries where knowledge sharing between governments are complicated due to specific issues such as data sensitivities and veracity. Didier Gaultier, Data Science & AI Director at Business & Decision, Orange Group, currently miss the large-scale data on COVID-19 required for data science and AI to give accurate results (Etzioni 2020). For example, researchers suspect that blood type plays a role in the risk factors for developing severe forms of COVID-19, but studies and data are still missing, and this is probably not the only factor involved. In other cases, such as in GIS data acquisition, the struggle against the widespread pandemic, the main challenge is finding strategies to adjust traditional technical methods and improve the speed and accuracy of information provided for social management. At the data level, data no longer come mainly from the government in the era of big data but are gathered from more diverse enterprises.

Proving a universal data lake is the ideal solution to ensure data availability. A *Data Lake* is a storage repository that can store many structured, semi-structured, and unstructured data (Guru99 2020). Data Lake offers high data quantity to increase analytical performance and native integration. Key Data Lake concepts are illustrated in Fig. 11.

Amazon provides a universal COVID-19 Data Lake, a centralized repository of up-to-date and curated datasets on or related to the spread and characteristics of the novel coronavirus (SARS-CoV-2) and its associated illness COVID-19 (AWS Data Lake Team 2020). The current exiting data including John Hopkins and The New York Times COVID-19 case tracking hospital bed availability from Definitive Healthcare, and over 45,000 research articles about COVID-19 and related coronaviruses from the Allen Institute for AI.

It is not only a lack of data that constrains AI applications. In contrast, too much data also become a burden to algorithms. The pandemic progresses, and the issue dominate the news and social media, creating big data noise and outlier, resulting in overwhelmed algorithms—this was the lesson from the *Google Flu Trends*' failed initiative (Yse 2019b). The process of selecting the correct information and algorithms is vital to produce good AI results.

ii The Trustworthiness of Data (Veracity)

One of the critical issues in data is to understand the reliability of data. As the amount of data increase tremendously, choosing reliable and suitable data is a vital task. The main challenges are how to extract useful features from



Fig. 11 Data lake concept (Guru99 2020)

the massive amount of heterogeneous COVID-19 and ensure data is reliable. Wrong decisions made from unreliable data may lead to specific problems such as incorrect decisions for COVID-10 patients. Therefore, a proper data cleaning process is a necessity before the data analytics process. In Information Quality, some major tasks for data cleaning include solving inconsistent issues, avoiding missing value, and determining data sources.

iii Misinterpretation of Data

Misinterpretation of data can increase the number of cases multiple times. For example, prediction of COVID-19 risk based on medical criteria such as comorbid data, symptoms, and patient exposure to COVID-19 is a good early prevention measure. However, this system will risk COVID-19 patients who were not showing any symptoms (asymptomatic cases). Asymptomatic cases also are known as silent spreaders because they can go under the radar undetected.

Therefore, a preventive step cannot solely depend on AI, but it is essential to have further actions to control the disease. In this case, 14 days quarantine period is an important measure to be taken once the person is exposed to the contact. Thus, in every analytic process, a comprehensive evaluation of results is vital before making decision.

5 Conclusion

This paper described the importance of AI and BDA to be implemented in the process of fighting. With the success story of AI in many areas, especially in healthcare, AI can fit in every phase of the COVID-19 outbreak life cycle. Firstly, we introduced the COVID-19 virus, followed by the definition of AI and BDA. As the number of cases is more than 180 million and total deaths going up to 4 million (2.2% from total infected), AI as a tool for the mitigation process is crucial. Then, we have reviewed the application of AI and BDA in COVID-19 with suggestions and algorithms that can be suited in a specific area to managing the pandemic. Both technologies can be applied into four COVID-19 outbreak life cycles; Detection, Spread, Manage Pandemic, and Recovery. Also, we presented the challenges that needed to be solved for the success of BI in fighting COVID-19. One of the critical challenges discusses in the study is the process of obtaining data and, at the same time deal with the issues of data privacy and trustworthiness. In conclusion, these findings show the essence of AI and BDA as a vital tool for understanding COVID-19 and proposed solutions to solve the pandemic. Further literature and systematic review need to be done once more research and clinical result are available to study. In future, the integration of various theories especially in managing the pandemic situation such as a dynamical operational agility (Elali 2021) and entrepreneurship (Gholami and Al Tahoo 2021) should be considered in any management model which based on AI and BDA. Additionally, the AI based model will produce a good accuracy results as reported in Alareeni (2019).

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The Influence Model of Business Data Analytics on Decision Making in the Telecommunication Industry: “A Quantitative Study Using PLS-SEM”



Dalia Al-Eisawi 

Abstract This paper depicts the field of Business Analytics (BA) from a decision-making prescriptive, that is the science of using statistical techniques and technologies to scrutinize past data for obtaining new insight about businesses and perform better decisions in all levels. BA was recently highlighted in most novel research studies. Business analytics is a comprehensive and broad technology that has gotten a lot of interest from academics and practitioners recently (Yadav et al. 2016). The fields of business analytics are changing the world significantly, as a data science field, business analytics is leading significant/organizational managerial insight and awareness in terms of affecting both knowledge and management efforts.

This paper focuses on exploring the rigorous managerial effects of business analytics, its influence and insightful adoption, and innovative applications in the telecom industry. However, the impact of business analytics on decision making in vibrant sectors is not examined and yet not apparent. To close this disparity, the author proposed a framework based on reflecting the importance of business analytics on decision making. The study formulated a number of hypotheses and used a quantitative technique that includes the collection of survey data from managers working in telecom companies. Data were analyzed using partial least squares structural equation modelling (PLS-SEM). The sample consisted of (200) senior managers from two different telecommunication companies. The findings suggest an apparent influence of business descriptive and predictive, and prescriptive analytics on the performance management in the telecom industry and the decision-making process, leading to improved insightful decisions. The study proposes a comprehensive model that can add managerial influence for decision makers in vibrant industries urging to adopt analytical data systems and identifying their value. The use of business analytics in the telecommunications industry can be viewed as an input to assist in various aspects of their industry.

Keywords Business analytics · Decision making · Quantitative research · PLS-SEM · Analytics

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1 Introduction

Business analytics is comparatively a recent discipline reflecting the growing importance of data in volume, variety, and velocity, particularly with industries dealing with massive amounts of data daily (Waller and Fawcett 2013). There is a lot of demand around analytics and data science as businesses try to figure out how to use their massive amounts of data to generate value in their companies (Raghupathi and Raghupathi 2021). Correspondingly, governments and industries try to find ways to create value in a larger sense by exploiting their data resources (Al-Eisawi and Serrano 2019). Analytical methods are being used in varied forms, such as forecasting clients and consumers choices, predicting the likelihood of a medical condition, analysing social networks and social media, and better managing traffic networks. Several researchers have argued the growing attention and prominence of analytics presents a significant challenge and opportunity in many aspects as organizations have started to recognise this growth and sought after aligning themselves with analytics (Raghupathi and Raghupathi 2021).

2 Background Review

2.1 *The Nature of Business Analytics*

The general outlook of Analytics can be captured in a model proposed by Davenport and Harris (2007), and as shown in Fig. 1. They suggested a comprehensive definition of analytics as to the below,

By analytics, we mean the extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and actions. Davenport and Harris (2007).

The essential facet of the definition mentioned above is that it presents analytics as an insight that can be ultimately activated, not only as descriptive insight for knowing what occurred historically in terms of data but also including a significant concern related to business analytics that is the transformation within organisations to be an indication- based and data-driven. Business Analytics can be seen mainly as the intersection amongst of different facets (Harris and Davenport 2017), which are operational research, information systems, machine learning, as in Fig. 1. Thus, as a process, it can be described as descriptive, predictive, prescriptive processing and modelling heterogeneous data. The framework or model facilitates organisations to achieve an improved strategy in terms of decisions, as these decisions can be characterized as being more intelligent, less time-consuming, and efficient in managing and performance. Potentially, business analytics can also be viewed as the perspective in which data science and operational research are both employed. Likewise,

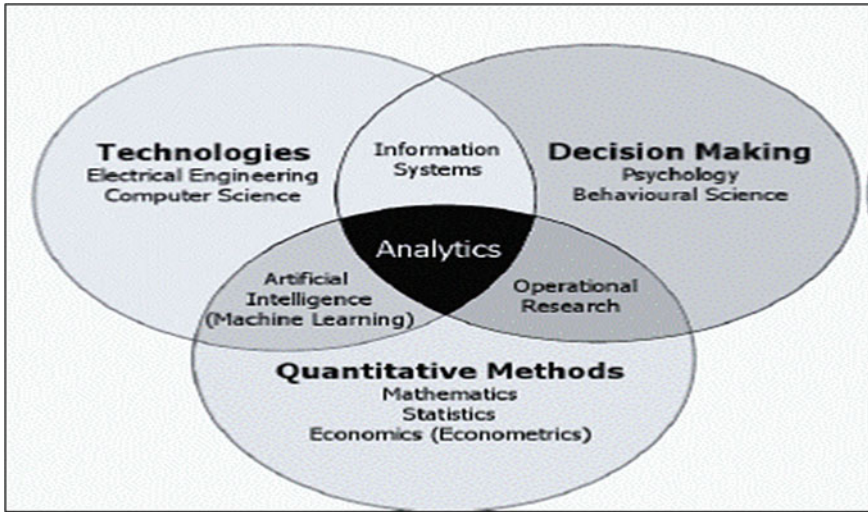


Fig. 1 Encapsulated general outlook of analytics model proposed by Harris and Davenport (2017)

enabling the concept of survival with the competitive data world that is increasing in all business environments tremendously (Raghupathi and Raghupathi 2021).

2.2 Demand for Analytics in the Telecommunication Industry

Telecommunication companies regularly produce and store enormous amounts of high-quality data and have a vast customer base. Moreover, they operate in a quickly varying and highly competitive environment; that’s why the telecommunications industry was considered as a targeted sample in this study. Telecommunication companies develop data analytics to advance their marketing efforts and to handle their telecommunication networks. However, these companies also face several data and decision management challenges due to the enormous size (Xiao and Dong 2015), the chronological and sequential aspects of their data (Taylor et al. 2013), and the demand to predict sporadic actions, such as customer fraud and network breakdown in real-time (Al-Eisawi et al. 2020). The use of business analytics in the telecommunications industry can be viewed as an input to assist in different aspects of their business, starting with large amount of data management (Liberatore and Luo 2010), the need for a better decision-making process, and ending with affecting the company’s overall performance (Zhao et al. 2014). Business Analytics is developed to address the complexity associated with the problem faced by these companies. Analytical systems can significantly help in almost all aspects of the business value chain. Below is an illustration functional area in the telecom industries where data is generated immensely (Fig. 2).



Fig. 2 The telecom industry value chain (Al-Eisawi 2019; Lapierre, Tran-Khanh and Skelling 2008)

3 Proposed Influence Model of Business Analytics on Decision Making in Telecom

Building on the reviewed background, the current study aims to detect the fine-grained influence of Business Analytics specifically; descriptive, predictive, and descriptive elements of Business Analytics on improving decision making within the telecom industry. In specific, the following “3” hypotheses are enclosed: Hypothesis 1 (H1): there is a positive relationship between ‘Descriptive analytics’ on more efficient decision making. Hypothesis 2 (H2): There is a positive relationship between ‘Predictive Analytics on more efficient Decision making. Hypothesis 3 (H3): There is a positive relationship from Prescriptive Business analytics on decision making. Hypothesis are explored in points as below,

1. Hypothesis 1 (H1): There is a positive relationship between ‘Descriptive analytics’ on more efficient decision making.
2. Hypothesis 2 (H2): There is a positive relationship between ‘Predictive Analytics on more efficient Decision making.
3. Hypothesis 3 (H3): There is a positive relationship from Prescriptive Business analytics on decision making. Hypothesis are explored in points as below,

The set of hypotheses are moreover illustrated in the model in Fig. 3.

4 Research Methods

This study followed a quantitative based methodology. Data was collected using online surveys sent to senior managers and executives in the telecom industry working in different functional departments (i.e., marketing, finance, sales, and human resource management), all the respondents require essential analytical data to

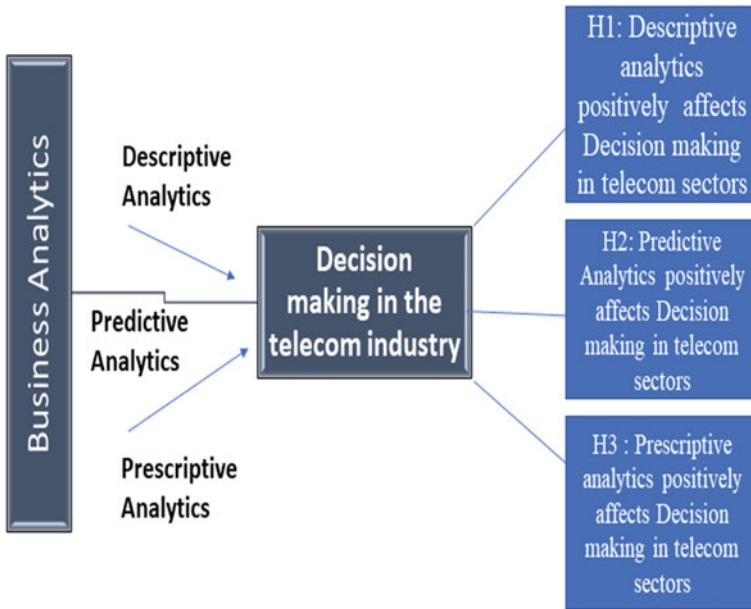


Fig. 3 Proposed influence model of business analytics on decision making in telecom

support their tactical and strategic roles. The survey questions included Likert-Scale questions with a total of “200” respondent. Later, the data was analysed using Partial Least Squares – Structural Equation Modelling (PLS-SEM).

The results of the PLS-SEM analysis were used to examine a total of the “3” hypothesis. Thus, to examine the hypothesis, proper items were extracted for measuring the independent and dependent variables. The measures used were influenced from conducting the background review of the current study. These measurement items are discussed in the following sections.

5 Data Collection Sample

A total of (200) responses were received using online surveys. It’s imperative to mention here that the quantitative data was analyzed to determine a non-bias response by assessing primary responses with subsequent responses. The result for non-bias found no significant bias with the analyzed data sample. Next, data were analysed using PLS-SEM to determine the validity of the measures and constructs and to test the research hypotheses.

6 Data Analysis with Partial Least Squares (PLS-SEM)

SPSS statistical tool was used for the primary data entry of the collected data. Later, data was transferred to SmartPLS software to be analysed using PLS-SEM for conducting factor analysis including the reliability and validity tests for the indicators and constructs. Also, path analysis was conducted for testing hypothesis and relationships between the main construct descriptive, predictive, and prescriptive analytics and their effects on decision making (Hair et al. 2012). When using the quantitative analysis tool PLS-SEM the measurement items are called indicators, as for the constructs they are named PLS-SEM as latent variable (Hair et al. 2013). It is imperative at this point that in PLS, a measurement item is referred to as an indicator, and the constructs are called latent variables (Hair et al. 2011). All indicators in the current study are required to be reflective measures; The measurement model of this study is schematically shown in Fig. 4.

As explored in the figure above that there is a total of “4” constructs, which are descriptive, predictive, and descriptive analytics. The fourth constructs are decision making. Also, the measurement model consists of a total of “20” indicators which are referred to the indicators used in the surveys.



Fig. 4 Proposed measurement model using smart PLS-SEM software

7 Results

7.1 Reliability and Validity of Measurement Model

The Validity and reliability tests for each of the “4” constructs and their “5” indicators items were executed. Individual item reliability is indicated by the outer loadings of items on their assigned construct. Correlations was calculated using outer loadings, explaining the amount an item loads onto a construct. It is recommended by Hulland (1999) to achieve a bare minimum loading of 0.4. In this research study for this study, the whole indicators scored above this threshold and were proven to be reliable for the measurement of the construct assigned to them Additionally, average variance was used to indicate construct validity (also see next section on discriminant validity). The whole “4” constructs recorded a value larger than the threshold of 0.5. Later, composite reliability (CR) values were computed for each construct, which varied from 0.70 to 1.000 for all constructs, indicating high-level of reliability (Gefen et al. 2011).

8 Discussion

This study primary aim was to employ the use of PLS-SEM in order to examine the connection between the three major aspects of business analytics (descriptive, predictive, and prescriptive) and their influence on the decision-making process in different functional areas within the telecom industry (Hair et al. 2017). Contemporary studies have come out of this approach to investigate related research questions, such as Rehman et al. (2020). All tested hypotheses proven a positive relation between the constructs descriptive, predictive, and prescriptive on decision making in different functional department. Business analytics can be seen as a strong organizational competency has a constructive role in strengthening the value attained from the implemented analytical applications (Al-Eisawi and Lycett 2012).

- **Descriptive analytics influence on Decision Making**

The results of this study delivered further support to the hypothesis that proposed that descriptive analytics can influence positively the decision-making efforts in vibrant industries such as the telecom. Descriptive analytics can be elaborated as using the data to understand the past and current business (Raghupathi and Raghupathi 2021), which in the content of this research proven to influence the decision-making process and aid in creation of fact-based outcomes and decisions. As extracted from the indicators that were tested within the descriptive analytics construct, it showed that descriptive analytics in the telecom departments such as marketing and sales may lead to efficient way of categorizing data, aggregation of data, and finally classifying the data needed for the final useful information used in business decisions. Moreover, the visualization aspect of descriptive analytics can

contribute massively to obtaining the reports needed to be delivered to decision makers that are working in product segmentation within the marketing department in telecom and identifying highest cost–profit margin ratio in the finance functional department.

- **Predictive analytics influence on decision Making**

The results of this study delivered further support to the hypothesis that proposed that predictive analytics can influence positively the decision-making efforts in vibrant businesses such as the telecom. Predictive analytics refers to the insight that is provided to the telcos about the future based on past and current data (Yadav et al. 2016). The tested items revealed that telco companies can be utilizing business analytics technologies that can support the predictive insight such as machine learning, and data mining techniques. These techniques can positively influence performance in terms of executing more accurate analysis of the descriptive data. The potential facet that can be positively influenced with the telecom by using predictive analytics are aspects such as the propensity to churn based on customer behavior, or propensity to buy by predicating for future subscribers (Mortenson et al. 2015). Also in terms of Prescriptive Analytics effect on decision making, the results of this study delivered further support to the hypothesis that proposed that prescriptive analytics can influence positively the decision making efforts in vibrant industries such as the telecom. That was clearly evident when testing indicators relating to creating strategic plans and new courses of action based in the descriptive and predictive data.

9 Suggestion for Future Research and the Study Limitations

In spite of the significant importance of BA and data-driven decision-making, slight academic research has been undertaken to understand BA as a developing field of study (Cao et al. 2015). Subsequently, the future work will still be concentrating and putting more efforts on highlighting business aspect of BA. Also, little research are dedicated on understanding about the mechanisms through which BA enhances decision-making in all managerial levels mentioning operational and tactical. As many companies are still struggling to figure out how to use analytics to understand their departmental limits and the ability of businesses to successfully leverage their processes. This study was in some way limited with covering more strategic roles while analysing and collecting the study sample and how they can exploit the BA in their strategic departmental decision making process only, however managerial roles in this paper covered a span of different department (i.e. Marketing, Sales, Human Resources and logistics) (Al-Eisawi 2020).

10 Conclusion

In this paper, the author focuses on exploring the rigorous managerial effects of business analytics in terms of its influence and insightful adoption and innovative applications in the telecom industry. The impact of business analytics on decision making in vibrant sectors is not evidently examined and yet not apparent. To close this disparity, the author proposed a framework based on reflecting the importance of business analytics on decision making. The study formulated a number of hypotheses and used a quantitative technique that includes the collection of survey data from managers working in telecom companies. This study followed a quantitative based methodology. Data was collected using online surveys sent to senior managers and executives in the telecom industry working in different functional departments (i.e., marketing, finance, sales, and human resource management), all the respondents require essential analytical data to support their tactical and strategic roles. Data was transferred to SmartPLS software to be analysed using PLS-SEM for conducting factor analysis including the reliability and validity tests for the indicators and constructs. All tested hypotheses proven a positive relation between the constructs descriptive, predictive, and prescriptive on decision making in different functional department. Business analytics can be seen as a very strong organizational competency having a constructive role in strengthening the value attained from analytical application systems (Al-Eisawi et al. 2020).

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An Early Drowning Detection System Capable of Locating Swimmers in Real Time



Luong Vinh Quoc Danh , Tran Nhut Khai Hoan, Huynh Van Pha, and Nguyen Thi Tram

Abstract Drowning is the second leading cause of unintentional injury death for children aged 1–14 years. This paper presents the development of an early drowning detection system based on the Bluetooth Low Energy technology and the received signal strength-based localization method that allows lifeguards to monitor the position of swimmers in real time. Swimmers wearing Bluetooth tags are monitored by four Bluetooth beacon scanners installed in the swimming area. The wearable Bluetooth tags periodically send beacon signals to the Bluetooth beacon scanners. Locations of swimmers are estimated using an improved RSSI-based algorithm. The radio links between Bluetooth tag and beacon scanners will be interrupted when the victim is submerged under water for certain duration. Sirens placed in the monitored area are then triggered to alert lifeguards about drowning accident. The proposed system helps to narrow down the search area and reduce the rescue time when drowning occurs.

Keywords Beacon · Bluetooth · Drowning detection · Localization · RSSI

1 Introduction

According to statistics of the World Health Organization, an estimated 236,000 people die from drowning each year (<https://www.who.int/vietnam/news/detail/>)

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[23-07-2021-viet-nam-marks-first-world-drowning-prevention-day-anyone-can-drown-no-one-should](#)). Drowning is the second leading cause of unintentional injury death for children aged 1–14 years (<http://www.cdc.gov/injury/wisqars>). In Vietnam, it is estimated that about 2,000 children aged under 16 years have died from drowning each year (<https://www.who.int/vietnam/news/detail/23-07-2021-viet-nam-marks-first-world-drowning-prevention-day-anyone-can-drown-no-one-should>). To overcome the problem, various drowning prevention techniques like teaching school-age children safe swimming skills and installing barriers across the lakes and beaches have been recommended. However, children are still likely to drown when swimming in lifeguarded areas due to the absence of effective supervision. The wide area of the beach and the large crowd of swimmers at the swimming pool may create many blind spots to lifeguards. Hence, having an automated drowning detection system in conjunction with lifeguards would help improve safety for children when swimming in pools and beach areas.

The current drowning detection technologies can be generally classified into two categories: camera-based systems (Zhang et al. 2015; Prakash 2018; Shiuee and Rezaei 2019; Alotaibi 2020), and wearable sensor-based systems (Kulkarni et al. 2016; Muhammad Ramdhan et al. 2018; Ndueso et al. 2019; Roy and Srinivasan 2018; Dehbashi et al. 2019; Zhang et al. 2015). The camera-based systems use image processing techniques to detect drowning. The video-based surveillance method possesses some limitations such as high investment costs, unable to work in complex lighting conditions, and need of powerful computing devices. Besides, the wearable sensor-based methods are low cost and detect drowning based on sensing physiological parameters (e.g., heartbeat and breathing rate) (Kulkarni et al. 2016; Muhammad Ramdhan et al. 2018; Ndueso et al. 2019) or monitoring physical activities of swimmers (i.e. submersion duration of swimmers under water) (Roy and Srinivasan 2018; Dehbashi et al. 2019; <https://beaqua.com.sg/seal-swimsafe/>). For rescue work in swimming areas, it is crucial to determine the exact location of drowning, especially for large areas like beaches. This will help the rescue operation to be performed as quickly as possible. However, most published works have a shortcoming that the drowning detection systems are not capable of locating the position of the victim.

This paper presents the development of an early drowning detection system based on the Bluetooth Low Energy technology and the received signal strength-based localization method that allows lifeguards to monitor the position of swimmers in real time. Swimmers wearing Bluetooth tags are monitored by Bluetooth beacon scanners installed in the swimming area. The wearable Bluetooth tags periodically send beacon signals to the Bluetooth beacon scanners. Locations of swimmers are estimated using an improved RSSI-based localization algorithm. The radio links between Bluetooth tag and beacon scanners are interrupted when the victim is submerged under water for certain duration. Sirens placed in the monitored area are then triggered to alert lifeguards about drowning accident.

2 System Design

2.1 RSSI-Based Localization Methods

The received signal strength indicator (RSSI) localization method is classified as one of the range-based techniques. Depending on the signal attenuation model, the distance between two nodes can be estimated by measuring the strength of the received signal at one end (Azmi et al. 2018; Patwari et al. 2005). For line-of-sight propagation scenarios, the distance between two transceiver nodes can be determined by the following equation (Patwari et al. 2005; Lin and So 2013):

$$d = 10^{\left(\frac{A-RSSI}{10n}\right)} \tag{1}$$

where RSSI is the averaged signal strength received at reference nodes, A is transmitted power of the unknown target node, n is the path-loss factor of medium, and d is the distance between the unknown-position node and reference node. To estimate the coordinates of a target node, it requires at least three reference nodes in the wireless coverage area with known geometrical coordination. Figure 1 shows the geometrical coordination system having 04 reference nodes. The distances between the reference nodes and the target node can be obtained from the following equation:

$$d_i = \sqrt{(x_0 - x_i)^2 + (y_0 - y_i)^2} \tag{2}$$

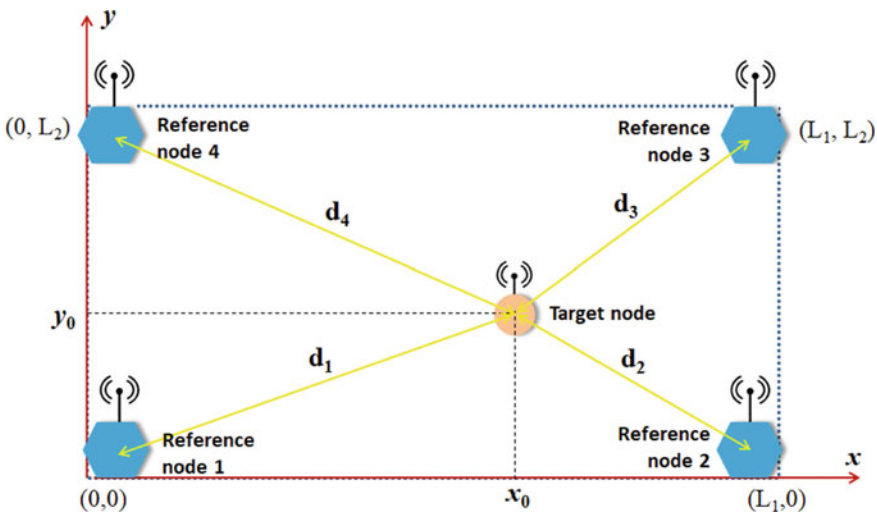


Fig. 1 RSSI-based localization technique

where (x_0, y_0) is the unknown source coordinates and (x_i, y_i) are the known coordinates of the i^{th} reference node. In this work, location of the target node is estimated based on the improved RSSI-based method reported in Toan et al. (2019) that can offer the average error below 10%.

2.2 System Structure and Operation Principle

The block diagram of the proposed early drowning detection system is depicted in Fig. 2. The whole system can be divided into three main components: Master station, Reference nodes and Target node.

- *Master station:* This unit consists of a PC, an Arduino kit (www.arduino.cc/en/pmwiki.php?n=Main/ArduinoBoardProMini) and a 433-MHz RF transceiver module (<https://www.makerlab-electronics.com/product/433mhz-serial-rf-module-hc-12-1000m/>). The Master station gathers the RSSI data of Target nodes sent by the Reference nodes via wireless connection. The data are then transferred to PC via USB cable for further processing. A computer program with localization algorithm is developed to calculate the position of swimmers in the

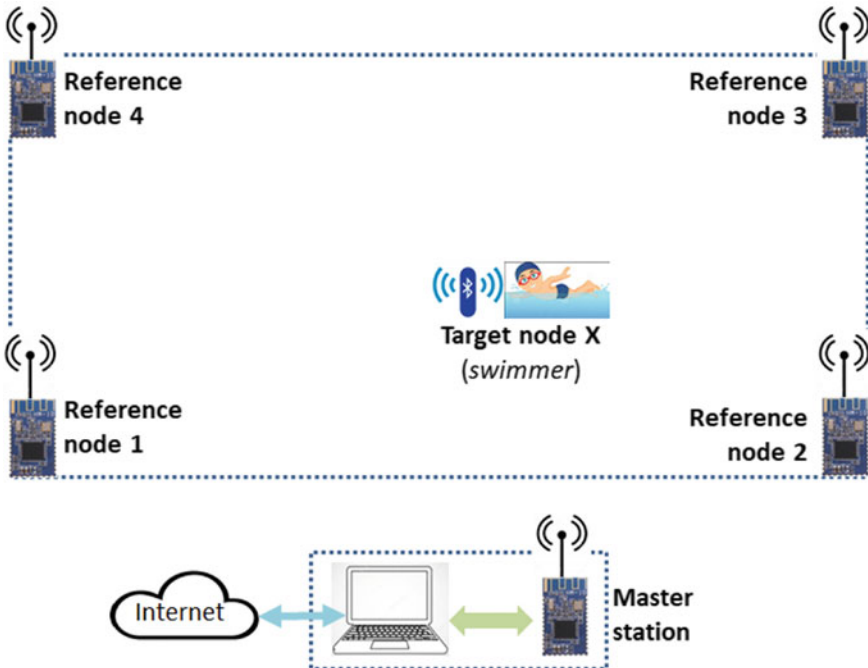


Fig. 2 Architecture of the proposed early drowning detection system

monitored area. Alert message can be sent to authorities remotely via internet connection when drowning occurs.

- *User node:* This is a Bluetooth Beacon module (<https://components101.com/wireless/hm-10-bluetooth-module>) carried by swimmer. Each swimmer wears a Bluetooth module on his/her head. The module is programmed to periodically broadcast advertising data (beacon signals) containing information about its ID and transmit power value. As shown Fig. 3, the UUID (Universally Unique Identifier) field can be used to store user IDs. The transmit power level of Bluetooth module is used to calculate the distance between the User node and Reference nodes.
- *Reference nodes:* The designed system has 4 Reference nodes. Each node comprises of an Arduino kit, a Bluetooth Low Energy module, and a 433-MHz RF transceiver, as shown in Fig. 4. These nodes will constantly scan for beacon signals broadcast by the User nodes to obtain information about RSSI data, user ID, and transmitted power level. These data will be sent to Master station over the 433-MHz radio frequency band. The position of a User node (swimmer) is determined based on its RSSI values collected by the Reference nodes.

Under normal conditions, Reference nodes periodically receive beacon signals broadcast by User nodes since swimmer’s head often stays out of water. In contrast, when swimmer is drowning, his/her body is submerged in water. Consequently, the communication link between Reference nodes and User node is interrupted due to high attenuation of electromagnetic waves in the water (Qureshi et al. 2016). The computer program on PC then starts a timer having the timeout value based on

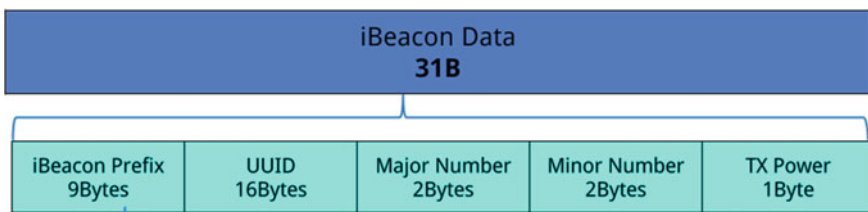
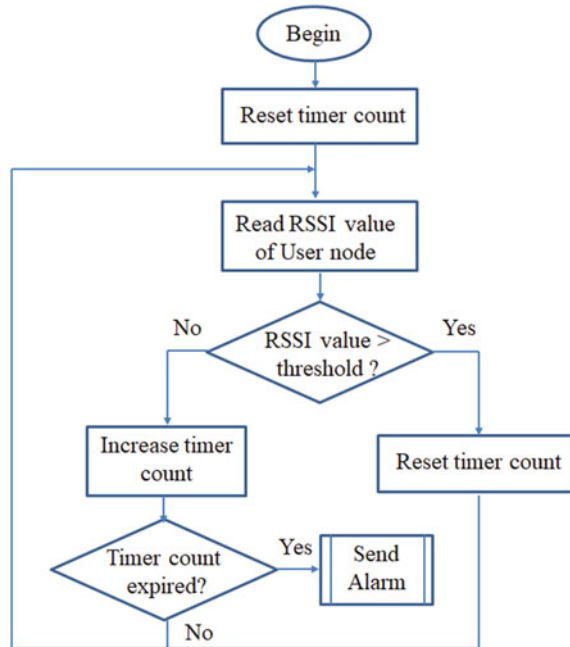


Fig. 3 Structure of an advertising packet (<https://stackoverflow.com/questions/38759929/hm-10-at-commands-using-beacon-way-to-broadcast-sensors-data>)

Fig. 4 The block diagram of a Reference node



Fig. 5 Flowchart of alarm trigger



swimmer's breath holding capacity (www.healthline.com/health/how-long-does-it-take-to-drown). The timer is reset if it stops before reaching the timeout value. Once the timer is expired the alarm function is triggered. Sirens placed in the monitored area are then activated to alert lifeguards about drowning accident. This process is illustrated by the flowchart in Fig. 5. By using the RSSI-based localization algorithm, the system can quickly locate the position of drowning victims for conducting rescue operation.

3 Experimental Results

The prototype of the proposed early drowning detection system was built and tested. Reference nodes were installed on a riverbank, as shown in Fig. 6. Electronic components of Reference nodes were arranged in a plastic enclosure, as presented in Fig. 7, and placed at a height of 2 m above the ground. For User nodes, commercial Bluetooth Low Energy tags were used to transmit beacon signal. In this study, the AXAET PC062 and the USR BLE101 Bluetooth modules were customized as head-worn devices suitable for swimmers as shown in Figs. 8 and 9. These Bluetooth tags transmit advertising data (beacon signals) at a certain rate called advertising interval, in milliseconds (Fig. 10). In Bluetooth Low Energy protocol, this interval can be set from 20 ms to 10.24 s, in steps of 0.625 ms (<https://www.argenox.com/library/blu>



Fig. 6 Installation of Reference nodes at river bank

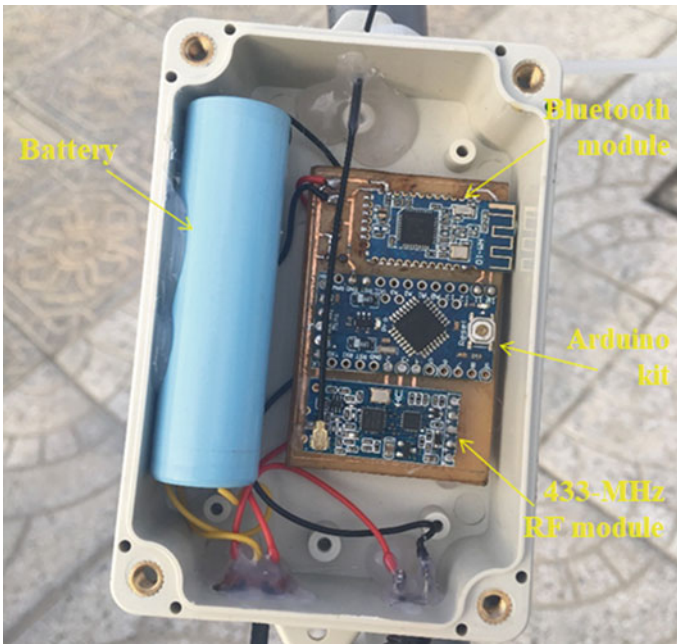


Fig. 7 Electronic circuits of a Reference node

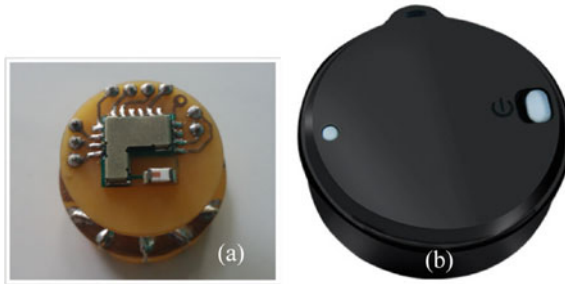


Fig. 8 User node (a) designed with USR BLE101 module (www.pusr.com/products/bluetooth-serial-module.html) and (b) used AXAET PC062 module (<https://main.axaet.com/ibeacon-pc062-p00096p1.html>)



Fig. 9 Testing the system at a swimming pool. Small image: a swimmer wears the Bluetooth module on his head

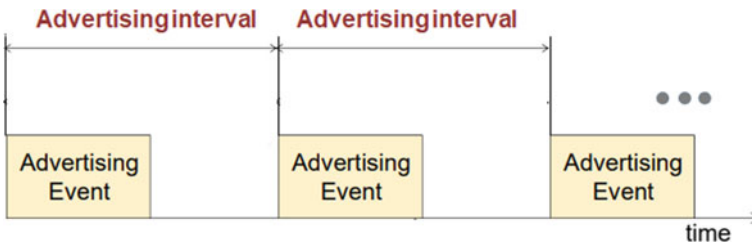


Fig. 10 Broadcasting advertising packets in Bluetooth Low Energy

[etooth-low-energy/ble-advertising-primer/](#)). The shorter advertising interval is set, the more power the beacon signal uses over time. Besides, decreasing this interval allows obtaining more precise location derived from the RSSI values. In order to maintain a quick detection time, the optimal advertising interval should be chosen about 100 ms for the number of User nodes below 100 (Shan and Roh 2018).

A computer program written in Java was developed to calculate and display the position of swimmers in the monitored area, as seen in Fig. 11. Tables 1 and 2 show the estimated coordinates of swimmers and the corresponding measured RSSI values for the monitored area of 900 m² and 2,500 m², respectively. The experimental results show that the average errors of the coordinate calculations are less than 10%. This degree of accuracy is acceptable for rescue operations and allows lifeguards to narrow down the location of the victim. The computer program will continuously display the swimmer's position in real time on the screen and so lifeguards can quickly locate the victim when drowning occurs.

4 Conclusions and Future Work

The prototype of the early drowning detection system capable of monitoring the swimmer's position in real time was presented. The system's functions were developed based on the application of Bluetooth Low Energy technology and the RSSI-based positioning algorithm. The proposed system helps to narrow down the search area and reduce the rescue time when drowning occurs. For future, the system software will be upgraded to perform supervising of a large numbers of swimmers. The Reference nodes can be equipped with high-gain antennas to cover larger swimming areas.

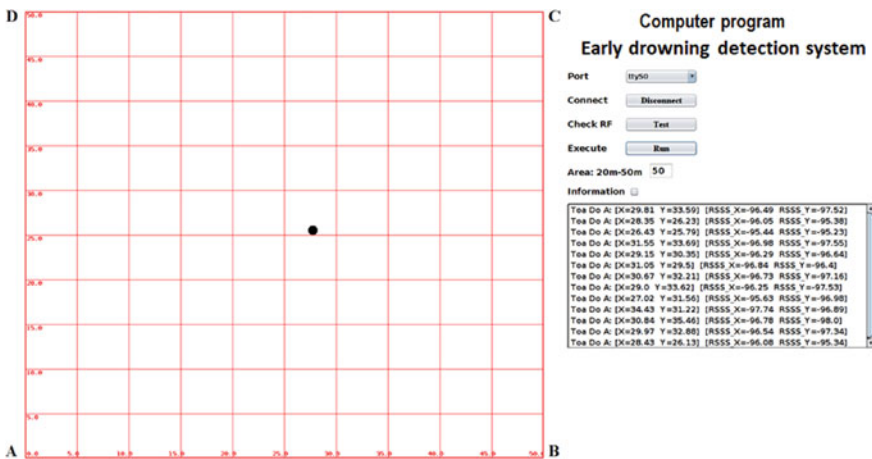


Fig. 11 Graphical interface for displaying swimmer's location

Table 1 Estimated swimmer's locations—Case 1: monitored area = 30 m × 30 m

Sample no	Received RSSI (dBm)		Estimated coordinates (m)	
	X value	Y value	X value	Y value
1	-90.84	-90.89	15.57	15.65
2	-90.51	-90.62	14.98	15.17
3	-90.91	-90.03	15.68	14.17
4	-91.23	-91.57	16.28	16.93
5	-91.10	-90.21	16.03	14.48
6	-90.51	-91.28	14.98	16.37
7	-91.53	-91.51	16.85	16.81
8	-91.17	-90.98	16.17	15.82
9	-90.03	-91.67	14.18	17.13
10	-90.76	-91.07	15.42	15.98
11	-90.52	-91.50	14.99	16.79
12	-91.38	-91.65	16.56	17.08
Actual coordinates: X = 15 m, Y = 15 m			Averaged value: 15.64	Averaged value: 16.03

Table 2 Estimated swimmer's locations—Case 2: monitored area = 50 m × 50 m

Sample no	Received RSSI (dBm)		Estimated coordinates (m)	
	X value	Y value	X value	Y value
1	-96.49	-97.52	29.81	33.59
2	-96.05	-95.38	28.35	26.23
3	-95.44	-95.23	26.43	25.79
4	-96.98	-97.55	31.55	33.69
5	-96.29	-96.64	29.15	30.35
6	-96.84	-96.40	31.05	29.50
7	-96.73	-97.16	30.67	32.21
8	-96.25	-97.53	29.00	33.62
9	-95.63	-96.98	27.02	31.56
10	-97.74	-96.89	34.43	31.22
11	-96.78	-98.00	30.84	35.46
12	-96.54	-97.34	29.97	32.88
Actual coordinates: X = 30 m, Y = 30 m			Averaged value: 29.85	Averaged value: 31.34

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How Artificial Intelligence Revolutionizing Digital Marketing



Atheer Khalid Alansari, Allam Hamdan, and Bahaeddin Alareeni

Abstract In the last decade, the use of Artificial intelligence in the digital marketing has remarkably increased. Although it is a push for digital marketers, in fact, all applications of artificial intelligence affected the complexity of maintaining business competitiveness. The author aim to investigate the new techniques of maintaining competition and insure efficient usage of AI at its full potential. Thus, this qualitative study analyses what strategies could be used to succeed and standout from other digital marketers while considering what AI brought in new insights into the digital marketing field.

Keywords Artificial intelligence · Digital marketing · Bahrain

1 Introduction

The penetration of social media has changed the consumer behavior. Many companies noticed that digital marketing became crucial and it became much broader than the simple online channels of 20 years ago. Hence, these companies started creating digital marketing department that is separate from the marketing department itself (Kingsnorth 2016). Such reaction by these companies was natural to follow the consumer concentration on the social media.

Digital Marketing is using the internet to promote products to targeted people. Understanding people and how they are using the technology is the key for successful digital marketing (Damian 2017). However, due to the increasing number of internet users over the world, it became challenging to convert all collected data and sources

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from users into great insights. For that reason, digital marketing departments became in dire need of new methods to turn the mountain of data into define strategy. Lately, many digital marketers have been using artificial intelligence (AI), or machines that are able to “*simulate human intelligence process*” such as problem-solving and learning (IEEE 2019). Similarly, e-commerce giants such as Alibaba are implementing artificial intelligence (AI) in a way that affects buying decisions while they can know the products needed even before the user know that (Karlinsky 2019).

1.1 Research Problem

Nowadays, having a simple website is no longer enough. For this reason, leading companies were encouraged to raise their digital marketing standards to maintain their competitiveness.

So, as the Microsoft’s CEO, Satya Nadella said AI became the new “runtime” of leading firms. Now, AI is acting as the pricing manager of amazon (Mitchell 2017), as the sale man of eBay (Kurovski 2018), and as the broker in Indigo’s marketplace (Agriculture 2018).

Prior research has claimed that AI dropped a lot of traditional constraints and transformed the rules of competition accordingly. However, this research will focus on defining the new techniques of maintaining competition. That would help digital marketers to understand their evolved role and insure usage of AI at its full potential.

1.2 Need for the Research

The purpose of this study is onefold: to investigate how AI-application in digital marketing can help businesses compete. Thus, this research focuses on the following research questions:

- 1- What are the essential elements of supporting a competitive edge?
- 2- How digital marketer can outsmart others in the era of AI-marketing?

The number of publications on digital marketing and AI has increased specifically after 2017 (Feng et al. 2020). However, it seems that there is a lack of publications of how application of AI in digital marketing can help companies to compete. The aim of the research is to encourage companies to implement AI and explore how AI in digital marketing allows companies to stay competitive in the digital era. This research could be used by digital marketing professionals as a tool to understand AI integration and work with it in a more user-friendly manner.

1.3 Nominal Definitions

Artificial Intelligence: The ideology and development of computer systems that can carry out jobs usually requiring human feeling. Specifically, in making tough decisions, visual and voice recognition, and interpret languages (Knowles 2016).

Machine Learning: The ability of a computer to gain knowledge from raw data and experience instead of being programmed by humans (Deisenroth et al. 2020).

Content Marketing: A strategic marketing method centered on all forms of content that add value to consumers to gain and keep audience (Gunelius 2011).

Internet of Things (IoT): The network of electronics, sensors, and software to communicate, or sense or interact either within their internal states or within their surrounding environment (Chioma 2020).

Algorithm: In artificial intelligence, they are fundamentals which express to the machine how to executing a task or solve an obstacle(s) or answer a question (Grandinetti 2020).

1.4 Research Overview

In The next section, the author will briefly explain AI in digital marketing through the literature data. Following that, the method used in this study will be described. Then the analysis of the result will be discussed. Finally, the conclusion of this study would acknowledge its limitations as well as the recommended avenues of future research.

2 Literature Overview

In 1955, Prof. John McCarthy has initially invented the term «artificial intelligence». Since then, artificial intelligence theory used to be genetically fascinating for human being. Turing (1950) was the first researcher who discussed whether machines can really think or not in his research “Computing Machinery and intelligence” (Green-gard 2019). In ensuing a long time, a various of early guarantees and claims of AI had been made exaggerating the technology’s capabilities at the time. Such as Herbert Simon who expected AI would be able to defeat a human at the amusement of chess in a period of ten years from 1957. For such a simple expectation, it took another 40 years to see Simon’s vision into reality. A long time of incomplete wishes had put the advancement of AI on hold as individuals treated it as an innovation edge. Besides the lack of advanced computing technology. However, recent advancements have allowed AI to reappear into the industry nowadays and it eventually, AI started to become one of any tools that human can rely to success.

Currently, AI implies applications in digital marketing that are incredibly efficient and effective at performing tasks within one domain of information. There are many samples of this in our daily lives. And based on a survey done before, an astonishing 98% of marketers say they expect to work out benefits from using

AI. Marketers' interest in AI is pronounced, which makes the task of achieving a refined understanding of what the technology has gotten to offer evermore critical before marketers are forced to play catch-up. Only 28% out of the 98% marketers feel confident using AI. Yet, only 10% of them are currently using the technology to its full extent. Work must be done to shut the gap between hype and implementation of AI to see its benefits day-to-day and get ready for a vastly changed marketing landscape (Greengard 2019).

Since AI appearance, AI has come a long way and has approved itself as an important asset especially for managing business. It is important to note that AI never stops evolving since it is usually working with machine learning which enables machines to gain knowledge from encounters and adapt to any new situations (Greengard 2019).

2.1 What Marketers Need to Know About Artificial Intelligence?

Within the past 20 years, we have seen AI being flooded the advertising digital market. It has been helping marketers through programmatic and analytic tasks which refined advertising platforms. The advancement of analytics solutions provided by AI have helped marketers figure out their target audiences and augment their marketing campaigns to find higher return of investment.

Through this chapter, the reader will be familiarized with the most essential information about AI from marketing point of view.

2.2 Core Elements of AI Marketing

It is common to think of AI system as an intimidating system because building such a thing needs a careful process of human traits and capabilities in a machine to make it surpass our capabilities.

There are a wide variety of different systems of AI, or as the overseer of IBM's research on AI, Guruduth Banavar described it "a portfolio of technologies" (Kaput 2020). These systems focused on mimicking human intelligence while each of them serves different purposes. To Apply AI into the field of marketing, one needs to dive into the AI sub domains and understand them. This research will only cover the current 3 pillars of AI marketing:

1. Machine learning (ML):

ML acts as the floor of choice for marketers when they are facing mountain of data repositories. With ML existence, Marketers became able to find the common patterns and trends and understand the main cause of trends. Nevertheless, the machine will learn from the discovered information for any expected repeated pattern in the future and gains experience to make the work easier and predictable over the time.

2. Big Data:

Big Data allow marketers to deal with large data sets but with minimized manual work. Using big data acts as a shortcut to the targeted audience at the right time. There were many numbers of research studying the effect of collecting, valuing, and using data and how is it playing a significant role in getting a competitive advantage.

Most organizations have been collecting huge amount of data about their customers. Unfortunately, a survey was done in 2015 has found only 4% of companies are making the most of their collected data (White 2015). With having a solid data strategy, you would own the biggest resource in gaining a competitive edge.

3. *Humanized Recognition:*

Humanized recognition, or in other word, Natural Language Processing (NLP) & Computer vision. Technological researches used to place these two elements in separate categories. However, as for a digital marketer's aspect, these elements were used to understand the user either by visual recognition, content recognition or by voice recognition. Many companies started to integrate NLP into their business which raised the revenues of NLP market worldwide from around 3 billion U.S. dollars to over 5 billion in 2018. The rapid growth expected to see the revenues of NLP in 2025 over 43 billion (Tractica 2019). Hence, many companies started to realize the importance of NLP integration into their business due to others demand.

2.3 Key Value of AI

1. *Increase the Efficiency of Company Strategy*

With the help of automation and optimization, AI offers the opportunity to increase the quality of work of people. (RamonSaura and Decade 2020) even predictions in digital marketing are easier now with the help of AI. Methods can be tested without losing time and money. (Tiautrakul and Jindakul 2019) and Netflix is the best example where AI has saved more than \$1 billion (about \$3 per person in the US) per year (Gomez-Uribe 2015).

2. *Better Customer Service*

Brands found chatbots' capability to recommend items to customers (Ramon-Saura and Decade 2020) They are trained to understand customers' queries and supply exact answers (Accenture 2016) and they are trained to automate simple tasks such as return or exchange any purchased product (Facebook 2020).

3. *Personalized User Experience*

AI enables the marketing team to deliver a personalized user experience without being overly intrusive (RamonSaura and Decade 2020).

4. *Improve Company Return of Investment*

Marketers can now use AI to recognize potential clients or consumers and to offer them the ideal content that is relevant to their journey (Tiautrakul and Jindakul 2019), that could not be done without the help of ML and big data.

5. *Stay Ahead of the Competition*

Ever thought of paying close attention to the marketplace to know the performance of your competitors? Well, Competitive intelligence can help you. It is one of AI software that is used to see your competitors' activities, name the gaps in service or products and reveals their weaknesses and strengths (Gartner Inc. 2020).

2.4 *Literature Review*

The rapid growth of AI application in digital marketing has concerned many researchers. Some tried to figure out how AI changed the competition policy in digital marketing (Srinivasan 2020) and some tried to analyze emerging bases of competition besides many others who conducted their research to find the opportunities that AI can provide to digital marketers (Dumitriu and Popescu 2020; RamonSaura and Decade 2020; Ilmudeen 2021). These researches are presenting how AI experience is proving new business model. Providing new customer care services with automated chatbots, unique offers to selected customers, personalized recommendation, directed advertisements and Visual research recognition.

A prior search was concluded data is playing a crucial role in keeping company competitiveness. Due to the innovative approach of prioritizing the data, AL Nuaimi has concluded his research with simply having data does not create value. Yet, the value refers to the data gathering, managing, and analyzing (Nuaimi et al. 2015). Rowley (2017) agreed with Nuaimi and referred to the concept of big data as a source of competitive advantage on the market, which currently commonly known as developed version of the concept of Business Intelligence. Caseiro & Coelho tried to find the influence of business intelligence on the field of digital marketing. In their perspective, business intelligence takes the responsibility of giving results of analysis, indicators and reports based on gathered data to support the managerial decisions. And it allows to foresee the behavior of competitors, customers, markets, and the overall business environment (Caseiro and Coelho 2019).

Apart from this, there were very few researches about managing data in digital marketing and what are the methods of giant e-commerce in managing data and keeping their competitiveness (Ilmudeen 2021) some of these methods was to preserve special customer care services by using chatbots, preserve exclusive offers to selected customers with the help of ML, and by recognizing images to recommend comparable products.

Considering the regulation limits, Kosinski et al. (2016) has pointed that current regulations and the marked restrictions still allow processing of collected data to optimize the performance of digital marketing. And they concluded the better understanding of the consumer is what help in gaining the competitive advantage as well as leverage company activities to cater to the consumer intuition obtained. Thus, achieving competitive advantage in this way does not violate the current regulations (Kosinski et al. 2016).

Due to the importance of understanding the consumer through their data. Researchers started trying to improve ML algorithms to help in gaining competitive advantage. An experimental research aimed to rewriting the algorithm to increase AI efficiency and accuracy of targeted marketing. That research showed a professionally written algorithm had its effect and was able to get 10% higher accuracy (Ilmudeen 2021).

However, Mehta et al. (2019) was concerned with the high accuracy approach using ML and data because it allowed AI to screen our choices and decide for us everything. For that, they recommended a new competition policy and principles for algorithms responsibility to decrease the risk toward data security, predatory evaluating, and mechanical cartel issues. Thus, keeping competitiveness should not interfere with these principles, preferably.

Srinivasan (2020) has talked in depth of how AI is rewriting the competition policy in a more user-friendly way and discussed the strength of AI in digital platforms which is no longer about meeting the existing demand. However, it is about creating demand on their own by knowing the trend towards the consumption and be able to redirect the demand into another product/service.

Zwick and Dholakia (2020) had agreed with Drinivasan and found that AI-marketing can control consumers and channel their choices & decisions. That what made database marketing a powerful competitive weapon for companies since it allows them to be closer to customers as well as understating their needs to meet them.

Another research which was done by Dumitriu and Popescu (2020) had discussed in depth how keywords are important to the company. And understanding what keywords were selected by competitors and why these keywords were so important to the performance and increasing the account visibility in social media.

Based on literature review, search engine optimization has a positive effect on supporting company competitiveness. especially if keywords were selected carefully after seeing competitors keywords choice, then they will become more likely to have better impact. Besides SEO, gathering data is also positively affect company competitiveness only if these data were professionally managed. Machine learning is doing a decent job in helping marketers in managing the huge amount of data. Moreover, the better data management the greater effect of business intelligent on company competition. It becomes important to examine the impact of AI-marketing in competition bases. This study is an effort to find the factors that currently help marketers to support companies' competitiveness.

After exploring the literature, many questions arisen. The methodology of this study will focus on answering them along with the research questions. These questions are:

- 1- How can digital marketer outsmart competitors' marketing campaigns in the era of AI?
- 2- Since data, SEO and customer centric service are positively affecting company competitiveness which of them have the greatest impact?
- 3- What is the main challenge that is facing digital marketer in the era of AI-marketing?

3 Methodology

To find the answers of the mentioned questions in the earlier chapter, it was needed to analyze the practical situation. This could be done by conducting a qualitative research since using such method would help to find, understand, and explain the topic instead of predicting the found data (Bougie 2019).

Based on the context of this topic, this study focused on the perspective of a digital marketer specialist who also works with AI. Hence, the author thinks that qualitative method is suitable for this research since it is intending to find viewpoints and beliefs of AI implementation in digital marketing. However, its possible to collect data of organizations which implementing AI in their digital marketing campaigns. Though, the collected data would not highlight the current challenges, for instance, hence other methods might deliver data that does not meet the aim of this study.

The author aimed to conduct an interview which is, as explained by Bougie (2019), a systematic conversation to collect data for a study. The interview was planned to be with a digital marketing expert who is also using AI.

The main advantage of conducting an interview was to find up to date answers on AI implementation on digital marketing. While keeping in mind the main aim of this study, the interview questions were about:

1. Supply smart solution of competing in the era of AI digital marketing.
2. Find the current AI impact on digital marketing;
3. Display the new challenges facing the digital marketer.

The interview was done with Salah Kassab, a digital marketing manager as well as AI Enthusiast and e-commerce specialist. Due to the interviewee wish, the interview was conducted digitally instead of face-to-face meeting. The main reasons of choosing a remote interview were due to the COVID-19 pandemic which limited the international transportation. Nevertheless, the author showed full flexibility of gathering data to convince the interviewee to cooperate during the whole interview without ending it at any point. Hence, the response was received as recorded voice mail thought e-mail.

The knowledge gained from the literature review was the benchmark of forming the questions of the semi-structured interview. And the specialist was selected based on his LinkedIn profile which showed professional experience in the desired fields. Notes has been taken during the interview, summarized the important content, and finally analyzed to fulfill the goal of the research.

The following table shows the information of the selected interviewee.

Name	Country	Field	Acronym
Salah Kassab	Malaysia	Digital marketing	Expert

The major questions of the interview are shown below:

- How can you outsmart a competitor in the era of AI marketing to get a competitive edge?

- How AI is changing the role of digital marketer to keep the efficiency of digital marketing?
- what differentiates a good digital marketer from a bad one in the era of AI-Marketing?
- How digital marketer in small businesses can afford to compete the others?
- Which AI-application has the greatest impact on company competitiveness?

The respondent was well-knowledge, and he was able to supply good explanation to answer the research questions. Hence, the researcher did not need to conduct any other interview with another expert. However, this might be done to confirm the validity of the results of this research.

4 Results Analysis

After data was collected from the interview with the specialist, the data was described and analyzed. according to the aims of the research, First, the importance of integrating AI into Marketing will be cited by respondent and compared to the existing literature data.

Next, all the factors that would affect competitiveness throughout AI-marketing would be discussed and followed by exploring how can companies use AI in their marketing effectively. And finally, an analysis of the impact of AI on marketing on digital marketer role. The analysis will be focusing on answering the research questions as follow:

4.1 Outsmarting Competitors

According to the respondent, he said it is normal to have this concern in the current era since it is a fierce competition toward taking advantage of machine learning and deep learning paths and inject them in the digital marketing. Since many of companies was already forced to integrate AI with their digital marketing plans just because of the competitive pressure. However, to outsmart those competitors as a digital marketer, “you need to know exactly how you want to integrate these AI tools and finding the right purpose of AI algorithms,” said Kassab. Regarding how big companies are supporting their competitiveness, he told “Even google is using advanced algorithms to be highly competitive at market by improving their search algorithms.” In general, the respondent thinks since the tools are widely used, the way it has been used is what makes the difference. That is somehow like what ilumudeen concluded in his research (2021) about the importance of managing the data in the AI-digital marketing.

4.2 Most Effective AI-Application

Kassab has noted that data could be the core of the digital marketing which did not contradict the prior search done. However, he elaborated; “especially data mining, data analytics, and big data,” because simply having enough data would help getting the best outcome. In addition, the respondent confirmed the importance of selecting the right algorithm which could be affected by keywords as well as client’s data. The right algorithm can allow digital marketer to predict or visualize the results of marketing campaigns. However, these tools might be expensive to use. Yet, many platforms can be used by small businesses. Facebook for example, one of the biggest platforms, is the best in getting clients whither in B2B or B2C. Facebook can do the job as a platform to collect the right data and analytics within a small budget.

4.3 The New Challenges of Digital Marketer

The respondent confirmed the fact AI-marketing is transforming the role of a digital marketer, because the AI-marketing is more about analytics itself in addition to understand other AI application in digital marketing. Such as chatbots which are taking customer service into another level. However, the digital marketers’ role is directed to data analytics. Because in the end of the day, digital marketers would want to refine their campaigns beside considering other valid options like paid ads and email marketing. Their challenge revolves around optimization which comes from data and they have to “see if things are going as predicted. If not, they need to find where the issue is and work on it to make it work efficiently.” He added another challenge facing digital marketers which is their background. Most of digital marketers are coming from marketing background, not a background of data analytics. If any digital marketer was not worried about the new gap between these two backgrounds, he won’t be able to ride the wave.

5 Conclusions

The paper discusses that the advancement of AI-marketing has taking an effect on maintaining a business competitiveness. Based on the data obtained from the prior search and the conducted interview which was carried out within the context of this research, it was concluded that AI-Marketing is creating a whole new base of competition which is relying mostly on data, its source and how they are being analyzed by the digital marketer. By the end of the day, understanding algorithms and knowing the right use of these algorithms can help the good digital marketer to be distinguished from others. However, due to this focus on data and algorithms, the

new AI-marketing is slowly transforming the role of the digital marketer from digital marketing into data analytics.

5.1 Limitation of the Study

Since this study has used qualitative approach, there is a certain degree to improve the generalization of the result. Hence, the work could be carried out with another methodological approach to understand the root cause of these results. However, due to the number of interviewee (which is only one). The result might influence by selected person. Selecting another person might result different answers. For that reason, it is hard to say with certainty that the outcome of this research is comprehensive and complete. However, it is still believed that the quality of the collected data was assured.

5.2 Future Work

To obtain a deeper knowledge of the effect of AI on industry of marketing, this analysis must be done with more definitive evidence from business managers on the image of the impact of AI. On the other hand, as expressed throughout this study, the target client is always present, and it is important to consider the impact on everyone's lives in future work.

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Digital Marketing, Branding, E-commerce and Social Media

Galvanizing Digital Marketing Implementation in Small Businesses



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Abstract Effective marketing has always been one of the imperative factors to business sustainability in line with IR 4.0 and Society 5.0. It brings a vital concern, myriad challenges, and benefits to the world, including the development of local and global businesses, including small businesses. Predominantly, small businesses still face high sustainability start-up issues which needs to be studied further. By consolidating the current findings, this study aims to identify the direct effects of the internal factors of culture, technology, human and external factors of competitiveness, politics, and social, on digital marketing implementation as drivers among small businesses, in moving towards Society 5.0 era. This study employed the primary data of 218 small business owners from diverse industries that was collected via survey and self-administered questionnaire through a simple random sampling technique. The findings of descriptive and multiple regression analysis showed a significant positive relationship between internal factors of technological capacity, human capability and digital marketing implementation. Further on, external factors of competitiveness and political issues significantly linked to digital marketing adoption. While organizational culture (internal) and social factors (external) insignificantly connected to digital marketing implementation among small businesses. This current study sheds light by providing the critical authorities alertness on the importance of small businesses to employ digital marketing in their business since it generates a competitive edge in facing the inevitable challenges of the Society 5.0 era.

Keywords Digital marketing · Digital entrepreneurship · IR 4.0 · Society 5.0 · Small business · Internal factor · External factor · Critical factors

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1 Introduction

Undoubtedly, the Fourth Industrial Revolution's (IR4.0) worldwide agenda is still becoming a critical attention among policymakers, although the current trends are moving towards Society 5.0. In order to cope with this agenda, digitalization and transformation included in digital marketing, which are denoted as one of the important elements that should be highlighted by the scholars. The development of IR4.0 worldwide is not only affecting our daily activities, but also becoming a paradigm shift to the expansion of Small and Medium Enterprises (SMEs), where most of them are established as small businesses (SME Annual Report 2018/19). Whereas, small businesses, indubitably, plays a significant role in wealth creation as well as potentially significant contribution to the industry's sustainability (Chukwuma-Nwuba 2015; Thompson and MacMillan 2010; Turner and Endres 2017). Generally, they are providing a major contribution of employment opportunities in spite of providing long-term significant to Gross Domestic Product (GDP) and income (Caner and Wolff 2004). Furthermore, they also varied geographical in presence (Panitchpakdi 2006), boosting the entrepreneurial activities and dispersion of skills and technology as well (Varis and Littunen 2010), giving a significant contribution to distribution of income, tax revenue, efficient utilization of resources and family income stability besides employment opportunity (Syamsuriana et al. 2020a).

Nevertheless, the survival issue of small business in introductory stage is still a heated debate (Nassif et al. 2010; Jeff 2017), existing among policymakers, scholars and government. As examples, the US business sustainability rate recorded only 20% in the first year and depicted 30% during the second year (Bureau of Labor Statistics 2018). Additionally, firms in Canada also depicted that only 50% can survive over five years after business start-up (Jeff 2017). Similarly, in upper-middle-income countries such as South Africa, findings portrayed 70% of small businesses were unsuccessful within their first two years of start-up as shown by the Small Business Institute (SBI) (Business Tech 2018). Besides that, the business in China also showed alarming issue after half of their businesses reported failure within the first five years of operation (Zhang et al. 2013). No exemption in Malaysian business, whereby only 18 companies out of 100 registered companies with the Company Commission of Malaysia were able to survive after five years of startup (Bernama 2017). Recently, due to Covid-19 pandemic, 68.9% of SMEs in Malaysia recorded more than 50% drop in business within one week of the movement control order (MCO). While, about 92.5% of them currently have a negative outlook for the Malaysian economy for the rest of 2020 (Annuar 2020). This figure showed that the robust study about determinant factors of the best small business performance should be done to tackle this issue.

Judging from this issue, the present businesses are actively investing in tools and solutions that empower their existing processes, resources, personnel, equipment, including products to increase efficiency (Nagy et al. 2018). Embracing these new business trends, digital marketing was noted as one of the recognized platforms, which not only help to raise their business visibility, and strategies (Alzahrani 2019),

but also boost their competitive advantages and directly increase their business performance (Syamsuriana et al. 2020b). In the Malaysian context, digital marketing is notably the important element in doing business, especially during unpredicted situation such as the Covid-19 crisis. This method could be the best marketing strategy for SMEs including small businesses to market and sell their products or services, not limited to local but also international market. As mentioned by chief executive officer of The National Tech Association of Malaysia (Pikom), digital technology has demonstrated to be an advantage in sales, where businesses were able to cast a broader network, beyond their current location (Bernama 2021).

Nevertheless, the awareness of digital marketing usage in small businesses, especially in Malaysia have been largely debated by prior researchers. To illustrate, 48% of SMEs in Malaysia was reported to face digitalization challenge due to the lack of digital skills, instead of finance and technology limitations (Malaysia Digital SME Study 2018). Similarly, a survey completed by Adobe in partnership with Econsultancy via 13,000 marketing, creative, eCommerce, advertising, and IT professionals worldwide, reported that 43% of businesses in Asia lack of digital skills and capabilities including workflow issues and legacy technology and systems (Tan 2021). This figure raised the question that emerging digital marketing have been embraced less readily by businesses in Malaysia due to lack of digital literacy and competencies among entrepreneurs. Besides that, it will create difficulties to ensure the country thrives in the Fourth Industrial Revolution (4IR) era and make the concept of Society 5.0 in Malaysia successful. Accordingly, this issue may argue that a study on driver's factors for digital marketing implementation in small businesses is still relevant due to lack of prior empirical evidences, especially in the Malaysia scope. Consequently, in an attempt to reach and consolidate researchers understanding on this topic, the current study aims to identify the internal and external factors of digital marketing implementation in the context of Malaysian small businesses.

2 Literature Review

This section highlights the literature review related to the current topic. The subsection which starts with general information on digital marketing, followed by the internal and external factors of digital marketing implementation. Each of sub-section conveys hypotheses and sub-hypotheses formulation in this study.

2.1 Digital Marketing

Electronic marketing (henceforth referred to as digital marketing) is one of the rapidly rising marketing techniques which gradually replacing the traditional marketing techniques, not only in developed economies but also in developing and undeveloped economies, including Malaysia. The terms e-marketing, digital marketing,

internet marketing, online marketing and social media marketing are frequently interchangeably used by existing scholars, academicians, researchers, and practitioners to increasingly finding favor (Shaltoni et al. 2017). Prior to this, E-Marketing Association (EMA) defined digital marketing as an electronic information and application usage, for planning and executing the start-ups, pricing and promotion of ideas, distribution, developing products or services to generate exchanges between individual satisfaction and organizational goal (Burgess and Bothma 2007).

Similarly, digital marketing, also referred to the adoption of electronic data as well as communication technologies, mainly Internet of things (IoT) in order to complete marketing objectives (Shaltoni et al. 2017). In addition, digital marketing also offers an online marketplace to conduct business activities via virtual platform such as buying, selling, distributing and providing sales support of products and services (Awa et al. 2010). Similarly, digital marketing concept was formerly derived from traditional marketing philosophies, which later on expanded to the existing strategies in specific organizations and leveraging marketing approaches to connect with potential customers through online marketplaces, social media and websites (Bolos et al. 2016).

2.2 Internal Factors of Digital Marketing Implementation

Commonly, internal factors involve the factors occurring within an organization and under control. In this study internal factors were divided into three aspects: culture, technology and people. Digital marketing implementation among small businesses can be influenced by the value of organizations itself. This value was always related to the culture within an organization. Further to this, the culture, such as perceived of marketing benefits towards Internet technologies were relevant leads the SMEs to decide either to adopt or refuse business transactions via digital marketing implementation within their business (Lim 2010). Accordingly, numerous previous studies found that the organizational culture as a determinant of the implementation and acceptance levels of digital marketing among SMEs, including small enterprises (e.g., Modimogale and Kroeze 2011; DeBerry-Spence et al. 2008).

Besides cultural factors, the adoption of digital marketing within organizations also links to technological factors. Technological factors mean, the capabilities of an organizations to support the current existing technologies. Worldwide, many businesses have gathered customers' information in order to make better decisions with the technological advancement, such as using cookies to monitor online visitors and web users online shopping activities for target marketing and advertisement (Idemudia and Jones 2015). Digital marketing usage not only depends on the firm's technological capability, but have also been associated with usefulness recognition. This recognition refers to the level of individual's trust in using a specific technology compared to alternative systems in enhancing their work performance (Davis 1989). Similarly, the embracing of new technology, including digital marketing within firms

also enables the users to improve performance in giving tasks or activities (Dwivedi et al. 2009; Grandon and Pearson 2004).

Moreover, human resources factors such as technicians, experts, including knowledge and awareness within business organizations have also become driving forces for digital marketing adaptation. As mentioned by several past works, the knowledge of owner-managers about Internet marketing was a remarkable determinant of technology adoption. Further to this, the personal contacts of employees could be their networking, which became the sources of knowledge within their organizations (Elliott and Boshoff 2007; Poon and Swatman 1999). Likewise, awareness of important technologies in organizations also leads to digital marketing usage. Syamsuriana et al. (2020) highlighted that organizational readiness, competitor pressure and relatedness, have a significant and positive relationship to awareness of e-commerce. Besides that, Hasbolah et al. (2020) found that there was a significant relationship among perceived usefulness, perceived ease of use, perceived trust and self-efficacy towards adoption of e-commerce.

In developing this study, the authors have established three sub-hypotheses as follows.

H1a: Cultural factors are influencing digital marketing implementation by small businesses.

H1b: Technological factors are influencing digital marketing implementation by small businesses.

H1c: Human resources factors are influencing digital marketing implementation by small businesses.

2.3 External Factors of Digital Marketing Implementation

In contrast, external factors include the factors arising outside and beyond organization control. In this research external factors were separated into three factors: competitiveness, politics and social. Competitiveness factor covers the comparison of two businesses which offering similar products or services. Initially, competitiveness concept is connected to Alderson (1957) which competitiveness brings the meaning of search supported items to sustain in the marketplace. Another top scholar, Porter (1979) mentioned competitiveness linked to organizational unique position to develop specialization ahead competitors. He added, competitiveness should be above-average performance in the long-run (Porter 1985). Further to this, his works have received various recognition leading to the development of several theories on competitiveness and models such as marketing generic strategies and Porter five forces model. Meanwhile, Rauch et al. (2009), described competitiveness as the forces of organizational effort to leave behind main rivals which considered by a strong offensive attitude or aggressive response to viable threats. Based on the prior concept of competitiveness, many businesses ready to embrace digital marketing tools in order to be more competitive ahead their business competitors.

For instance, the study by Olomu and Irefin (2016) confirmed that e-Marketing adoption empower the business competitiveness across a wide-range of business growth. Another study by Syamsuriana et al. (2020b, 2020c) verified that e-marketing adoption gives competitive advantage to the firm which ultimately increase small business sustainability.

In addition, political factors, mainly connected with government support which includes rules, regulations, specific acts, policies, guidelines that plays a crucial role in increasing digital marketing adoption. Government needs to enrich digital technology usage, including galvanizing digital marketing as strategic components in the country to spur fully digital society (OECD 2019). Additionally, Berghaus and Back (2017) opined that digital transformation can be caused by regulative changes. Accordingly, the government plays a vital role as authorized policymakers to formulate and fortify current policies and programs in order to support digital transformation agendas in small businesses via developing precise policies, collaborative ecosystems, counseling and support initiatives and customized training programs (Pelletier and Cloutier 2019). Recent study by Chen et al. (2021) mentioned that digital transformation in small service business was supported by the government roles, not only limited in building a digital platform for small service business, but also provide digital training, promote digital payment and build a digital collaboration ecosystem.

Another external force denoted was the social factor. Social impact denotes the level to which a person accepts the others influence in order to maintain a self-defining relationship satisfaction, attain a favorable reaction or sustain the similarity of beliefs and actions with their own value system (Kelman 2006). Understanding the social needs have been very important in creating a high-quality business environment in the SME development (Čepel 2019). Prior to that, Powell and Rodet (2012) believed social environment was a driving force in influencing entrepreneurship. Meanwhile, Piccinini et al. (2015) suggested social factors of attributes, such as customer behavior, customer expectations were associated with digital shifts in the industry and changes in the competitive landscape. Based on study by AlSaleh and Thakur (2019), it was determined that social factor in term of social influence have a significant effect on attitude toward adopting technological innovations, which in this study context was digital marketing.

Judging from these arguments, this study assumes external factors competitiveness, politics and social influencing technology adoption including digital marketing implementation. Thus, another three external factors sub-hypotheses can be drawn as follows.

H2a: *Competitiveness factors are influencing digital marketing implementation by small businesses.*

H2b: *Political factors are influencing digital marketing implementation by small businesses.*

H2c: *Social factors are influencing digital marketing implementation by small businesses.*

3 Methodology

3.1 Data Sources

In order to answer all research objectives, this study employed quantitative research since it tests the cause and effect of interactions among involved variables (Sekaran and Bougie 2019); internal and external factors of digital marketing implementation in small businesses. Moreover, the main source of primary data for this study was collected via survey and self-administered questionnaire as a research instrument. The questionnaire was divided into four parts, namely: 1) respondents' information, 2) internal factors, 3) external factors, and 4) digital marketing implementation. The questionnaire was originally prepared in Malay language or *Bahasa Melayu* (the official language of the Malaysia) and then translated into English version; despite the fact a back-translation procedure ensured linguistic consistency. Furthermore, the questionnaire was pilot-tested with 15 managers of small businesses surrounding areas and a few adjustments were made to improve flow and ease of completion before the researchers launching the large survey.

3.2 Variables Measurement

Extending these variables, this study employed the scales adopted in literatures and revised them according to the study purposes to ensure validity and reliability of the measurement items. The digital marketing implementation was the dependent variable, which was measured using a nine items checklist, such as internet access, official e-mail, smartphone for marketing, rely on e-marketing, digital communication, e-marketing platform, updated e-marketing platform, and online transaction. All items were modified by researchers from various prior studies such as El-Gohary (2009), Galati et al. (2016), and Shaltoni et al. (2017). Moreover, the independent variables were internal factors formed by three constructs; culture, technology and human resources, while, external factors represented by factors of competitiveness, political and social. All items were measured using 5-points of Likert scale starting from 1, indicating strongly disagree, to 5 which denotes strongly agree. All items were modified from numerous prior studies (e.g., Azam and Quaddus 2012; Hossain et al. 2019; Sethi and Chawla 2014). Moreover, all constructs consist of three items, aligned with Hair et al. (2006, p. 752) suggestion, that there must be at least three-items per each construct in order to ensure the construct validity and reliability.

3.3 Sampling

As per record, the total number of small enterprises in Malaysia is 192,783. However, it is impossible for this study to include all total population of small businesses in Malaysia. Due to this limitation, this study extracts targeted samples in order to achieve the research objectives. The number of independent entities resulting from these databases was 384 (see Krejcie and Morgan 1970). In line with Spanos and Lioukas (2001), the researchers dropped from the sampling frame, forms with missing data that resulted from a duplicate company with a different location or brands without a formal structure. The total sample was then reduced to 218 independent entities.

Besides that, this study employed probability technique which is simple random probability, where the sample was chosen wholly by chance and each element of the population have an equivalent possibility to be selected (Sekaran and Bougie 2019). Several advantages in employing this technique were, the ability to select samples with study interest characteristics, easy to conduct and results predictable. This sampling technique was the most suitable for the study, since it managed to get a sampling frame with the cooperation of SME Corporation Malaysia.

Finally, 218 samples of small business owners were chosen as the final data to proceed with data analysis procedures. To test the formulated hypotheses, this study used *IBM SPSS Statistics* version 27. The results and findings in completing procedures of data analysis were further described as in the following sections.

4 Results

This section starts with respondent's composition which describes the overall background of the sample. After that, it is followed by descriptive analysis and Multiple Regression Analysis.

4.1 Respondents Composition

The respondent's composition as in Table 1, depicted a total of 218 useable responses from owners of small businesses in urban and rural area, indicating approximately an equal gender of the respondents (male = 52.8%, female = 47.2%). Besides that, the majority of respondents were married, and over 50% of them were young adults and middle-aged adults who owns business (see Horng et al. 2001). Probably over half of the respondents were in the same age group, while half of them reportedly have more than 10 years business experiences. Whereas, in term of educational level, they at least had completed primary education, as well as a half of them whom graduated from secondary education (50.1%).

Table 1 Background of respondents

Variables	Items	Frequency ($n = 218$)	Percentage (100.0%)
Gender	Male	115	52.8
	Female	103	47.2
Marital status	Married	181	83.0
	Single father/mother	4	1.8
	Single	33	15.1
Age (years old)	21–30	43	19.7
	31–40	58	26.6
	41–50	57	26.2
	51–60	43	19.7
	Above 60	17	7.8
Business experiences (Years old)	1–3	33	15.1
	4–6	53	24.3
	7–9	20	9.2
	≥10	112	51.4
Educational level	Primary	8	3.7
	Secondary	111	50.9
	Post-secondary	57	26.1
	Tertiary	43	19.7
	Postgraduate	5	2.3
	**Others	7	3.2
Business activities	Services	182	83.5
	Manufacturing	32	14.6
	Construction	3	1.4
	Agricultural	1	0.5
Average sales per month (≈USD)*	<445	24	11.0
	445–890	41	18.8
	891–1,335	28	12.8
	1,336–1,780	14	6.4
	1,781–2,225	35	16.0
	>2,225	76	35.0
Ownership type	Sole-proprietorship	194	89.0
	Partnership	12	5.5
	Private limited	12	5.5
Using digital tools in business	Yes	135	61.9
	No	83	38.1

Notes 1) ≈ means approximately; 2) conversion of USD 1 = RM4.50

Source Output based on this study respondents

In order to determine the business activities of services, manufacturing (including retail and wholesale), construction and agriculture, this study refers the guideline from the SME Annual Report (2018/19). Judging from Table 1, almost 85% of respondents in this study were providing services, follow by 14.6% involved in manufacturing and the remaining 2% were operating construction and agricultural businesses. Probably this study only focuses on small businesses with an average monthly sales less than USD 2,225 as main sample criteria, almost all of them were holding sole-proprietorship ownership instead of partnership and private limited enterprises. Additionally, the findings also showed that over 60% of the respondents stated that they were using digital tools in business activities, indicating a moderate level of digital implementation in small business. As a note, this survey was done between January 2020 and Mid of March 2020 that was before the enforcement of the Movement Control Oder in Malaysia. Thus, the researchers predict the level of digital marketing implementation rose to a higher level due to this unprecedented issue.

4.2 Descriptive Analysis

In order to give an initial picture of the data collected, this study presents descriptive statistics on main variables. The mean and standard deviation (SD) of the main variables for the research were calculated and described as in Table 2.

In descriptive analysis, the measurement of all constructs which scaled from 1 to 2 were denoted as low, 3 as moderate and 4 to 5 as high. As shown in Table 2, the mean values for dependent variable, digital marketing implementation (3.38) was relatively surpassing the moderate scale of 3. Accordingly, this research found that

Table 2 Descriptive analysis of the model

Variables	Mean	Standard Deviation (SD)	Cronbach’s Alpha (α)	Skewness	Kurtosis
Digital Marketing	3.3818	1.00902	0.979	-0.344	-0.893
Cultural Factors	3.2615	1.01117	0.829	-0.370	-0.586
Technological Factors	3.5092	0.85758	0.840	-0.677	0.017
Human Resources Factors	3.4587	0.96353	0.943	-0.832	0.121
Competitiveness Factors	3.5046	0.89330	0.944	-0.724	0.320
Political Factors	3.5122	0.87936	0.893	-0.572	0.354
Social Factors	3.5963	0.84857	0.867	-0.763	0.819

Note Dependent variable is Digital Marketing
Source Based on the study IBM SPSS Statistics output

majority of respondents have implemented moderately the digital marketing in their business.

Furthermore, the mean value of internal factors: culture, technology and human were also found to be superior than 3, which were 3.26, 3.51 and 3.45 respectively. Besides that, mean values of external factors such as competitive, political and social also depicted higher value than 3.5. Judging from the all-mean values of all variables which were beyond 3 (moderate), the study concluded that the scale of internal and external drivers of digital marketing implementation in their small businesses were at moderate level.

In addition to descriptive analysis, Cronbach's Alpha (α) value was used to determine the reliability, and internal consistency of a set of scale or test items of each construct (as cited by Chaiprasit and Swierczek 2011). Ar and Baki (2011) recommended the Cronbach's Alpha value must be above 0.70 to be deemed acceptable for many studies. Based on Cronbach's Alpha value from the output of this study, the value ranged between 0.83 and 0.98 which brings to the conclusion of high reliability. The result aligned with Sekaran and Bougie (2019), whom recommended that the value of Cronbach's Alpha must be near to 1, which indicates the higher the internal consistency reliability.

Moreover, normality of data can be measured in several ways, but, coefficients of multivariate skewness and kurtosis were considered the most common items to be used in determining the normality of the data (Byrne 2010). Judging from skewness values of the model as in Table 2, all items in the study satisfied the value of -1.0 to $+1.0$ and Kurtosis was less than 7.0, which was considered acceptable in order to demonstrate a normal distribution (Cohen et al. 2002; George and Mallery 2010). This indicates that the data distribution in this model was normally distributed. Succeeding, this study proceeds to the main test of the research; testing the formulated hypotheses. Hence, succeeding sections have discussed the results of hypothesis testing using multiple regression analysis.

4.3 Multiple Linear Regression Analysis

This section highlights the overall findings of hypotheses testing for this study as displayed in Table 3. This table shows the summary of the overall model as a resulted of multiple regression analysis. Based on the overall findings, a correlation coefficient (R) value of 0.863 in this study indicates a good level of prediction. Meanwhile, all independent variables of this study: internal and external factors explain 74.5% coefficient of determination ($R^2 = 0.745$) of the variability of digital marketing implementation. In particular, culture, technology, human, competitiveness, politics and social explained 74.5% of the of the variance and the model were significantly predicting the digital marketing implementation ($F = 102.967$, $p = 0.001$).

Initially, a multiple regression analysis was conducted to predict how do the factors of internal culture, technology, human, competitiveness, political issue and social factor could significantly help to predict the digital marketing implementation among

Table 3 Regression analysis of the model

Factor	Hypothesis	Variables	Beta Standardized Coefficients	t-value (Sig. value)	Result
<i>Internal</i>	<i>H1a</i>	Cultural Factors	-0.007	-0.089 (0.929)	<i>Not significant</i>
	<i>H1b</i>	Technological Factors	0.203	1.866* (0.063)	Significant
	<i>H1c</i>	Human Resources Factors	0.275	2.548** (0.012)	Significant
<i>External</i>	<i>H2a</i>	Competitiveness Factors	0.236	3.014** (0.003)	Significant
	<i>H2b</i>	Political Factors	0.147	1.870* (0.063)	Significant
	<i>H2c</i>	Social Factors	0.089	1.534 (0.126)	<i>Not significant</i>
<i>R</i>	0.863				
<i>R</i> ²	0.745				
<i>F</i>	102.967***				

Notes 1) Dependent variable is Digital Marketing. 2) Significance levels = *** 0.001, ** 0.05, * 0.10

Source Based on the study IBM SPSS Statistics output

small businesses. As displayed in Table 3, most of the hypothesized relationship was positively significant and satisfactory aimed for analysis. Furthermore, H1b, H1c, H2a and H2b contributed significantly to the model, meanwhile, H1a and H2c did not contribute significantly to the model. In specific, technology (B = 0.203, p < 0.10), human (B = 0.275, p < 0.05), competitiveness (B = 0.236, p < 0.05) and politics (B = 0.163, p < 0.10) had positive and significant relationship with digital marketing implementation, while, culture and social have no significant relationship associated with digital marketing implementation. In other words, the regression weight for internal and external drivers in the prediction of digital marketing adoption was significantly different from zero at the 0.05 and 0.10 levels (one-tailed).

5 Discussion

The main objective of this study was to identify the driver factors of galvanizing digital marketing implementation among small businesses. In order to answer all research objectives, this study separates the factors into internal and external factors. Internal factors include the internal culture of organization, technology capacity

and human capability (expertise/employees), while, external factors counted in competitiveness among existing rivals, political issue and social preferences.

Undeniably, in achieving IR4.0 elements, it brings to myriad barriers not only to personal challenges, but also including to scientific challenges, technological difficulties, political matters and economic issues (Yusri 2018). These challenges also affect business entities. Considering this issue, organizational culture, however, was seen not to be a factor that impact on technology acceptance in this study. The current finding was totally in contrast to many prior studies since last decade (e.g., Straub and Karahanna 1998; Harris and Davison 1999). The prior scholars discussed the culture as the same mindset that differentiates the members of one group or type of individuals from another (Hofstede 1992) and the usage of explicit information to create implicit knowledge as well to determine the group differentiation (Bissessar 2018). In comparison to this study, some previous studies agreed that the facets differences of technology usage were influenced by cultural dimension (see Burn 1995; Straub 1994; Gefen and Straub 1997). Additionally, the national culture and the rate of Internet based digital technology implementation of a country were closely associated (Erumban and Jong 2006). This current study also had dissimilarities to Hossain et al. (2019), where they found that organizational factors played a poor role in the technological adoption process, meanwhile, SMEs can play a better role with the better culture within the country itself. However, the intentions of individuals to innovate could differ since the cultural factor could be considered as a way of doing business in a specific society (Huang et al. 2010; Rowley et al. 2011).

Besides culture, technology capacity of the firm could be one of the internal drivers that lead to the digital marketing within the small businesses. Initially, Iacovou et al. (1995) believed an extensive form of technological advancement through ICT can help many SMEs to conduct businesses via the combination of various method of communication tools, not limited to connect the business to their potential customers but also offering the information of business, products or services. Prior to that, Rogers (1983) highlighted those drivers of technological diffusion, including technological features as well as internal and external characteristics of the businesses. In this nature, this study found that digital marketing, among small businesses in Kelantan, Malaysia was influenced by technological capability in their firms. Hossain et al. (2019a, b) opined that technological factors such as ICT, customer service, business processing was one of the critical success factors significantly related to the e-commerce adoption among in SMEs. In contrast, the predominant organizational culture highlights the employees struggle that negatively impacts e-commerce implementation in Asia (Poorangi et al. 2013). As mentioned, e-commerce act as a platform to conduct marketing activities via digital platforms. Last but not least, internal drivers for digital marketing in this study were the human capability which brings the means of employees in the organization itself. It relates to the easiness to use digital marketing tools in conducting business. Knol and Stroeken (2001), reasoned that digital business adoption was totally related with comprehended advantages and

technology awareness within the organization. Meanwhile, Alam et al. (2011) highlighted manager's characteristic aside from structural readiness, compatibility, relative advantage and security as the factors that effects on technology implementation In Asian countries.

On the other hand, external factors such as competitiveness and politics, depicts the significant factors of digital marketing implementation among small businesses. In general, the competitiveness among existing rivals have become the push factor in the current environment. For instance, the unprecedented events such as Covid-19 pandemic has forced entrepreneurs to create a more competitive edge, to sustain their market demand. One of the competitive advantages that may lead the organization ahead of their competitors was adoption of digital marketing instead of sticking to traditional marketing techniques. Besides that, the political factors, for example new legislation and government intervention (see Hossain et al. 2019a, b) also was denoted as a significant factor in the digital marketing implementation. In Malaysia, Malaysia Digital Economy Corporation (MDEC) was established to galvanize digital economy development. This entity, mainly responsible to re-shape Malaysia as an innovative producer of digital content and services via formulating first-mover digital programs and initiatives. For the purpose of driving the Malaysian digital economy to new elevations, the government has formulated a number of roadmaps and policies, for example, National Industry 4WRD Policy, National eCommerce Roadmap, National Big Data Analytics (BDA) Framework, National Digital Free Trade Zone (DFTZ) Initiative, National Artificial Intelligence (AI) Framework and National Internet of Things (IoT) Framework. These initiatives were not only meant to support the business environment that offers business opportunities, but also to sustain their growth. In contrast, social factors such as the changes in fashion and taste or the growth in spending power of a group was insignificant to influence the implementation of digital marketing among small business. This finding disagreed to several prior studies such as Azam and Quaddus (2012) and Dubitskaya and Tcukanova (2018), probably due to the multi-racial and multi-ethnic characteristic of country itself. Generally, Malaysia is a country composed of several races, mainly Malays, Chinese and Indians. Even though the society was a part of business existence, but social factors were diverse across countries due to difference of demographics, religions, province, lifestyle, thinking, population growth rate, trends, consumer opinions and behaviors. Therefore, social factors might not be a crucial factor to be considered by small enterprises in order to employ digital marketing in their businesses.

6 Conclusion and Future Studies

Many businesses in diverse sectors have adopted digital marketing into their business models, to align with an era of 4.0 developments, and especially now that they are moving towards Society 5.0 to cater for key social issues in present-day society. As discussed, the digital marketing through the Internet business accessibility can increase the way of engaging with customers and promoting the products

and services as well as supporting the business. In line with this development, this current study provides an empirical result on the relationship between internal and external factors of digital marketing implementation among small business in moving towards Society 5.0. The findings showed a significant positive relationship between internal factors of technological capacity, human capability and digital marketing implementation instead of organizational culture. On the other hand, external factors of competitiveness and political issues have a positive significant relationship with digital marketing adoption, while, social factors were insignificantly related. The theoretical point of view is that, internet and digital marketing tools were very significant for conducting, strengthening and developing the interactive communication among small businesses which were consistent with the business values.

In addition to its contributions, the delimitations were also highlighted in this current study. According to the variables, this study only ponders some internal and external factors of digital marketing implementation, whereas there are numerous other determinants of digital entrepreneurship adoption. Besides that, the respondents involved in the current study solely focuses only on certain districts of Kelantan, although small businesses were notably scattered to all the states. Constraint on research areas lead to the questionable generalization of the findings and limited to better responses in improving the results. Furthermore, another limitation of this study was the quantitative approach, which collected data of 218 samples only.

However, by taking into consideration these delimitations, future researchers in this field should add on other variables linked to digital entrepreneurship such as in terms of motivational factors, personal innovative effort and organisational readiness. In addition, future researchers could extend this study to a broader scale, by intensifying the research areas which include both urban and rural areas around the east coast, northern, central, and south, as well as conducting a contrast study between regions using the framework of the present study.

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The Predilection of Courier Service Selection During Cybershopping in Malaysia



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Abstract Cybershopping activities directly create competitiveness within the logistics industry, including courier service providers. These sectors are getting tremendous attention during unprecedented Covid-19 pandemic. The courier service is becoming a crucial activity not only in manufacturing, warehouse and trading but also for individuals. There are certain inclination factors of service quality based on the SERVQUAL model that can contribute to a high level of selection over courier service in the customer's perception. Perceived of SERVQUAL by consumer should be a vitally-important element to maintain customer satisfaction and loyalty. This article aims to study the predilection that led to courier service selection, during their online shopping in Malaysia context. This study aims to examine relationships between SERVQUAL dimensions of Responsiveness, reliability, assurance and courier service selection. A total of 346 screened respondents throughout Malaysia were conveniently collected via electronic questionnaire. Descriptive, reliability, validity and normality of the data were tested with IBM SPSS Statistics. The key findings of multiple linear regression analysis highlights that all hypotheses were supported by the study. The obtained results confirmed statistically significant relationships among responsiveness, reliability, assurance and courier service selection. This research offers significant insights into service quality in terms of responsiveness, reliability, and assurance by service providers in order to increase the possibility of courier service selection retention during cybershopping in Malaysia.

Keywords SERVQUAL · Service quality · Logistics · Courier service · Factors · Customer satisfaction · Online shopping · Cybershopping

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1 Introduction

In this era, many businesses are trending in investment of tools and solutions not only to differentiate existing products or services, but also to empower organizational capability to boost efficiency in term of equipment, processes, and personnel (Nagy et al. 2018). In line with this current trend, e-commerce is one of the familiar platforms to increase visibility and strategies of business (Sidek et al. 2020a; Hasbolah et al. 2020; Alzahrani 2018) as well as catalysing the competitive advantages which finally can improve business performance (Sidek et al. 2020b).

Unprecedented Covid-19 pandemic have led to a gradual switch from offline to cybershopping (online shopping) in worldwide, including Malaysia. Subsequently, Malaysia recorded 82.3% by record in cybershopping, thus becoming one of the highest internet penetration rates in Southeast Asia (Morgan 2019). In Malaysia, there are many e-commerce platforms that have been recognized, example Shopee, Lazada, PG Mall, Zalora, eBay, GoShop, Lelong, Mudah, PrestoMall, 11 Street, Carousell, and so forth. In fact, statistical record depicted that 82% of internet users in Malaysia utilize e-commerce platforms for their cybershopping (Global Digital Reports 2020).

Increasing in cybershopping activities, directly increase the opportunity of greater performance of logistics companies. Hence, the logistics industry carries a vital role to lessen the effect of economic collapse. Furthermore, this industry is considered as a cushion to support and maintain the top performance of the sector, as well as sustain in this unprecedented chaos (Aman 2020). However, the tremendous growth has also led to myriad challenges for logistics industry players since they attempt to manage the extraordinary increase in demand within a challenging operational situation.

The term courier service itself has currently considering as an important link in the logistics sector for logistics activities such as the delivery of goods from seller to buyer, trading, service company, and manufacturing. Additionally, the fast development of the online and Internet usage, requires service providers to move rapidly to meet the expectation in this demand shift for delivery services in spite of the inadequate infrastructure and tight limitations (Lee 2021). Consequently, several issues were raised such as reported by Federation of Malaysian Consumers Associations (FOMCA) where they stated about 380 complaints received in this year. Another issue highlighted by Malaysia Consumers Movement (MCM) was, increased complaints about unsatisfied management by courier service firms during the pandemic since customers solely rely on cybershopping and delivery (Chua 2021). Besides, MCMC explained the volume of complaints received in 2020 was classified as extraordinary with an increase of 260%, compared to 58,139 reports in 2019. The Commission in its report also described the reports about delivery and courier services have been shifting upwards compared to three years ago in addition to the demand for parcel deliveries, which significantly increased during the Movement Control Order (MCO) which brings to an increase of 542% as reported in 2020 (Yeoh 2021).

These issues relate to customer satisfaction among the courier service users. While, customer satisfaction has always been linked to service quality matter since they are the determinants of success factors for an organization which concerns about Resilience, Development, Growth, and Competitiveness in the market (Angelova and Zekiri 2011). As recognized by many prior works in the past, service quality measurement and dimensions were mainly associated with the SERVQUAL model by Parasuraman et al. (1985). But, Ramya et al. (2019) underlined the gap between service quality specification and service delivery, where there were inconsistencies in the actual service delivery, that is, the service providers or employees do not perform at the level expected by the management. Therefore, this paper intends to examine nexus between SERVQUAL dimensions of responsiveness, reliability, assurance and courier service selection during Cybershopping in Malaysia. This research can be a reference to understand the predilection of courier service selection in customer's perspective to reduce complaints received from them.

2 Literature Review

This section underlines several literature reviews from prior studies. As mentioned by Galvan (2006), the literature review not only increase the rate of relapse by using latest literature, but also could establish a framework that appeal to pivotal landmark scholarly works to give full scope and range of the theories.

2.1 Service Quality (SERVQUAL)

The concept of customer satisfaction has always been related to the quality of product or service. In customer perspective, quality associated to their satisfaction level. They translate the best satisfaction of consumers' preferences, which measure the highest quality of products or services (Yarimoglu 2014). Meanwhile, courier service quality can be linked to SERVQUAL Model. SERVQUAL Model is an abbreviation of service quality itself, which was initially developed by Parasuraman et al. (1985). The SERVQUAL Model can be defined as the gaps of relationship between customers' expectations and their judgement of the actual service delivered (Kahnali and Esmaeili 2015). Li et al. (2003) stated that, SERVQUAL theory has been comprehensively integrated as a useful management technique as an indicator of customer satisfaction, prioritizing improvement potential, and eventually attaining overall service quality.

Initially they proposed five dimensions of SERVQUAL Model such as Reliability, Responsiveness, Assurance, Tangibility and Empathy (Parasuraman et al. 1985). Further, Parasuraman et al. (1988) suggested the 10 dimensions of SERVQUAL: Reliability, Responsiveness, Tangibility, Credibility, Competence, Access, Courtesy, Security, Communication and Understanding the customer. However, in this study,

the entire idea only focuses on three dimensions of SERVQUAL: Responsiveness, Reliability and Assurance to measure the predilection selection of courier service in Malaysia. The nexus between these dimensions is discussed in the following sub-section. The section starts with connection of each construct and ends with the formulation of hypotheses and sub-hypotheses.

2.2 The Nexus Between Responsiveness and Courier Service Selection

Commonly, the success or failure of service organizations depends on what the organizations understand their targeted customers need and satisfaction via provided service performance (Banomyong and Supatn 2011). Service performances not only limited to, providing a prompt service to the customer, but also takes into account activities of after sales services, example; obtaining feedback from customer or call them to survey their satisfaction level. In the case of courier service industry, high level of customer's satisfaction in smooth courier service operation without a doubt will increase their potential co-creation of customers and repeating customers to that particular organization (Ejdys and Gulc 2020; Nyaga 2017). Prior to that, Jun et al. (2004) relate customer satisfaction with pre-purchase of the product or service.

Besides that, Nelson et al. (2012) also connected responsiveness from service providers to the performance, smoothness which also depends on their employees' skill and knowledge. Further to this, employees' skill and knowledge also were the factors that lead to employee performance. Judging these arguments, the present study believes the responsiveness of courier service business may increase the possibility of prior consumers to reselect the same company in their forthcoming cybershopping. Therefore, this study concluded the first hypothesis can be formulated as follows:

H1: There is a significant and positive relationship between responsiveness and courier service selection.

2.3 The Nexus Between Reliability and Courier Service Selection

Reliability of service providers can be defined as the capability to perform and fulfil the promised services in several situations such as reliable, appropriate, and accurate way, also realize expectation of customer, including offering services within on reasonable time or manage to satisfy customer as promised without fault (Parasuraman et al. 1988). The reliability guarantee viewpoint of the service sector should be connected to the trust given by the customers. The trust to the service organizations also aiming to maintain and develop a positive relationship between receiver and provider (Sekhon et al. 2013; Park et al. 2014).

Likewise, the reliability in customer perspective also involves a crisis management, which well-defined as a procedure put to work by organizations to cater any catastrophic event related to offered services. Additionally, these crises give negative impacts on business operations disruption, harmful to people, jeopardize organizational reputation, and negatively impacts on financial stability (Jonas 2021). Similarly, the reliability of service organizations such as courier service firms in managing the logistics issues at present gets serious attention since the customer can be a victim of issues of delivery delays, severe conditions of the goods received and many other unpredictable crises at any time (Chakir et al. 2020). Accordingly, this current study predicts the reliability of the courier service firm which can influence the potential of previous customer reselection on similar firm during online purchase. Thus, the second hypothesis for this study can be written as below:

H2: There is a significant and positive relationship between reliability and courier service selection.

2.4 The Nexus Between Assurance and Courier Service Selection

Service assurance also known as quality guarantee or service guarantee which covers the meaning of product warranty extension in benefit to reduce customer perceived risk (Liu and Xie 2013). Prior to that, Hart (1988) mentioned that service assurance has been treated as a key to success, which not only constrained to improving the process of service recovery, but also providing data on service failures, setting performance standard, developing measures for customer satisfaction as well as increasing the employee performance.

The positive connection between service quality and the assurance of service quality does truly exist, which may lead to the determinant of courier service selection as found by many prior studies (see Da and Han 2018; Hays and Hill 2001; Wirtz 1998). Similarly, the empirical study by Hays and Hill (2001) verified that there was a relationship among service assurance, service quality, customer satisfaction and customer loyalty. Besides that, Yee and Daud (2011) demonstrated that quality assurance gave positive impact to customer satisfaction, linked with the knowledge, employee's courteousness and the ability to stimulate confidence and trust in customers. Further, Ho et al. (2012) mentioned that assurance of quality in term of trustworthiness and the quality of information can lead to overall customer satisfaction which would assist customers in making better decisions. Additionally, Micu et al. (2013) studied the implications of logistics service quality from the perspective of customers who shops online. They highlighted two dimensions for considering a provider as good service quality was stated as the relational service quality and the operational service quality. Since then, this research aims to determine the possibility of service quality assurance which can lead to selection of courier service during online shopping. Hence, this study articulated the third hypothesis as listed below:

H3: There is a significant and positive relationship between assurance and courier service selection.

3 Methodology

This study aimed to employ a quantitative approach in data methods considered the most appropriate means to determine the relationship among variables in line with the positivism of research philosophy (e.g., Polit and Beck 2014; Steen and Roberts 2011). In the process of research instrument development, all information such as literature review, conceptual framework, items and measurements were gathered from secondary sources, including books, journal articles, conference papers, newspaper excerpts, official website and so on. Afterwards, primary data were collected by using self-administered questionnaire. The questionnaire was thoroughly constructed and modified from various prior studies and comprehensively reviewed several times to reduce data bias. Furthermore, this questionnaire was prepared in dual languages: Malay and English version to meet the research scope.

To test the hypotheses and ensure validity and reliability of the measurement, this study employed the items adopted in literature and revised them according to the objectives of the present study. The dependent variable was a courier service selection during cybershopping. The selection was based on the level of customer satisfaction towards the existing courier service which represented by five items adapted from Anwar and Abd Zebari (2015), Bayad Jamal Ali et al. (2021), Pakurár et al. (2019) and Ji-Feng et al. (2005). On the other hand, the independent variables were SERVQUAL dimensions as discussed previously: Responsiveness, Reliability and Assurance. Each construct was represented by five items modified from many prior studies such as Banomyong and Supatn (2011), Jonas (2021), Liu and Xie (2013), Pakurár et al. (2019), Ramya et al. (2019) and Bayad Jamal Ali et al. (2021). All items were subjectively measured using a five-point of Likert scale as followed by many prior works in the management field. As suggested by Gonzalez-Benito and Gonzalez-Benito (2005), the use of subjective measurement facilitates in analysing the complexity of dimensions in management studies.

The questionnaire was conveniently distributed via Google Form online platform, as a substitute for hardcopy version and face-to-face survey in-line with the pandemic Covid-19 SOP adherence. The sampling techniques were most suitable during this unprecedented situation since it designated based on convenience and willingness of respondents to participate during their available time. Accordingly, the target sample in this study was individuals who have courier service experience usage in their cybershopping. Besides that, no specific guideline for the sample size was employed since this study focuses on non-probability sampling. Initially, this study received 388 responds after two months of questionnaire distribution. However, only 346 questionnaires deemed useable during the screening process. The sample size was considered adequate enough in accordance with the rule of thumb of sample size between 30 and 500 was acceptable for most research (Roscoe 1975). Equally,

Sekaran and Bougie (2013) stated that 500 samples were the appropriate upper limit for a sample size. Ultimately, 346 cross sectional data was acceptable for further analysis of descriptive, validity, reliability, normality, and regression via IBM SPSS Statistics software. The details of the main findings and discussion was elucidated in the consequent section.

4 Finding and Discussion

This section depicts the empirical findings obtained from the collected data of the study. A set of data collected was anticipated to describe the samples' demographic background and assess the preliminary information that may affect the research findings. It starts with a summary of the respondents' profile and a descriptive analysis of the variables. After that, the assessment of reliability, validity, and normality were conducted before testing the formulated hypotheses. This part ends with all preliminary formulated hypotheses tested using multiple linear regression analysis in order to meet all objectives of the study.

4.1 Descriptive Analysis

The data were composed of 346 Malaysian respondents. Table 1 summaries the overall frequency of the sample in this study. Male and female sample were 45.7 and 54.3% respectively. Undoubtedly, this shows that the majority of online shoppers were female where over half of respondents (55.2%) were aged between 21 to 30 years old. Judging by the average age of the sample, it soundly represents the target group of generations Y and Z similar in prior research (e.g., Hill and Lee 2012; Koch et al. 2020). As a reminder, this study only considered the respondents aged 18 years and above due to their significant part played as a key role in the nation (Lai Ming et al. 2012). Similarly, their generation was conserved as an imperious indicator of the state and countries (Griffin 1993).

Moreover, in terms of employment status, 74% of respondents were working adults, while the remaining 20.8% were students and 5.2% were unemployed. Probably, the cybershopping habit can be highly related to employment status, so, the majority of samples earned at least 235 USD income per month. Likewise, the majority of them also portrays their cybershopping behaviour which influences the frequency of courier service usage. It displays that the majority of them used a courier service at least once per month, with some reported to use courier service more than once a week. Overall, this study found that demographic factors such as gender, average age, employment status and monthly income influence the cybershopping behaviour which directly linked to the regular usage of courier service aligned with former works such as Che Nawi et al. (2019), Richa (2012) and Hashim et al. (2009).

Table 1 Summary of sociodemographic profiles

Socio-demographic features		Frequency (<i>n</i> = 346)	Percentage (100.0%)
Gender	Male	158	45.7
	Female	188	54.3
Age	18–20 years old	35	9.5
	21–30 years old	193	55.2
	31–40 years old	77	22.3
	≥41 years old	45	13.0
Employment status	Employed	256	74.0
	Unemployed	18	5.2
	Student	72	20.8
≈ Monthly income	<235 USD	90	26.0
	235–470 USD	129	37.3
	471–708 USD	50	14.5
	709–945 USD	54	15.6
	>945 USD	23	6.6
Frequency of courier service usage	Once a week	23	6.6
	More than once a week	118	34.1
	Once a month	146	42.2
	More than once a month	59	17.1

Notes: 1) ≈means approximately; 2) conversion rate of 1USD = RM4.23 as at 12 August 2021. Source: Developed by authors based on the sample output from this study

In order to give an initial picture of the data collected, this study presents descriptive statistics on main variables. The mean and standard deviation of the main variables for the research were calculated and described as in Table 2.

In descriptive analysis, the measurement of all variables which ranged from 1 to 2 was regarded as low, 3 as moderate and 4 to 5 measured as high. Based on Table 2, the mean values for courier service selection, responsiveness, reliability, and assurance were ranged from 3.81 to 4.17 with a standard deviation (SD) of 0.407 to 0.549. Judging from the range of mean values, all constructs demonstrated close to value 4.00 brings the meaning of the comparatively high scale. Thus, the

Table 2 Descriptive analysis of the model

Variables	Mean	Standard deviation (<i>SD</i>)
Courier service selection	4.170	0.407
Responsiveness	3.860	0.522
Reliability	3.809	0.549
Assurance	3.905	0.538

Source: Developed by authors based on the sample output from this study

research concluded that the majority of the respondents agreed that the inclination for them to select a courier service during cybershopping activities was due to high of responsiveness, reliability, and assurance by courier service providers.

4.2 Reliability, Validity, and Normality Analysis

This section tested the reliability, validity, and normality analysis based on the study data. The required information has been recorded as in Table 3. This table was adapted from IBM SPSS Statistics output from 346 samples.

Initially, the study needed to consider the validity and reliability of all the constructs and items in the model before preceding to regression analysis (see Montoya-Weiss and Calantone 1994). As clearly depicted in Table 3, Cronbach’s Alpha values for courier service selection, responsiveness, reliability and assurance were 0.79, 0.83, 0.85, and 0.85 respectively. Judging from the Cronbach’s Alpha values which were above than 0.70, reliability and validity for all constructs had been verified by the study. The value indicates the method and technique were well-measured by the study. Moreover, this value shows the reliability and validity was consistent and accurate. Further, Bougie and Sekaran (2019) recommended that the Cronbach’s Alpha value near to 1 also describes the greater internal consistency.

In addition to validity and reliability analysis, this research also employs the analysis of data distribution normality. Table 3 represents the main items in determining the normality of the data collected which were; skewness and kurtosis. Judging from skewness values of the model, it depicts all variables in this current study have satisfied the value of -1.0 to $+1.0$. Besides that, the values for asymmetry and kurtosis for this model also ranged between -2.0 and $+2.0$ which were considered adequate in order to demonstrate a normal distribution of the model (see Cohen et al. 2002; George and Mallery 2010). Thus, judging from the assessment of reliability, validity and normality, the model for this study was confirmed as a sufficient fit to proceed with regression analysis. Thus, the subsequent section has presented the findings of hypothesis testing and overall results discussion for this study.

Table 3 Validity, reliability, and normality analysis of the model

Construct	Cronbach’s alpha (α)	Skewness	Kurtosis
Courier service selection	0.785	-0.134	1.325
Responsiveness	0.834	-0.006	0.781
Reliability	0.852	-0.052	0.347
Assurance	0.846	-0.077	0.012

Source: Developed by authors based on the sample output from this study

Table 4 Multiple Linear Regression summary

$R(R^2)$	Hypothesis	Standardized beta	Standardized error	t -value	Decision
0.700 (0.491)	H1	2.041	0.128	15.913***	Significance
	H2	0.177	0.052	3.395***	Significance
	H3	0.378	0.048	7.818***	Significance

Notes: 1) Dependent variable (DV) is Courier Service Selection; 2) *** significance level at 0.001 (p-value). Source: Developed by researchers based on the sample output from this study

4.3 Multiple Linear Regression Analysis

This section describes the overall result of multiple regression summary as in Table 4. Regression analysis is statistical methods set designed for the relationship's estimation between a dependent variable and one (simple linear regression) or more independent variables (multiple linear regression). Likewise, this analysis can be applied to evaluate the strength of the relationship between variables as well as forecasting the future relationship between them (Bougie and Sekaran 2019).

According to Table 4, the result shows the regression model to have a coefficient determination (R^2) value of 0.491. This indicates that 49.1% of variance in the courier service selection significantly explained by the predictors: responsiveness, reliability and assurance. Meanwhile, the remaining were explained by other factors. Based on hypothesis testing, Table 4 clearly confirms that all formulated hypotheses: **H1**, **H2** and **H3** were supported by the current study. Precisely, this study verifies H1 where responsiveness has a significantly positive link to courier service selection ($\beta = 2.04$, $p < 0.001$). Consequently, the regression weight for responsiveness in the prediction of courier service selection was significantly different from zero at the 0.001 level (one-tailed). Equally, this research supported H2 where there was a significant and positive relationship between reliability and courier service selection during cybershopping ($\beta = 0.177$, $p < 0.001$). This means the regression weight for reliability in the prediction of courier service selection was significantly different at the 0.001 level (one-tailed). Similar to H3, the current study confirms assurance has a significantly positive nexus to courier service selection at $\beta = 0.378$, $p < 0.001$. Thus, the regression weight for reliability in the prediction of courier service selection was significantly different at the 0.001 level (one-tailed).

The aim of this research was to identify the predilection of courier service selection during cybershopping activities in Malaysian context. Selection of good courier service was vitally important to smoothen the supply chain operation for daily business (Valaei 2016). In case the courier service runs smoothly without any failure, the customer's satisfaction level will increase without any doubt which may create loyalty among them, towards the specific courier service in the future (Jun et al. 2004). The findings showed that responsiveness, reliability and assurance of service providers directly influence the courier service selection. Undeniable, responsiveness from courier service providers such as the willingness to assist customers and offer prompt service, increase the possibility of customers to return in the same company. Likewise,

assurance from service providers, including knowledge of employee, politeness and the capability of the companies and its employees to stimulate trust and assurance in their customers also plays important inclination of courier service selection among customers. As mentioned by Da and Han (2018), service guarantee was one of the major approaches to improve service quality that influences the customer's decision to purchase services such as courier service. Similarly, reliability of service widely means the businesses' promises about delivery, service requirements, as well resolves problem including pricing matters. Thus, logistics management crisis including being a victim, example; delivery delay or bad condition of goods received also noted as proclivity factors for customer satisfaction and loyalty (Chakir et al. 2020).

5 Conclusion and Future Works

In order to sustain a good quality service and develop a well-integrated system in the courier service industry, it is important to evaluate the concept of quality service from a customer perspective. The SERVQUAL model is commonly employed to evaluate customer satisfaction, including the studies related to the courier service industry. The courier service has recently become an important link in the logistics sector for many purposes such as trading, manufacturing, service company, and delivery goods from seller to buyer. The courier service quality is the reason for the selection of delivery of goods due to the reliability of the service provider. Subsequently, this current study highlights the aspects of responsiveness, reliability and assurance of service providers as the predilection of courier service selection during cybershopping in Malaysia. In the accomplishment of the study, the authors appreciated that the nature of the study may increase the level of knowledge about the inclination of courier service selection during cybershopping in the context of Malaysian society as well as consolidate the theory of SERVQUAL.

This study, however, was limited to several parts. First, this study limited to the concept of SERVQUAL itself. It only focuses on three of the dimensions which was responsiveness, reliability and assurance, whereas SERVQUAL dimensions can be related to tangible and empathy which can still be analysed. So, the next researchers may extend this current study through the extension of the SERVQUAL dimensions, which not only covers tangible and empathy dimensions, but also added access, financial aspect and employee competences as suggested by Pakurár et al. (2019).

Secondly, the non-probability sampling technique for this study was the convenience sampling technique. This was an indication that the generalizability of the findings was a potential limitation of this current study. The authors propose that future researchers employ probability sampling techniques and obtain the sampling frame where the target respondents can focus on courier service industry rather than selecting any available respondents. Specifically, the researchers suggest future studies to test and validate the model using samples from courier service companies, courier service employers, or courier service employees involved directly in the day-to-day activities.

Last but not least, this study enjoys the benefits of cross-sectional data using a quantitative approach, which may limit the current findings. Forthcoming studies can employ a qualitative approach via in-depth interview data to explore the relationships among the constructs. As mentioned by Bachman (1998) and Denzin and Lincoln (2011), qualitative research results not only offer the association of information processing with performance precisely and intensely, but also can achieve deeper insights into issues connected to research methods, epistemological viewpoints, and interpretive techniques of understanding human experiences.

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Exploring Aggravating Factors Towards Digital Wallet Acceptance: An Approach from Online Shoppers



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Abstract In recent years, the world has experienced the transformation of the technology and the era of globalization or even brought about numerous tools that extremely important today. Through the incentive of RM30 that had been announced by the government spur towards awareness to use e-payment in daily transaction. This study aims to examine main aggravating factors towards digital wallet acceptance among online shoppers in Malaysia by consolidating the TAM model. The quantitative research was completed through questionnaires distributed to collect data. At random 270 respondents were selected. The data collected was analysed by using the Statistical Packages for Social Science Version 26 (SPSS Version 26) software based on the descriptive analysis, reliability analysis, and correlation analysis. The findings revealed that perceived usefulness, perceived ease of use and security have significant relationships towards the dependent variable (acceptance of digital wallet). This research offers significant insight for regulators to put much effort in introducing this new mechanism and promoting its benefit as well as enlarging the sustenance network.

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Keywords Digital wallet · e-Wallet · Electronic payment · Perceived usefulness · Perceived ease of use · Security · Acceptance

1 Introduction

The evolution of 4.0 rapidly contributes to the evolving creation of smart technology that transformed the landscape of all sectors including the financial sector (Abdullah et al. 2020). It has been empowered people to use the digital and electronic payment (e-payment) which led to the popularity of cashless payment methods in the near future (OECD 2012; Cocosila and Trabelsi 2016). According to Teoh Teng Tenk et al. (2020), the most common cashless methods that have been adopted in Malaysia were credit card, debit card, internet banking and cheques as well to pay all the bills, online shopping, buying movie tickets, booking tickets and much more. Parallel towards the emergence of e-Commerce phenomenon in recent years were smart phone users across the world (Yang et al. 2021), the first digital wallet or known as e-Wallet payment method so called MaybankPay was launched by Maybank Group President on July 21, 2016. In the following year, in 2017 digital wallet become a well-known topic of discussion when the former Prime Minister of Malaysia and Executive Chairman of Alibaba Group launched the Digital Free Trade Zone (DTFZ) (Malaysia Digital Economy Corporation 2017).

Tiwari et al. (2019) denotes that digital wallet also known as e-wallet, refers to an electronic device that enables users to conduct electronic transactions where one can keep money safely. In recent years, it appears to become more vibrant and one of the new trends that has been introduced and practiced among consumers in Malaysia with the introductions of numerous applications by merchants, including.

WeChat Pay, Maybank QR Pay, Boost, Touch'n Go e-Wallet, Grab Pay, BigPay, Faveway, RazerPay and many more (Oh 2018; Abdullah et al. 2020). Operating via digital wallet or e-wallet provides a lot of benefit, namely safe to use, keep money digitally in the e-wallet which can be utilized at any time easily as well as performing various banking transactions (Abdullah et al. 2020; Tiwari et al. 2019; Upadhayaya 2012).

Since its early implementation according to The News Strait Times, Francis Dass (April 27, 2017) all Malaysians were having the intention to adopt the digital wallet as an alternative to replace the physical cash and cards. Likewise, the awareness level of cashless payment among Malaysians were recorded to be approximately 83%, while 34% of them were using Mobile Payment Services. Customers can easily make any payment from the digital wallet due to the connectivity between products and money transfers. In addition, digital wallet also improves customer loyalty as the shopping process becomes even more relevant and simpler for them. The evolution of the traditional payment method by means of physical currency to electronic payment have become the world's leading agenda for cost saving purposes in order to provide a safe, expedient and the finest service to customers (Tee and Ong 2016; Akinola 2012). In an effort to inculcate and stimulate the usage of digital wallet among

Malaysian, the incentive of eBelia RM150 as part of Malaysian Government Budget 2021 has been introduced. Nevertheless, previous studies have found that the level of acceptance of digital wallet was still at infancy stage and relatively low (Mei 2019; Meiking 2019) while the main factors that influence the acceptance of e-Wallet in Malaysia have remained unclear (Abdullah et al. 2020). Hence, this study aims to examine aggravating factors towards the digital wallet or e-wallet acceptance among online shoppers in Malaysia.

2 Literature Review

2.1 Digital Wallet

Digital wallet, which also termed as e-wallet is an acronym for the electronic wallet that refers to a payment system technology in the digital environment from the physical wallet system (Abdullah et al. 2020; Karim et al. 2020). It's a form of an electronic transaction via the utilization of numerous methods such as debit cards, credit cards, loyalty cards, internet banking, and several other payment platforms (Yang et al. 2021; Oh 2018; Shingari 2018; Kalyani 2016; Upadhayaya 2012). Throughout the digital wallet system, prior studies highlighted that digital wallet or e-wallet provides the user with abundant of benefits for instance, convenient smart card which eliminates the need of several card usage (Abdullah et al. 2020), usefulness (Salah Uddin et al. 2014; Taheam et al. 2017; Meiking 2019), enhance security features which equipped with identifications that are not available in regular wallet (Meiking 2019), speed, ease of use, and time- saving (Singh and Rana 2017) which ascribed user towards all-in-one as well as all of the functions mobility features as well as allow user to make electronic commerce transactions promptly (Tee and Ong 2016).

2.2 Aggravating Factors Towards Digital Wallet Acceptance

2.2.1 Perceived Usefulness

Perceived usefulness according to Davis (1989) is a form of external motivation and encouragement that denotes the potential acceptance, to use a certain system that gives benefits and improve job performance for a particular user (Lwoga and Lwoga 2017). Essentially, it is likely a user's cognitive expectation to embrace such a system for job enhancement resulted from the effective system performance that fulfill user's financial and increase efficiency in various transactions conducted (Yang et al. 2021). Furthermore, it has been proven that perceived usefulness displays a positive relationship towards the acceptance of using e-payment (Intarot 2018; Liu and Tai 2016). Hence, the following hypothesis was proposed:

H1: Perceived usefulness has a significant relationship towards the acceptance of digital wallet among online shoppers.

2.2.2 Perceived Ease of use

The term perceived ease of use, according to Davis (1989) signifies “the extent to which using a particular system will be free from effort”. Prior studies by (Venkatesh et al. 2003; Eze et al. 2011; Jackson et al. 1997), described that the behavioral intention and acceptance to use particular technology was positively and significantly influenced by perceived ease of use. Similarly, Chawla and Joshi (2020) also denoted that Perceived ease of use as a major determinant of a user attitude towards the intention to accept and use a technology. Hamid et al. (2016) also revealed that the digital wallet or e-wallet was experiencing ease of use among many customers and users. Thus, reflects to the users to accept and use those technology to purchase online. Hence, the following hypothesis was proposed:

H2: Perceived ease of use has a significant relationship towards the acceptance of digital wallet among online shoppers.

2.2.3 Security

Security according to Cliquet et al. (2015) described as an individual’s ability to personally monitor self-relevant information. It is a vital feature that everyone is aware of when utilizing a particular system. Based on the study of by (Soodan and Rana 2020), one of the factors that affect the use of digital wallet or e-wallet was the privacy and security which was found to be more suggestive. Lack of security and privacy was one of the factors that influencing the users or customers away from purchasing goods unless it was protected (Milberg et al. 2000). The transactions through the digital wallet or e-wallet system without a security feature may lead to unauthorized access of personal information and a lucrative opportunity for cyber-criminals to breach the data (Kaur et al. 2018). Hence, the following hypothesis was proposed (Fig. 1):

H3: Security has a significant relationship towards the acceptance of digital wallet among online shoppers.

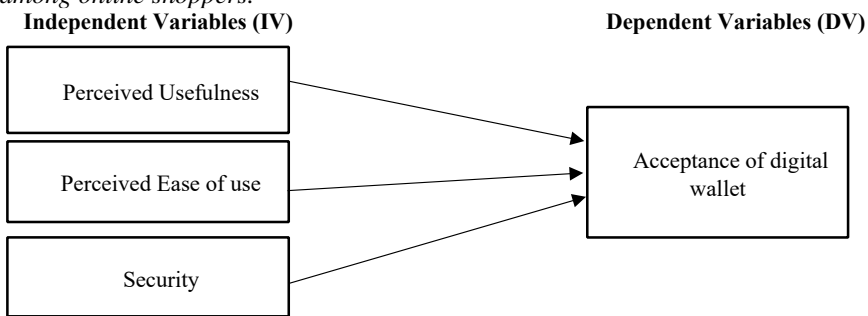


Fig. 1 Research framework

3 Research Methodology

In this study, a set of questionnaires which have been distributed through the Google form was used for data collection. The targeted respondents were online shoppers in Malaysia. The questionnaires disseminated to online shoppers in Malaysia who had actively used the digital wallet or e-wallet to perform any transactions. As a result, only 270 responses to the questionnaire were eligible for statistical analysis. The data collected was analysed by using the Statistical Packages for Social Science Version 26 (SPSS Version 26) software based on the descriptive analysis, reliability analysis, and correlation analysis.

4 Result and Data Analysis

4.1 Demographic Characteristics

The demographic characteristics consist of gender, race, age, and monthly income. Table 1 shows that 92 out of 270 respondents were male, which represented 34 percent, while another 178 respondents were female representing 65.9 percent. In addition, most of the respondents were aged 20–30 years old (82.1%), followed by those aged 31–40 years old (15.3%) while respondent aged 41–50 years (2.6%), which consist of Malays (89.2%), Chinese (6.3%) and Indians (4.5%). The highest percentage of the respondents who had a monthly income less than RM 1000 was

Table 1 Respondents' demographic information

Demographic	Frequency	%
Gender		
Male	92	34.3
Female	178	65.7
Age		
20–30 years old	220	81.2
31–40 years old	41	15.3
41–50 years old	7	2.6
Race		
Malay	239	89.2
Chinese	17	6.3
Indian	12	4.5
Monthly income		
Less than RM 1000	144	53.7
RM 1000-RM 1999	66	24.6
RM 2000-RM 2999	39	14.6
RM 3000-RM 3999	9	3.4
RM 4000 and above	10	3.7

53.7%. Next, 24.6% of them were found to be in the monthly income range of RM 1000–RM 1999. Meanwhile, 14.6% of respondents were having an income range of RM2000–RM 2999 and 3.4% respondents in the monthly income range of RM 3000–RM3999. While the remaining, 3.7% of respondents had a monthly income of RM4000 and above.

4.2 Reliability and Validity

The mean for perceived usefulness was 4.81, $SD = 0.390$ which indicates that the user believes the payment transaction would be difficult to perform without a digital wallet system. By using the digital wallet system, it would enhance the effectiveness of the payment process (mean = 4.52, $SD = 0.504$). Despite, it was believed that digital wallet systems would save time, preferably in terms of transaction process (mean = 4.63, $SD = 0.483$), also found that the via digital wallet, it's easier to buy products or services (mean = 4.63, $SD = 0.490$) as well as useful to pay bills, make transactions, shopping, and others (mean = 4.62, $SD = 0.495$) (Table 2).

In the meantime, the mean for perceived ease of use (mean = 4.58, $SD = 0.502$) where respondents believe that digital wallet was easy to use everywhere at any time (mean = 4.61, $SD = 0.488$). They intend to use the digital wallet platform because they see the benefits of it (mean = 4.60, $SD = 0.491$). Respondents also can easily apply the digital wallet on every transaction for the first time they try to use it (mean = 4.59, $SD = 0.500$). Meanwhile, if possible, they intend to increase their usage of the digital wallet platform system (mean = 4.63, $SD = 0.485$). A study by Venkatesh et al. (2003) reveals that perceived ease of use and behavioral intention to use was positively and significantly associated.

In term of “Security”, the respondents tend to have sense of secure feel whenever using the credit/debit card information through a digital wallet platform system (mean = 4.65, $SD = 0.479$). Respondents also believed their personal information was secure when using digital wallet platform system (mean = 4.61, $SD = 0.488$). Next, respondents believed that by using digital wallet or e-wallet platform for any financial transaction was secure (mean = 4.84, $SD = 0.368$). While respondents believe that security features affect their decision to use the digital wallet platform system (mean = 4.50, $SD = 0.501$) and when using digital wallet platform, their private information was unlikely to be used for other purposes (mean = 4.59, $SD = 0.508$). Based on the study of (Soodan and Rana 2020), one of the factors that affect the use of digital wallet was the privacy and security which was found to be more suggestive in acceptance of e-wallet.

Meanwhile, in terms of the dependent variable, the respondents agreed that digital wallet can substitute the cash based on payment method (mean = 4.68, $SD = 0.469$). Similarly, respondents agreed that using digital wallet was indeed a good idea (mean = 4.68, $SD = 0.466$) and respondents agreed that digital wallet can support the existing payment method (mean = 4.61, $SD = 0.488$). Lastly, respondents believed

Table 2 Mean, standard deviation (SD) of items and variables (n = 270)

Variable	Statement	Mean	SD
Perceived usefulness	I believe payment transaction would be difficult to perform without digital wallet/e-wallet payment system	4.81	0.390
	I believe using digital wallet/e-wallet payment system enhance the effectiveness of the payment process	4.52	0.508
	I believe using digital wallet/e-wallet platform system saves me time, especially in transaction process	4.63	0.483
	I found using digital wallet/e-wallet makes it easier to buy products or services	4.63	0.490
	I found using digital wallet/e-wallet is useful in pay bills, shopping, online shopping, and others	4.62	0.495
Perceived ease of use	Using digital wallet/e-wallet transaction may be used everywhere and every time	4.58	0.502
	Using digital wallet/e-wallet transaction may be used everywhere and every time	4.61	0.488
	I intend to use digital wallet/e-wallet platform system because I see the benefits of it	4.60	0.491
	I can easily apply digital wallet/e-wallet on my transaction since the first time I tried	4.59	0.500
	When using digital wallet/e-wallet platform, my private information is unlikely to be used for other purposes	4.59	0.508
Security	I feel secure when using digital wallet/e-wallet	4.65	0.479
	I believe by using the digital wallet/e-wallet my personal information will be secured	4.61	0.488
	I believe the digital wallet/e-wallet platform for any financial transaction is secure	4.84	0.368
	I believe the security features of digital wallet/e-wallet platform affect my decision to use	4.50	0.501
	I believe when using digital wallet platform, my private information unlikely to be used for other purposes	4.59	0.508

(continued)

Table 2 (continued)

Variable	Statement	Mean	SD
Acceptance of digital wallet	Digital wallet/e-wallet can substitute the cash based on payment method	4.08	0.469
	Using digital wallet/e-wallet is a good idea	4.68	0.466
	Digital wallet/e-wallet can support the existing payment method	4.61	0.488
	Using digital wallet/e-wallet is interesting	4.69	0.462

Table 3 Reliability test for all variables

Variables	Number of items	Cronbach alpha
Usefulness of E-wallet	5	0.687
Ease of use	5	0.723
Security	5	0.705
Acceptance of E-Wallet	4	0.685

using digital wallet or e-wallet was quite interesting (mean = 4.69, SD = 0.462) (Table 3).

Based on the above Cronbach alpha outcome, all the items in this study were accurate because all values ranged from 0.685 to 0.723. Researchers have conducted a reliability test distributing 19 questionnaire questions to 270 respondents among online shoppers in Malaysia. Based on the outcome, all variables include usefulness of e-wallet, ease of use, security and acceptance of e-wallet variables has moderate to use because the Cronbach’s Alpha value at range $0.7 > \alpha \geq 0.6$ where the values are 0.685, 0.687, 0.705 and 0.685 respectively.

4.3 Pearson Correlation Analysis

Correlation analysis was used to explain the strength of the linear relationship between both variables. The outcome of the correlation study of factors that contributes to the acceptance of digital wallet or e-wallet among online shoppers.

The result in Table 4 indicates that usefulness of digital wallet and acceptance of digital wallet. The figure 0.759 indicates a high linear relationship. This was followed by the ease of use and acceptance of digital wallet, which showed a value of 0.789 indicating high linear relationships. Meanwhile, security and acceptance of digital wallet had a value of 0.658, indicating a moderate linear relationship. All the three variables positively correlated with the acceptance of digital wallet and were significant ($p < 0.05$).

Table 4 Relationship between perceived usefulness of e-wallet, perceived ease of use and security towards the acceptance of E-wallet

		Acceptance of digital wallet
Perceived Usefulness	Person correlation	0.759
	Sig. (1-tailed)	0.000
	N	268
Perceived Ease of Use	Person correlation	0.789
	Sig. (1-tailed)	0.000
	N	268
Security	Person correlation	0.658
	Sig. (1-tailed)	0.000
	N	268

5 Discussion

This study explored the aggravating factors towards the digital wallet acceptance through the three independent variables (perceived usefulness, perceived ease of use and security). This study verified the significantly positive relationship between the independent variables and the dependent variable (digital wallet acceptance). Based on the outcome, perceived usefulness was found to have a positive relationship with the acceptance of digital wallet. The results showed that the value of the correlation coefficient was 0.759 at $p < 0.05$. This was supported by Davis et al. (1989), e-wallet consumers have perceived usefulness in their choice to adopt the payment scheme. There were a lot of the perceived usefulness of digital wallet or e-wallet among the online shoppers, in consideration that most of the e-commerce’s sites were providing new payment methods that give usefulness for them to make a payment for example like Shopee Pay instead of choosing another method of payment. In addition, in terms of perceived ease of use, it showed a positive relationship with the acceptance of digital wallet or e-wallet where the correlation coefficient at $p < 0.05$ was 0.789. This finding was supported by a study by Venkatesh et al. (2003), which revealed that perceived ease of use and acceptance of digital wallet or e-wallet was positively, and significantly associated. Similarly, behavioral intention to use information system was predicted by perceived ease of use (Eze et al. 2011). The finding also showed that the transaction system was easy to operate and saves more time in making any transaction and also points out that it will assist in enhancing benefits, as perceived as easy to use by the users. Besides, cashless method which refers to the use of the digital wallet platform were effective and proficient due to the easiness for online shoppers to make transaction instead of drawing out and bringing the cash along with them. The results of security showed that the value of the correlation coefficient at $p < 0.05$ was 0.658. According to Marimuthu and Roseline (2020), digital wallet or e-wallet has gained its popularity due to the nature of effortless transactions, but still, lack of knowledge and awareness among people who fears to make transactions due the concern of security issues as a major factor. The users may not trust the

information system provider and they will deny making any transaction through e-payment unless the privacy and security features were involved (Gitau et al. 2014). Most of the online shoppers were still feeling insecure with the security level that were provided in the e-wallet system platform that might give impact for them to change their preferences in accepting the digital wallet or e-wallet presence.

6 Recommendation for Future Research

By looking at the current circumstances, it is crucial to test the model across various states in Malaysia with different background of lifestyle, culture and preferences. As a recommendation for future research, survey across specific regions in particular states could be implemented to provide a clearer understanding towards the acceptance of digital wallet especially those in urban areas. Thus, the results would be more representative and reliable. Another recommendation is future research could attempt to construct other variables that contributes to the customer acceptance of digital wallet or e-wallet. Other variables that may play a role in deciding consumer acceptance should also be included in addition to other variables studied such as cost, attitude, social influence, and another possible moderator. Finally, future studies may integrate the method of interviewing or generating some open-ended questions for respondents instead of respondents answering via online scaling questionnaire. Researchers can achieve high response rates through the interview process, and ambiguities can be explained, and incomplete answers can be followed up immediately. Thus, this method will reduce the confusion and bring significant results of the analysis.

7 Conclusion

In a nutshell, the result of this study showed a positive relationship among the variables of perceived usefulness, perceived ease of use and security towards digital wallet acceptance among online shoppers in Malaysia. It provides an insight to the government to put forward a plentiful initiative and develop some other plans to promote the usage of digital wallet and ensure its success in Malaysia, parallel to any other developing countries. This is due to, the usage of digital wallet in Malaysia is still at beginning stage and still lacks promotion and education. Thus, people will tend to have doubts which will hinder their acceptance as well as adoption of the digital wallet as the main payment option in their daily transactions.

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The Evaluation of the Physical Comfort Factors in a Coffee Shop from Two Generations of Age



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Abstract This study explores the physical comfort factors from two generations of Age towards the preferable coffee shop. The study will evaluate the factors that contributed to the physical components in a coffee shop and categorized them into groups of clusters. The measurement was taken from the questionnaire distributed to 121 respondents of 18 to 29 years old and 109 respondents of 30 to 49 years old compared to generations. The method applied to achieve the objective was Exploratory Factor Analysis (EFA) using SPSS 25 with Principle Component Analysis (PCA). The findings indicated common and different factors for both generations regarding physical comfort factors about a coffee shop. The constructs derived from 21 items have been clustered into four factors: Facility, Atmosphere, Layout, and Decoration. The group of 18 to 29 years old has selected the various numbers of tables and seats as their highest factor of physical comfort while the group of 30 to 49 years old has chosen the cleanliness as a priority of physical comfort factor. The common factors for both generations were Facility and Layout. This study contributes to understanding the factors of physical comfort in a coffee shop in the design industry and service marketing business.

Keywords Coffee shop · PCA · Service design

1 Introduction

Anyone can explore the idea, and more ideas can better understand what consumers need and desire, as people themselves are the target users or the prospective customers. It happened by the experiences; more experiences show the more

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perceived quality of the product. It is called human-centered design methodology. It is agreed that emotion has a connection to a product, and the feature is what engages as a first impression. Designers have similar ideas, but taking advantage of the identical concept is also called innovative. Innovation in design is linked with experiential services (Voss and Zomerdijk 2007) where argue that the central role of the customer in innovation and design, in opposition to a significant part of technology. The design field relies on much of human preferences, i.e., color, material, cost, function, and more. Human consideration may vary, but in a public space, humans will experience an identical atmosphere. In this atmosphere, although been shared, humans perceived different values. Rust and Oliver argued that the perception of service quality such as reliability is based on the customer's evaluation of the physical service factors such as design (Rust and Oliver 1994). Customer loyalty is considered an essential factor for increasing profitability and maintaining the organization's position (Haghighi and Dorosti 2012). Coffee shops are a business place and provide a space for socializing and work according to perceived services. Coffee shops are currently the most rapidly developed business globally and have become a notable trend in food service (Muhammad 2020). There are many kinds of coffee shops competing, such as franchise, themed, and independent entrepreneur, providing choices for the public in selecting the coffee shop. The prospective customer will judge the business offered from the physical surrounding considering their first impression and expectation. This study aims to determine the physical comfort factors from the two perspectives generations of age 18 to 29 years old and 30 to 49 years old respondents.

2 Methodology

The research about coffee shops delivered findings of brand equity, customer satisfaction, and brand loyalty (Susanty and Kenny 2015), hedonic and utilitarian motives (Kasnaeny et al. 2013), and impact of product quality, service quality, and contextual experience (Thomas 2012). Chou, Grossman, Gunopulus, and Kamesan stated that the vital aspect of marketing research is to understand the demographic characteristics of those who will purchase the product (Chou et al. 2000). The prospective have their imagination and intention upon specific need and satisfaction. Although there are vast marketing campaigns, the factor that leads to purchase preference is the goal. Thus, this research will contribute to understanding the grounded factors of prospective customers in selecting a coffee shop based on the physical comfort factors. The demographic survey and components preferences were developed referring to the precedents study of previous researchers. The components of the physical environment are taken from previous research as shown in Table 1:

Table 1 Literature reviews of the physical environment components

Authors	Dimension
Baker (1986)	Ambient factors Design factors (aesthetics and function) Social factors
Parasuraman et al. (1988)	Reliability Responsiveness Assurance Tangibility
Bitner (1992)	Ambient conditions Spatial layout and functionality Sign, symbol, and artifacts
Baker et al. (1994)	Ambient factors Design factors Social factors
Berman and Evans (1995)	External variable General interior variables Layout and design variables Point of purchase and decoration variables
Stevens et al. (1995)	Reliability Responsiveness Empathy Assurance Tangibles
Wakefield and Blodgett (1999)	Building design and decor Equipment Ambiance
Turley and Milliman (2000)	External variables General interior variables Layout and design variables Point of purchase and decoration variables Human variables
Brady and Cronin (2001)	Interaction quality Outcome quality Quality of the physical environment
Ryu (2005)	Facility aesthetics Layout Ambiance Service product Social factors

A Likert scale survey distributed to the prospective customers of a coffee shop through an online survey gained 121 pieces of feedback from the group of Age 18 to 29 years old and 109 pieces of feedback from the group of 30 to 49 years old. 29 constructs have been developed, and after the pre-test survey, only 21 constructs were eligible to be distributed to the samples. Table 2 shows the list of the constructs to be evaluated in PCA:

3 Results and Discussion

A demographic survey collected the data about the cumulative respondents' ideation regarding the factor of the comfortable in a coffee shop and preference about the components of physical comfort factors. The survey gained 203 pieces of feedbacks, where 121 were a group of Ages between 18 to 29 years old, and 109 were from a group of Ages between 30 to 49 years old, as shown in Table 3.

The survey distributed with introductory demographic analysis resulted in two main preferences for both groups, as shown in Table 4.

Referring to the demographic results, the group of 18–29 years old preferred to come to a coffee shop at least once a week while the group of 30–49 years old like to reach more than twice a week to a coffee shop. Both groups have shared preferences when spending money, which was less than USD 10, they like to enjoy the drinks than other delicacies, they want to dine in the coffee shop, they agreed to choose local brand than others. They preferred a delicious menu as a decision to select the coffee shop.

The Exploratory Factor Analysis (EFA) then conducted to achieve the factors contributed to the physical comfort factors from both generations' point of views. The Hierarchical Cluster shows in Fig. 1 resulted in four clusters.

The value for Bartlett's Test which is significant ($P\text{-Value} < 0.05$), and also the measure of sampling adequacy by Kaiser–Meyer–Olkin (KMO) was 0.844 for group 18–29 years old and 0.635 for group 30–49 years old as shown in Table 5 which was higher than the minimum requirement of 0.6 (Awang 2012). Both values (Bartlett Test, which was significant and $KMO > 0.6$) reflected the current data was adequate to proceed into the next step, namely the Exploratory Factor Analysis (EFA) (Awang 2012; Hoque and Awang 2016).

Another measure, namely Total Variance Explained, was significant to reflect how much the items used in the study managed to estimate the respective latent construct (Muhammad 2020). The measuring items fall into four factors, with the Total Variance Explained from this component is 78.578% for the group of Age 18–29 years old. The component score explained the contribution of the particular

Table 2 Likert scale of constructs for physical comfort factors

Items	Not at all likely					Extremely likely				
	1	2	3	4	5	6	7	8	9	10
Entrance										
Signboard										
Counter										
Waiting area										
Toilet										
Basin										
Kitchen										
Dining area										
Spacious area										
Enough table and chair										
Office										
Storeroom										
Painting										
Wallpaper										
Vase										
Window										
Floor										
Furniture										
Comfortable lighting										
Natural lighting										
Candle lighting										
Colorful lighting										
Coffee aroma										
Fragrance aroma										
Natural ventilation										
Comfortable color of wall										
The bright color of the wall										
Cleanliness										
Tidiness										
Cheerfulness										

(continued)

Table 2 (continued)

Items	Not at all likely					Extremely likely				
	1	2	3	4	5	6	7	8	9	10
Self pick-up meals at the counter										
Self pick-up services (straw, tissue, etc.) at the counter										
Smoking area provided										
Tables in variety numbers of seats										
The furniture arrangement is easily moved										
Private seating is provided										
Tables are shared among customers										
Parking area is provided										

Table 3 Frequency of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18–29	121	52.6	52.6	52.6
	30–49	109	47.4	47.4	100.0
	Total	230	100.0	100.0	

component in measuring the construct. The output showed Factor 1 contributed 26.642%, Factor 2 contributed 26.455%, Factor 3 contributed 14.525%, and factor contributed 4 10.956%. The Total Variance Explained for the construct was acceptable since it exceeded the minimum requirement of 60% (Awang 2012; Hoque and Awang 2016).

Table 4 Demographic results for both generations

No	Questionnaire	18–29 years old (121 respondents—52.6%)	30–49 years old (109 respondents—47.4%)
1	Please state your gender a. Male b. Female	36.4% 63.6%	23.9% 76.1%
2	Please state your employment status a. Students b. Unemployed c. Self-employed d. Part-time e. Fulltime	41.3% 0.9% 1.7% 3.5% 5.2%	3% 0% 4.8% 4.5% 35.2%
3	How often do you spend in a coffee shop? a. Once a year b. Once a month c. Once a week d. More than twice a week e. Everyday	0% 13.9% 22.2% 12.2% 4.3%	2.6% 10.9% 13.9% 17.8% 2.2%
4	How much do you like to spend? a. Less than USD5 b. USD 5 – USD 10 c. USD 10 – USD 99	20% 28.3% 4.3%	16.5% 22.6% 8.3%
5	The meal you like to buy? a. Breakfast b. Lunch c. Dinner d. Special edition e. Drinks f. Dessert	3% 10.4% 5.2% 4.3% 22.6% 7.0%	0.9% 12.6% 3.9% 7.4% 14.8% 7.8%
6	What is your preference about the serve? a. Dine-in b. Take away c. Delivery	26.5% 20% 6.1%	33.5% 12.2% 1.7%
7	What kind of coffee shop do you prefer to spend? a. High end b. Franchised c. Local brand d. International brand e. Old business	2.6% 17% 25.2% 5.2% 2.6%	6.5% 18.3% 18.7% 3.9% 0%

(continued)

Table 4 (continued)

No	Questionnaire	18–29 years old (121 respondents—52.6%)	30–49 years old (109 respondents—47.4%)
8	How did you decide to select the coffee shop? a. Member points redeem b. Delicious menu c. Cheap price d. Famous or viral e. Recommendation from other	0.9% 27% 18.3% 6.5% 0%	2.6% 29.1% 10.4% 3.5% 1.7%

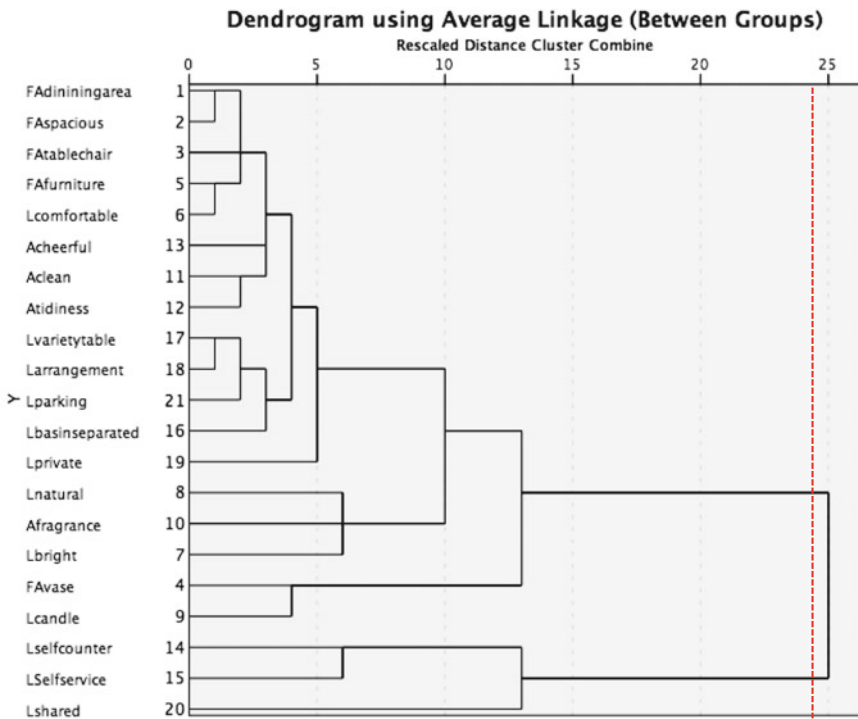


Fig. 1 From 10 clustered to 4 factors

Table 5 Results for KMO and Bartlett’s Test

No	Questionnaire	18–29 years old (121 respondents—52.6%)	30–49 years old (109 respondents—47.4%)
1	KMO and Bartlett’s Test	0.844 Sig. 0.000	0.635 Sig. 0.000
2	Varimax Rotation Total Variance Explained	78.578%	82.956%

The Principle Component Analysis (PCA) for this group showed the four factors clustered after items deleted in Table 6. The factor loading for each item indicated the importance of the respective item in measuring its construct. The minimum acceptable value of factor loading is 0.6, and the item with factor loading less than 0.6 should be removed and not used in the field study (Awang 2012; Hoque and Awang 2016).

The scree plot for group 18–29 years old shows the eigenvalues on the y-axis and the number of factors at x-axis as four factors in Fig. 2 as follows.

Table 6 PCA results for group 18–29 years old

	Component			
	1	2	3	4
Tables in a variety number of seats	0.911	0.265	0.120	0.043
The furniture arrangement can easily moved	0.876	0.266	0.135	0.041
A parking area is provided	0.861	0.294	0.106	−0.023
Basin for washing hands is provided separated from the toilet	0.835	0.170	−0.035	0.049
Private seating is provided	0.605	0.421	0.088	0.370
Cheerfulness	0.601	0.595	0.014	0.341
Comfortable lighting	0.385	0.787	0.090	0.211
Enough table and chair	0.442	0.773	−0.037	0.107
Dining area	0.471	0.739	0.004	0.343
Furniture	0.447	0.729	−0.004	0.302
Spacious area	0.389	0.718	−0.084	0.370
Natural lighting	0.188	0.686	0.504	−0.049
Cleanliness	0.627	0.679	0.026	0.128
Tidiness	0.612	0.634	0.002	0.119
Fragrance aroma	−0.124	0.630	0.515	−0.230
Self-pick up the meals at the counter	0.035	−0.073	0.851	−0.198
Self-pick up the services (straw, tissue, cup etc.) at the counter	0.125	−0.067	0.850	−0.044
Bright lighting	−0.134	0.388	0.745	0.141
Tables are shared among customers	0.174	0.011	0.676	0.261
Candle lighting	−0.036	0.122	0.041	0.851
Vase	0.169	0.226	−0.031	0.836
Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization. ^{a,b}				
a. Rotation converged in 13 iterations				
b. Only cases for which Please state your group of Age = 18–29 are used in the analysis phase				

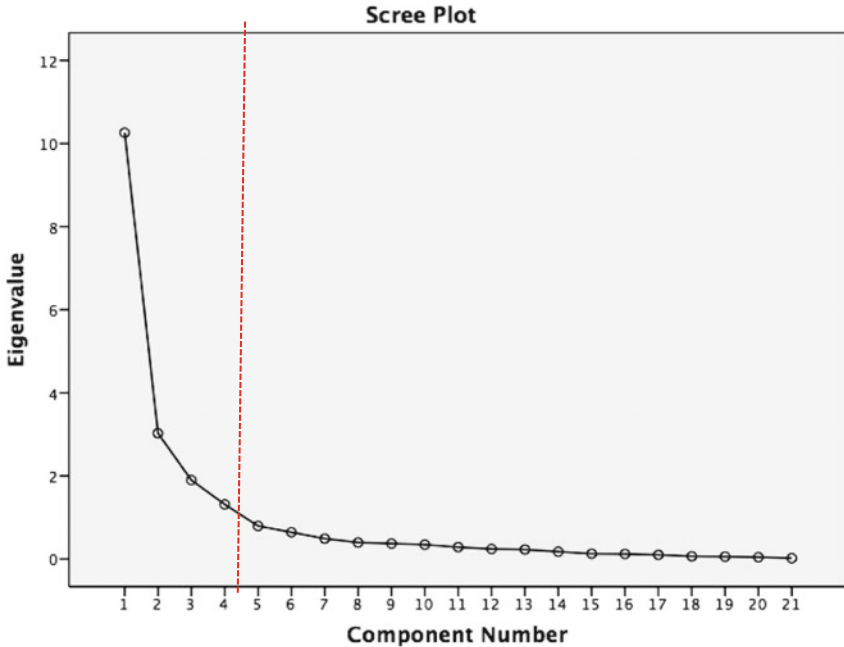


Fig. 2 Scree plot for group 18–29 years old

The results for group 30–49 years old indicated the measuring items fall into four factors, with the Total Variance Explained from this component was 82.956%. The component score explained the contribution of the particular component in measuring the construct. The output showed Factor 1 contributed 48.380%, Factor 2 contributed 13.222%; Factor 3 contributed 11.346% and Factor 4 contributed 10.007%. The result of PCA for this group indicated four clusters after item deleted, as shown in Table 7.

The scree plot for group 30–49 years old shows the eigenvalues on the y-axis and the number of factors at x-axis as four factors in Fig. 3 as follows.

The findings from both comparing generations explained that they have familiar and different preferences about the physical comfort factors in a coffee shop. The comparison of components for both groups of Age is shown in Table 8.

Table 7 PCA results for group 30–49 years old

	Component			
	1	2	3	4
Cleanliness	0.926	-0.181	0.058	-0.132
Dining area	0.924	0.075	0.076	0.181
Tables in variety number of seats	0.918	-0.036	0.108	0.131
Basin for washing hands is provided separated from the toilet	0.887	-0.144	0.039	0.042
Spacious area	0.880	0.136	0.039	0.199
The furniture arrangement can easily moved	0.865	-0.110	0.165	0.171
A parking area is provided	0.857	-0.288	0.037	-0.148
Tidiness	0.846	-0.207	0.053	-0.125
Comfortable lighting	0.846	0.095	0.178	0.161
Furniture	0.833	-0.079	0.038	0.377
Enough table and chair	0.829	0.196	0.160	0.074
Private seating is provided	0.827	-0.176	0.104	0.291
Cheerfulness	0.821	0.161	-0.084	0.177
Self-pick up the services (straw, tissue, cup etc.) at the Counter	0.062	0.914	-0.125	-0.192
Tables are shared among customers	-0.009	0.795	-0.072	-0.103
Self-pick up the meals at the counter	-0.254	0.763	0.254	-0.322
Bright lighting	0.142	0.189	0.883	-0.012
Fragrance aroma	-0.109	-0.380	0.839	-0.015
Natural lighting	0.443	0.019	0.825	0.020
Candle lighting	0.108	-0.237	-0.019	0.920
Vase	0.290	-0.405	0.009	0.798

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization.^{a,b}

a. Rotation converged in 6 iterations

b. Only cases for which Please state your group of Age = 30–49 are used in the analysis phase

There were two Factors interchanged for both generations, namely Factor 2 Atmosphere and Factor 3 Layout, as shown in Table 9 and Table 10.

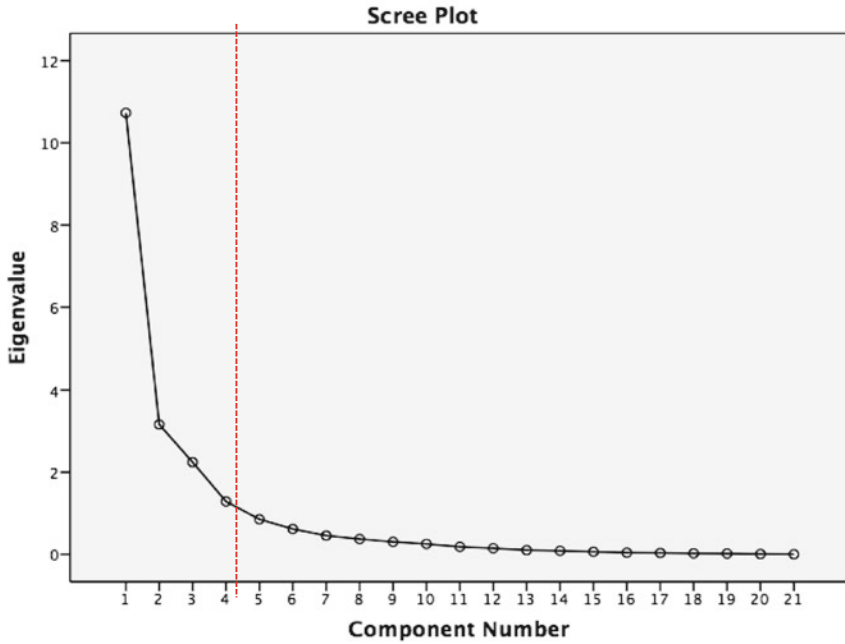


Fig. 3 Scree plot for group 30–49 years old

The preferred components by these two generations are marginally different, and therefore Hierarchical Cluster is narrowed to two main clusters as shown in Fig. 4.

The result comprised two factors, namely Facility and Layout as the leading clusters for physical comfort factors in a coffee shop for groups of Age 18–29 years old and 30–49 years old. The standard components are shown in Table 11.

Table 8 Comparison constructs factors for both generations

Factor 1		Factor 2	
18–29 years old	30–49 years old	18–29 years old	30–49 years old
<ul style="list-style-type: none"> • Tables in variety numbers • The furniture arrangement can easily be moved • A parking area is provided • Basin for washing hands is provided • Private seating is provided • Cheerfulness 	<ul style="list-style-type: none"> • Tables in variety numbers • The furniture arrangement can easily be moved • A parking area is provided • Basin for washing hands is provided • Private seating is provided • Cheerfulness • Cleanliness • Dining area • Spacious area • Tidiness • Comfortable lighting • Furniture • Enough table and chair 	<ul style="list-style-type: none"> • Comfortable lighting • Enough table and chair • Dining area • Furniture • Spacious area • Natural lighting • Cleanliness • Tidiness • Fragrance aroma 	<ul style="list-style-type: none"> • Self pick-up the services (straw, tissue, etc.) at the counter • Self pick-up meals at the counter • Tables are shared
Factor 3		Factor 4	
18–29 years old	30–49 years old	18–29 years old	30–49 years old
<ul style="list-style-type: none"> • Bright lighting Tables are shared • Self pick-up the services (straw, tissue, etc.) at the counter • Self pick-up meals at the counter 	<ul style="list-style-type: none"> • Bright lighting • Natural lighting • Fragrance aroma 	<ul style="list-style-type: none"> • Candle lighting • Vase 	<ul style="list-style-type: none"> • Candle lighting • Vase

Table 9 Physical Comfort factors for group 18–29 years old

18–29 years old	Factor 1 FACILITY	Factor 2 ATMOSPHERE
	Factor 3 LAYOUT	Factor 4 DECORATION

Table 10 Physical Comfort factors for group 30–49 years old

30–49 years old	Factor 1 FACILITY	Factor 2 LAYOUT
	Factor 3 ATMOSPHERE	Factor 4 DECORATION

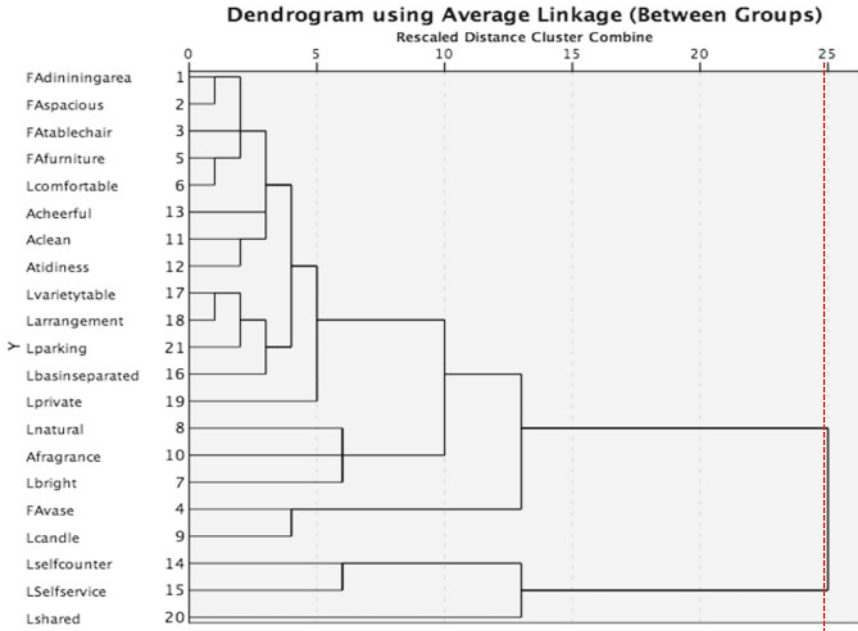


Fig. 4 Hierarchical Cluster to two clusters

Table 11 Hierarchical Cluster to two clusters

Factors	18–29 years old	30–49 years old
FACILITY	Variety table Furniture easily moved Parking Basin Private seat	
LAYOUT	Self pick-up meal at the counter Self pick-up service at the counter Table shared	

4 Conclusion

The findings indicated that the two generations had preferred different components of physical comfort factors of a coffee shop. The PCA results showed that the 18 to 29 years old preferred to spend at a coffee shop with a variety of seats and tables while the group of Age between 30 to 49 years old more consider the cleanliness of the area. The two factors, namely; Facility and Layout, indicated the physical comfort factors for a coffee shop are much influenced by the physical components such as the furniture layout, position of the counter and its function, the movable furniture that can be adjusted according to the customers’ preferences, the segregation

of private seats and also the shared table between customers. Understanding the physical comfort factors of potential customers about the coffee shop will contribute to the design and service marketing business.

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What Factors Influence the Consumers' Attitudes Towards SMS Advertising: The Case of the Palestinian Banking Sector



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Abstract The aim of this study is to investigate the factors that influence consumer attitudes toward SMS advertising in the Palestinian banking sector from the perspective of the banks' customers. To identify these influential factors, an empirical study was conducted utilizing a survey questionnaire to collect primary data. The data was obtained from 372 bank clients and analyzed using a multiple regression approach. The results identified a relationship between (entertainment, informativeness, irritation, and creditability) and consumer attitudes toward SMS advertising, implying that it is important for marketers to interact with their clients via SMS for advertising purposes. While this article builds on prior research, it also provides results that can aid academics and practitioners in their pursuit for SMS advertising success.

Keywords Consumer attitudes · Palestine · SMS advertisement · Palestinian banks

1 Introduction

The fast advancement of technology, aided by the increasing number of mobile phone owners and the creation of social media channels, has redefined new markets and niches (Rajesh et al. 2019), as well as developed new marketing channels such as SMS, E-mail, and MMS (Worku et al. 2020). The number of mobile devices on the world exceeds the number of people, and their owners are rapidly rising (Aydin and Karamehmet 2017). According to Statista (2019), the worldwide number of smartphone users is anticipated to reach 6.378 billion in 2021 and 7.516 in 2026. The explosion of information technology has also given firms with a variety of advertising options (Chowdhury et al. 2006). This led many banks to begin utilizing SMS as a marketing technique in order to improve their clients' positive attitudes toward it.

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The term “consumers’ attitudes toward various advertising” may be defined as the willingness to respond positively or negatively to a certain advertisement at a specific time (Gaber et al. 2019).

SMS is a powerful marketing tool (Bakr et al. 2019). Mobile-Cellular telephone subscriptions increased by nearly 54.1% between 2010 and 2020, with more than 8,152 million users in 2020 (International Telecommunications Union 2020). Furthermore, the use of mobile devices for advertising expanded due to the increased use of phone text messages (Komulainen et al. 2016), which created a new way of advertising that makes customers more engaged with the organizations’ products (Eshra and Bashir 2019). As a result, considering the importance of SMS advertising, figuring out the drivers and barriers to SMS advertising adoption is a major problem for marketers. Previous studies reported that SMS advertising proved to be successful as a brand vehicle as well as a stimulant for customer reactions (Varnali 2014).

The Gaza Strip and West Bank have 13 registered banks with 377 branches with 7354 employees (Palestinian Monetary Authority (PMA) 2020). SMS advertising has taken off in Western and European nations, but it is still in its early stages in the Middle East and Asia (Salem 2016). SMS marketing is one of the most efficient and effective advertising tools used by businesses, which is why all of Palestine’s banks utilize it (Anouze and Alamro 2019). According to established marketing theories such as the theory of reasoned action (TRA) (Fishbein and Ajzen 1975), the theory of planned behavior (TPB) (Ajzen et al. 1985), and the uses and gratifications theory (U&G) (Katz et al. 1974), consumers’ attitudes toward advertising influence their behavioral reactions. The technology acceptance model (TAM) (Davis 1989) was based on TRA and has recently been expanded to include new technology/medium adoption. The current study develops and tests a research model that includes TRA, TAM, U&G, and past research in SMS advertising based on the principles of these theories.

Academics and practitioners agree that SMS advertising is the best approach to target clients (Waldt et al. 2009). As a result, this study is a partial replication of Tsang et al., (Tsang et al. 2004), but in the setting of Palestine. In light of this, the purpose of our research is to investigate the relationship between the independent factors (entertainment, informativeness, irritation, and credibility) and the dependent variable (consumer attitudes toward SMS advertising) in the Palestinian banking industry. This is the first study to look at the elements that influence consumer attitudes toward SMS advertising in the banking sector in the Palestinian setting.

2 Theoretical Framework

2.1 Attitudes Towards SMS Advertising

Attitude is a hypothetical construct that creates a pattern in which people infer an individual's level of likeness or dislike for a certain issue (Obilo and Alford 2020). As a result, many academics think that attitudes are dynamic, and that a person's attitude toward the same object might vary owing to changes in internal or external circumstances (Strachan and Ip 2020). For example, consumers feel that three permission-based advertising Text messaging each day is "about appropriate", while young customers are more responsive to SMS advertising (Barwise and Strong 2002).

SMS advertising is a tiny fraction of the overall mobile advertising options, but it accounts for the majority of total digital advertising (Kushwaha and Agrawal 2016). People prefer to get updated information and offers via SMS (Qousa and Wady 2018). The popularity of SMS mobile advertising derives from the fact that it is easily accessible to customers. Besides the fact that the mobile phone is a pocket-sized portable gadget that is always with the prospective customer. Due to political constraints, SMS advertising is the most popular and easiest-to-reach mobile advertising technique in a nation like Palestine, where dealing with the new generation of broadband cellular network technology is limited (Sbeih and Hijazi 2013). However, because consumer attitude is the driving force behind consumer behavior, researchers such as Oh and Lee (2020) agree that advertising efforts are lost due to perceptual blocking and selective distortion if they do not encourage the positive attitude to shine brighter than the negative.

2.2 Factors Affecting SMS Advertising

Entertainment

The desire to satisfy an audience's demand for escape, distraction, esthetic pleasure, or emotional delight is known as entertainment (Huq et al. 2015). The advertising value of entertainment is directly proportional to the advertising value of traditional advertising (Ducoffe 1996). Entertainment has evolved into one of the most important advertising building criteria, and it is now utilized to attract customers and increase advertising effectiveness (Haider and Shakib 2018). Consumer attitudes were positively influenced by SMS advertising entertainment. The most important relationship among other elements is the favorable relationship between SMS entertainment and customer attitudes (Tsang et al. 2004). Therefore, the following hypothesis can be stated:

H1: Consumer attitudes toward SMS advertising are positively influenced by perceived entertainment.

Informativeness

Informativeness is defined as the ability to deliver information to customers by publicizing product attributes that will likely satisfy them (James et al. 2016). Advertising is used to tell consumers about new products, their features, and their costs. Informativeness may be regarded a beneficial advertising criterion since it provides consumers with helpful information (Fern et al. 2018). Therefore, SMS information should be timely, reliable, and helpful in order to encourage consumers to respond to advertising (Wei and Long 2015). Informativeness has the ability to alter recognition, attitude, satisfaction, and the outcome of resource provision. In a nutshell, people's perceptions of informativeness are based on their assessment of whether all of the information they get is valuable or not (Wang and Lan 2018). As a result, we propose the following hypothesis:

H2: Consumer attitudes toward SMS advertising are positively influenced by perceived informativeness.

Irritation

Unless they have given their agreement, most consumers have a negative attitude toward mobile advertising (Tutaj and Reijmersdal 2012). As a result, SMS advertising to potential consumers should always be preceded by their permission. Consumers may react negatively to SMS advertising if this is not done. Consumer permission might be a key aspect in determining how consumers feel about SMS advertising (Uddin et al. 2019). As a result, having an interactive 2-way SMS service allows the advertiser to build a communication channel with the target audience through SMS, where the audience is expected to reply to SMS messages in order to indicate satisfaction with the SMS marketing campaign (Qousa and Wady 2018). We hypothesize the following based on the aforementioned:

H4: Consumer attitudes toward SMS advertising are negatively influenced by perceived irritation.

Credibility

Credibility can be defined as the degree to which the customer sees accurate and believable statements made about the brand in the advertisement (Keshavarz 2020). According to Panie (Panie et al. 2014), a variety of elements influence the credibility of an advertising, particularly the reputation of the business and the advertisement carrier. Furthermore, the method by which the message is delivered often biases credibility. Email messages, for example, have little credibility unless they are communicated in printed form by a well-known brand (Haider and Shakib 2018). Consumer perceptions about SMS advertising's credibility value are shown to be significantly linked to consumer attitudes toward SMS advertising in general (Waldt et al. 2009). Consumers' attitudes about ads will be negatively affected if they do not believe the advertisements are trustworthy (James et al. 2016). As a result, we propose the following hypothesis:

H5: Consumer attitudes toward SMS advertising are positively influenced by perceived credibility.

Figure 1 depicts the study's conceptual structure (1). This model links the independent factors (entertainment, informativeness, irritation, and credibility) to the dependent variable (consumer attitudes toward SMS advertising).

3 Methodology

3.1 Participants

In total 372 respondents completed and returned the questionnaire. Figure 2 below shows that 238 of the respondents are males, while 134 are females. The majority

Fig. 1 The research framework

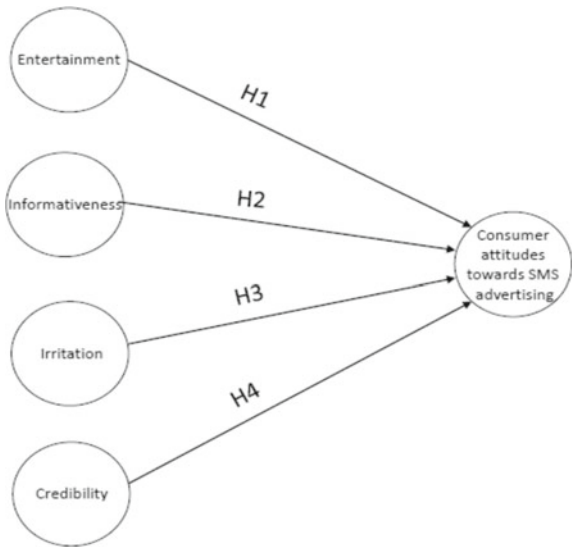
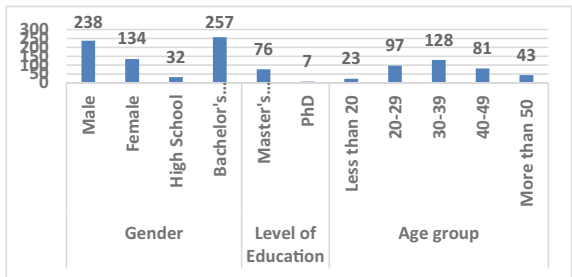


Fig. 2 Respondents' demographics



of respondents (257) hold Bachelor's degree. 248 from the respondents are below the age of 39 years.

3.2 Procedure

Respondents with a bank account in one of the banks operating in the West Bank-Palestine were approached via the researchers' social media networks, where a questionnaire was posted for three weeks. Respondents were invited to share the survey with everyone in their network who had a bank account. The questionnaire was designed specifically for this study using Google Forms to collect primary data and test hypotheses. As a result, the study's population includes anybody who has a bank account with any bank operating in the West bank -Palestine. Through the Customer Relations Departments of the banks, a link to the questionnaire was emailed to bank customers. For this study, 372 responses were received and analyzed.

3.3 Measures

A 5-point Likert scale questionnaire was used to conduct the survey (1 = strongly disagree, 2 = disagree, 3 = no opinion/neutral, 4 = agree, and 5 = strongly agree). It was divided into seven sections. The first element, which was developed in reference to Aydin and Karamehmet (2017), measures the entertainment using four items. Three items were constructed in accordance with Qousa and Wady (2018) and Salem (2016) for the second part, which dealt with informativeness. The third section looked at the level of irritation by using four items (Rajesh et al. 2019). The fourth assessed credibility by using five items derived from Salem (2016), and Zabadi et al. (2012). The fifth section, which was derived from Eshra and Bashir (2019), utilized five items to determine how people felt about SMS advertising.

4 Results

4.1 Factor Analysis

The appropriateness of factor analysis for the aim of the study was tested using KMO and Bartlett's test. The reliability results should be more than 0.7. The results of Bartlett's sphericity test should also be less than 0.05. According to the results, KMO is 0.784, which is higher than the allowed threshold of 0.000, indicating that this analysis is adequate for the research.

Table 1 Reliability and loading values of the constructs

Construct	Item	MV	SD	Factor loading	Cronbach's α
Entertainment	Q2.1	3.25	1.096	.631	.745
	Q2.2	3.32	1.013	.636	
	Q2.3	3.39	1.035	.656	
	Q2.4	3.54	.908	.642	
Informativeness	Q3.1	3.57	.980	.729	.770
	Q3.2	3.33	1.022	.694	
	Q3.3	3.75	.839	.639	
Irritation	Q4.1	2.92	1.057	.722	.746
	Q4.2	2.87	.882	.638	
	Q4.3	2.90	1.003	.825	
	Q4.4	3.02	1.058	.739	
Credibility	Q5.1	3.18	.931	.651	.730
	Q5.2	3.10	1.007	.639	
	Q5.3	3.35	1.038	.749	
	Q5.4	3.11	1.023	.691	
	Q5.5	3.40	.939	.738	
Attitude toward SMS advertising	Q6.1	3.50	.999	.720	.832
	Q6.2	3.43	1.065	.746	
	Q6.3	3.13	.963	.657	
	Q6.4	3.28	.898	.628	
	Q6.5	3.76	.843	.621	

We display one principal factor rotated using the varimax normalization to give the factor score coefficient matrix calculated by principal components analysis (Kaiser 1960), as shown in Table 1. There are 21 variables in the factor. A loading value of 0.30 is recommended as the minimal threshold for item loadings on certain scales, according to the literature (Churchill 1979). The loadings in Table 1 are all more than 0.30, suggesting that the construct validity of scales is supported. Furthermore, the results indicated that the informativeness items (MV of 3.5505) had a higher mean value than the consumer attitudes items (factor MV = 3.4231).

4.2 Hypotheses Testing

The relationship between the independent factors (entertainment, informativeness, irritation, and credibility) and the dependent variable (i.e. consumer attitudes towards SMS advertising) was determined using a multiple regression analysis. The

Table 2 Results of multiple regression analysis

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.837	191		4.390	0.000
Entertainment	0.254	048	0.263	5.347	0.000
Informativeness	0.181	039	0.193	4.680	0.000
Irritation	-0.085	0.034	-0.086	-2.513	0.012
Credibility	0.457	047	0.423	9.726	0.000

Notes: Dependent variable: consumer attitudes towards SMS advertising; adjusted R2 = 0.630, F = 156.815, and sig. = 0.000

purpose of the multiple regression analysis was to determine how SMS advertising influences customer attitudes.

As indicated in Table 2, the adjusted R2 = 0.630, implying that the independent factors (i.e. entertainment, informativeness, irritation, and credibility) account for 63 percent of the overall variation in consumer attitudes. Because the F value was significant at 0.000, the model's quality was validated. Further analysis revealed that consumer attitudes toward SMS advertising were positively related to entertainment ($t = 5.347$, $p < 0.000$), informativeness ($t = 4.680$, $p < 0.000$), and credibility ($t = 9.726$, $p < 0.000$). As a result, H1, H2, and H4 were supported by sufficient evidence. Consumer attitudes toward SMS advertising, on the other hand, were adversely associated to irritation ($t = -2.513$, $p < 0.012$). As a result, there was sufficient evidence to support H3.

5 Discussion

5.1 Discussion of Findings

The relationship between (entertainment, informativeness, irritation, and credibility) and consumer attitudes toward SMS advertising 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 entertainment has a favorable and significant impact on attitudes toward SMS advertising. Consumers will be more inclined to embrace SMS as an advertising method as a result of the exciting, fascinating, entertaining, and appealing content of SMS advertisements, which will improve their attitude toward SMS advertising. Consumers are attracted to SMS advertising that are entertaining (Wei and Long 2015). As a result, it's critical that the advertising message be succinct and humorous, and that it can grab the consumer's attention right away.

In addition, the findings identified a relationship between informativeness and attitudes toward SMS advertising. In SMS advertising, informativeness is a valuable reward (Fern et al. 2018). Informativeness can affect recognition, attitude, satisfaction, and the effect of giving resources (Wang and Lan 2018).

Also, results suggest a positive relationship between informativeness and attitudes towards SMS advertising. Informativeness is a valuable incentive in SMS advertising (Fern et al. 2018). Wang and Lan (2018) stated that informativeness is able to change recognition, attitude, satisfaction, and effect of providing resources. Therefore, the quality of information delivered by SMS advertising messages should be given greater priority.

A strong and unfavorable relationship between irritation and attitude toward SMS advertising was observed in addition to the aforementioned. Marketers' use of irritating content and frequency in SMS advertising will have a detrimental impact on consumers' attitudes toward SMS advertising. Irritation, according to several experts, has an influence on advertisement avoidance on mobile social networks (Uddin et al. 2019). Tsang et al. (2004), on the other hand, reported a negative relation between irritation and customer attitude. Consumers have a negative attitude toward SMS advertising unless it is preceded by their prior permission, and they may respond unfavorably to SMS advertising, which is consistent with the findings of Uddin et al. (2019).

Credibility has a strong positive association with attitude toward SMS advertising, according to the findings. Content that is very credible and trustworthy will result in a favorable attitude toward SMS advertising. Consumers' attitudes toward advertising would be negatively affected if they cannot determine whether or not they are credible (Waldt et al. 2009; Tsang et al. 2004).

5.2 Limitations and Further Research

Empirical findings of the study had contextual and applicability limits. The first limitation is extracted from the research's geographical location, which is West Bank -Palestine. Even if the findings are applicable to similar developing economies, they may not be necessarily relevant to regions that do not have similar cultural context like Palestine. Secondly, the research was conducted in the banking sector which limits the ability of the results to be generalized to all other sectors.

Concerning directions of further research works, the researchers suggest to re-examine the model in different contexts or cultures. In addition, the model can be expanded by using moderating variables like national culture to help in understanding the relationships and the mechanisms of the addressed topic.

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Factors Influencing Customer Revisit Intention to Mamak Restaurants in Penang



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Abstract In line with the growth of the food service industry, unlimited choices of ethnic restaurants are increasing in Malaysia and since Malaysia is a multi-cultural country, consuming cross-ethnic food is deemed a common phenomenon in the country. The most popular choice of food service establishments in Malaysia is Mamak restaurants, which have increasingly generated revenue that contributed approximately RM8 billion to Malaysia's economy. This study was undertaken to examine customer revisit intention to Mamak restaurants in Penang. Data were collected from customers who revisit the randomly selected Mamak restaurants in Penang. The respondents were given 384 questionnaires, which later recorded a 97.7% response rate, attributing to 375 usable questionnaires for data analysis. The findings showed that the three variables of food quality, service quality, and environment are the factors related to customer revisit intention. This study has provided insights into customer revisit intention to revisit Mamak restaurants in Penang, which benefits the restaurant industry to be able to practically adapt customer revisit intention and achieve competitive advantage.

Keywords Food quality · Service quality · Environment · Revisit intention · Mamak restaurants

1 Introduction

The food service industry is among the industries with the highest growth rates worldwide and it is rapidly growing in Malaysia (Euromonitor International 2019, Aziz et al. 2019; Shahzad et al. 2021). The wide variety of restaurants with varying products and concepts proves the emergence of the foodservice industry. Similarly,

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Malaysia is rapidly moving in line with the direction of food service along with the advanced and developing nations worldwide. The number of food service establishments has risen from 130,570 in 2010 to 167,490 in the year 2015 with a 5.1% annual growth rate in total (Department of Statistics Malaysia 2017). Thus, the rapid growth of the foodservice industry further leads to positive socioeconomic conditions, a shift in demographics, changes in customer food habits, and more demands from people. People are also eating out more often as lifestyle changes due to modernization and development. As a result, more new food outlets are being introduced by the local food service industry in Malaysia (Ramly et al. 2003).

Since Malaysia is a multi-cultural country, consuming cross-ethnic food is a common phenomenon in the country, and the most popular choice of foodservice establishment in Malaysia is nothing more than a Mamak restaurant (Ramly et al. 2003). As stated by the Malaysian Muslim Restaurants Operators Association (PRESMA) President, the industry of Mamak restaurants has generated revenue that contributed approximately RM8 billion to Malaysia's economy (Bakar and Farinda 2012). This indirectly shows that Mamak restaurant operators succeed in generating a significant quantity of income for the Malaysian GDP than other ethnic restaurants.

As Mamak stalls are operating 24 h a day throughout the year, offering foods and beverages at an inexpensive price, Mamak stalls have successfully become a well-known hangout spot to Malaysian youths (Zawawi and Ibrahim 2012). Apart from the authentic Tamil Muslim cuisine, Mamak restaurants today are also offering Malay, Western, Chinese, and even Thai cuisines, considering the ethnically different demographics of customers (Abdullah 2006). Additionally, Mohsin (2005) stated that food service establishments such as Mamak restaurants are challenged to keep the right food quality that influences the revisit intention of customers to Mamak restaurants. Hence, the issue of food quality and quantity may constitute a risk to food security at Mamak restaurants due to eating behavior disorders such as overeating, an imbalanced diet, and taking unhygienic or contaminated food (Mohsin 2005). In Malaysia, customers still choose to eat out at Mamak restaurants even though the price is more expensive (Ibrahim et al. 2017).

Besides, the unusually new issue of food and service quality has been further raised when non-Muslims are hiring non-Muslims to operate their business, which is nothing new to them (Malay Mail 2019). Some even joke about the arising issue that one can consume Mamak food so long as one does not enter the kitchen at the back. Besides, people nowadays emphasize food quality while enjoying the food at the food service establishment (Yusof et al. 2016). Unfortunately, customers prefer open-space seating since the weather in Malaysia is hot; however, this may lead to food contamination due to exposure to dust and other pollutants from public vehicles (Abdul-Mutalib et al. 2015). Thus, the responsibilities of the local authority to ensure healthy food at food service establishments are becoming more challenging (WHO 2002).

One of the frequent issues related to the environment of Mamak restaurants is cleanliness. As published by The Star Online (2018), customers were complaining that they expected the dining places to have a clean environment and hygienically prepared food. However, this issue has made them hardly go to outlets like Mamak

restaurants or stalls to eat. There were also issues of not complying with the local authority such as utilizing the road outside the restaurants to attract customers with an open dining area and setting a big screen for TV screening.

In addition, teenagers spend most of their time at Mamak restaurants from late night until early morning, creating an alarming issue such as misconduct during their outing. This issue has led to the eventual decline in their academic performance due to the trend of visiting a 24-h restaurant. Furthermore, given the scarce studies on customer revisit intention, particularly to Mamak restaurants in Penang, the purpose of the current study is to examine the impacts of food quality, service quality, and environment on customer revisit intention to Mamak restaurants in Penang. Therefore, the following questions were developed to reach the objective of the research.

1. What is the relationship between food quality and customer revisit intention toward mamak restaurant in Penang?
2. What is the relationship between service quality and customer revisit intention toward mamak restaurant in Penang?
3. What is the relationship between environment and customer revisit intention toward mamak restaurant in Penang?

2 Literature Review

2.1 Mamak Restaurants in Malaysia

The tourism industry has been certified by the Malaysian government as a highly ranked sector and Malaysia has been contentiously advertised worldwide (Ramly et al. 2003). Consumers are increasing their meal intake outside of their homes, which gives a big impact on food consumption trends in urban areas of advance and economically growing countries (Akbar and Alaudeen 2012). In the setting of Malaysian restaurants, Indian Muslim Restaurants culturally represents the act of dining out in the open at night (Jalis et al. 2018). The variety of foods and beverages offered by Mamak restaurants plays a crucial part in the success of their restaurant business, thus making them popular (Bakar and Farinda 2012). Based on a past study by Bakar and Farinda (2012), Mamak restaurants operate 24/7 and people often dine in Mamak restaurants to meet up with friends and family and enjoy delicious Mamak food.

2.2 Food Quality

An overall restaurant experience hinges on food quality, which influences customer revisit intention (Peri 2006; Eliwa 2006; Anuar et al. 2020, Zainuddin et al. 2020). Furthermore, Soriano (2002) mentioned that food quality is the most important aspect

for customers to dine in a restaurant and Ng (2005) additionally corroborated food quality as the crucial aspect in ensuring customer satisfaction. When appraising food quality, customers will determine various other factors such as food safety, food presentation, and food tastiness. Additionally, many researchers have proven that the frequently critical dimensions for eating out are food quality (Namkung and Jang 2007) and customer revisit intention (Sulek and Hensley 2004). Food quality is a fundamental aspect in affecting customer revisit intention to restaurants (Clark and Wood 1990), thus making it a leading factor for customers patronizing a restaurant (Susskind and Chan 2000). Based on the description, the first hypothesis in this study is as follows:

H1: There is a significant relationship between food quality and customer revisit intention to Mamak restaurants in Penang.

2.3 Service Quality

Service quality is reviewed as a crucial factor that leads to customer patronage. According to (Parasuraman et al. 1988) and Baker (1994), the evaluation of attribute performance and cognitive evaluation of customers on service are the two main aspects of service quality. This was proven by past studies such as by Kivela et al. (2000), Namkung and Jang (2007), Omar et al. (2014), and Sulek and Hensley (2004), which indicated that service quality is among the major elements to be included as a fundamental element for a dining experience that will determine the future visiting behaviour of customers. Hence, the overall perfection of the service provided is based on customer perceptions and it can be used to define service quality. Additionally, Drew (1991) noticed that the comparison between actual performance and expectations is done for customers to appraise service quality abstractly. Othman et al. (2009) also emphasized that customers afford to pay for food and services that are deemed meeting their appetite and expectations since they place more concern on service attributes. As supported by Bolton and Drew (1991), food and services were found to significantly influence customer revisit intention and patronage behaviour. In reference to the description, the second hypothesis in this study is as follows:

H2: There is a significant relationship between service quality and customer revisit intention to Mamak restaurants in Penang.

2.4 Environment

Earlier research has shown that the operating environment of medium-class restaurants such as concept and setup, interior appearance, and entertainment are not considered important elements from the perspectives of customers and operators (Othman et al. 2009 Hashim et al. 2020). The same goes for the level of customer toleration on food hygiene and the restaurant staff's hygiene. However, Othman et al. (2009)

urged that, due to globalization, customers are expecting restaurants to be more than just a place to dine (Nik Hashim et al. 2019). A restaurant's physical environment acts as an indicator for what customers judge as fundamental in order to rate the restaurant quality, which portrays a huge impact on customer perceptions of food quality (Parasuraman et al. 1988; Rys et al. 1987; Wall and Berry 2007; Omar et al. 2014). The statement was also proven by Lim (2010) and Chang (2000), who asserted that the response and judgement made by customers to a restaurant is based on the environment. In reference to the description, the third hypothesis in this study is as follows:

H3: There is a significant relationship between environment and customer revisit intention to Mamak restaurants in Penang.

2.5 Revisit Intention to Mamak Restaurants

Revisit intention is mostly used as a dependent variable in various models of service and satisfaction research in which intention is an abstract perception of the way customers will act in the future (Chow et al. 2013; Nik Hashim et al. 2019, Hashim et al. 2020). Revisit intention is clarified as the intention to repurchase as well as customer behaviour that shows the readiness to suggest and circulate optimistic facts for a service provider. Based on the viewpoint of the hospitality industry, in addition to food quality, customers also desire psychological satisfaction during the dining experience, which occurs through emotional and social interactions (Souki et al. 2019). Hence, important elements other than food including those that influence the satisfaction of customers and their intention to revisit restaurants must be indicated. In general, food quality serves as an essential element that manipulates customer satisfaction and revisit intention to a full-service restaurant (Kim et al. 2011; Hashim et al. 2020; Mulyani et al. 2021).

3 Methodology

3.1 Research Design

This study uses a non-experimental research design, which does not only predict and explain the innumerable verdicts related to the collection, treatment, and analysis of data but also provide a coherent basis for these choices (Marczyk et al. 2005). In this regard, the researchers explore an issue that has not been clearly identified to obtain a deeper understanding of the current problem. As such, in the current study, the researchers use a survey as the primary data and online resources as the secondary data to propose food quality, service quality, and environment as the independent

variables and their relationships with the dependent variable of this study, which is customer revisit intention.

3.2 Population and Sampling

The target research population entails the customers in Penang. The total Malaysian population was estimated at 32.4 million and the total population in Penang was 1,620,600 in the year 2018 (Department of Statistics Malaysia 2018). The total population includes Bumiputera, Chinese, Indians, and others. Thus, this study targeted customers of any age group comprising customers who revisit Mamak restaurants in Penang. Overall, Krejcie and Morgan's (1970) rule of thumb was used in determining the sample size of this study by selecting 384 respondents to answer the questionnaires.

3.3 Data Collection

It is essential to acquire accurate and reliable data on the situation of the study while managing the field study (Lethbridge et al. 2005). The processes of gathering information from all sources pertinent to the study in order to come up with solutions to the problem addressed in the study, testing the hypotheses, and evaluating outcomes are known as data collection. Data collection encompasses primary data and secondary data. In this study, the researchers used questionnaires to collect the data and all questionnaires were distributed to the customers who visit Mamak restaurants in Penang. Before answering the questionnaires, the respondents were requested to sign the consent letter to ensure that they agreed to participate as respondents. The estimated time for the respondents to answer the questionnaires is between 10–15 min. The questionnaires highlight the purpose and objectives of the study and that the information provided by the respondents is confidential.

3.4 Instrumentation

The questionnaires consist of three sections: Section A, Section B, and Section C. First, in Section A, the respondents must provide their demographic profile such as their gender and age, race, monthly income, marital status, and their frequency of weekly visits to Mamak restaurants in Penang. Meanwhile, the questions in Section B are related to food quality, service quality, and environment, each with five items. Finally, Section C consists of five items related to the dependent variable (Revisit Intention). The items for food quality, service quality, and environment of Mamak restaurants and customer revisit intention were adopted and adapted from past studies

Table 1 Results of reliability analysis

Dimension	Cronbach's alpha
Revisit intention	0.882
Food quality	0.954
Service quality	0.951
Environment	0.937

such as by Omar et al. (2014), Yusof et al. (2016), Othman et al. (2009), and Ramly et al. 2003. These items were measured using a five-point Likert scale.

3.5 Reliability Analysis

To analyse the data in this study, reliability analysis was employed. The reliability analysis for the actual research for a total of 100 respondents is shown in Table 1. All variables recorded significant variation of Cronbach's alpha values within a range of 0.882 to 0.954, denoting an excellent internal consistency and the reliability of all items provided in the questionnaires. Similarly, the obtained results are deemed acceptable because all of the values are more than 0.7 (Sumaedi et al. 2012).

3.6 Data Analysis

This study used IBM SPSS version 25 to analyse the data. The IBM SPSS software can be used to explain the influence of the independent variables on the dependent variable in terms of descriptive statistics and correlation. IBM SPSS is also able to process the data collected from the respondents in Penang and translate the data into useful information. The software processes large datasets efficiently and helps the researchers perform complex statistical analyses. Therefore, it is useful for the researchers and the reliability testing would further facilitate the data analysis.

4 Results

4.1 Demographic Profile

The current study has selected 375 respondents to answer the questionnaires. Generally, there were only 151 (40.3%) female respondents and 224 (59.7%) male respondents. This shows that the number of male respondents in this study is higher compared to female respondents. Table 2 shows the age range of 375 respondents,

Table 2 Demographic profile

Respondents' profile	Classification	Frequency n = 375	Percentage (%)
Gender	Male	224	59.7
	Female	151	40.3
Age	Below 20 years old	37	9.9
	20–29 years old	177	47.2
	30–39 years old	112	29.9
	40–49 years old	35	9.3
	50 years old and above	14	3.7
Race	Malay	147	39.2
	Chinese	119	31.7
	Indian	98	26.1
	Others	11	2.9
Marital status	Single	186	49.6
	Married	173	46.1
	Widow/Separated/Divorced	9	2.4
	Prefer not to tell	7	1.9
Monthly income	Below RM1,000	89	23.7
	RM1,000–RM2,999	112	29.9
	RM3,000–RM3,999	130	34.7
	RM4,000–RM4,999	29	7.7
	RM 5,000–RM5,999	8	2.1
	RM6,000 and above	7	1.9
Frequency of visiting Mamak restaurants in a week	Once a week	185	49.3
	2–3 times	158	42.1
	4–5 times	25	6.7
	6 times and more	7	1.9

which is divided into 5 categories. Based on the table, 37 (9.9%) respondents are below 20 years old, while the majority of the respondents are 20–29 years old with 177 (47.2%) respondents. Furthermore, 112 (29.9%) respondents are 30–39 years old, followed by 35 (9.3%) respondents aged 40–49 years old, and only 14 (3.7%) respondents aged 50 years old and above. Next, the table shows the race of the 375 respondents. For Chinese and Indians, the distribution of the respondents constituted 119 (31.7%) and 98 (26.1%) respondents, respectively. The majority of the respondents are Malays, attributing to 147 (39.2%) respondents, while only 11 (2.9%) respondents were reported to constitute other races than Malay, Chinese, or Indian. Overall, the minority of the respondents preferred not to tell their marital status, representing 7 (1.9%) respondents. However, the respondents are mostly single, representing 186 (49.6%) respondents, while those who are married and widowed/divorced/separated represented 173 (46.1%) and 9 (2.4%) respondents, respectively. The table also shows that, among all of the monthly income groups, those who earn from RM3,000–RM3,999 per month were the highest with a total of 130 (34.7%) respondents. The second-highest group was represented by those who earn from RM1,000–RM2,999 per month with 112 (29.9%) respondents. This

Table 3 Pearson’s correlation analysis results

Item	Food quality	Service quality	Environment	Revisit intention
Food quality	1			
Service quality	0.528**	1		
Environment	0.559**	0.665**	1	
Revisit intention	0.203**	0.465**	0.486**	1

is followed by a total of 89 (23.7%) respondents earning below RM1,000 per month, while those who earn from RM4,000-RM4,999 per month and RM5,000-RM5,999 per month constituted 29 (7.7%) and 8 (2.1%) respondents, respectively. However, the number of respondents earning RM6,000 and above was the lowest, representing only 7 (1.9%) out of 375 respondents. Basically, out of 375 respondents, 25 (6.7%) respondents visit Mamak restaurants 4–5 times a week, 7 (1.9%) respondents visited 6 times and more, while 42.1% (158) of the respondents visited Mamak restaurants 2–3 times a week and the majority of the respondents with 185 (49.3%) only visited Mamak restaurants once a week.

4.2 Correlation

The findings in Table 3 showed a positive correlation coefficient value of 0.203**, which indicates a positively weak relationship between food quality and customer revisit intention to Mamak restaurants in Penang. However, the significant level was 0.000, which is less than the standard criterion of 0.05, indicating a significant association that involves food quality and customer revisit intention to Mamak restaurants in Penang. Hence, the hypothesis (H1) is accepted. The findings also recorded a positive correlation with a coefficient value of 0.462**, which indicates a moderate relationship between service quality and the revisit intention of customers to Mamak restaurants in Penang. Besides, the significance level of the two variables was 0.000, which is less than the standard criterion of 0.05, indicating a significant association. Hence, the hypothesis (H2) is accepted. Lastly, the findings showed a positive correlation coefficient value of 0.486**, which indicates a moderate relationship involving the environment and customer revisit intention to Mamak restaurants in Penang. Meanwhile, the significance level for environment and customer revisit intention was 0.000, which is less than the standard criterion of 0.05. This indicates a significant relationship between environment and customer revisit intention to Mamak restaurants in Penang. Thus, the hypothesis (H3) is accepted. Table 3 below demonstrates Pearson’s correlation analysis results.

Table 4 Hypothesis testing decision for this study

Hypothesis	Result	Finding
H1: There is a significant relationship between food quality and customer revisit intention to Mamak restaurants in Penang	Positive weak relationship	Accepted
H2: There is a significant relationship between service quality and customer revisit intention to Mamak restaurants in Penang	Positive moderate relationship	Accepted
H3: There is a significant relationship between environment and customer revisit intention to Mamak restaurants in Penang	Positive moderate relationship	Accepted

5 Discussions

Pearson's correlation analysis results are presented in Table 3. Based on the table, Pearson's correlation value (r -value) for food quality and customer revisit intention was weak. Based on this finding, food quality is statistically significant and positively related to customer revisit intention; however, it is the least significant of the three variables examined in this study. Surprisingly, the highest average mean score for food quality, which indicates excellent quality. Based on the responses, the cuisine offered in Mamak restaurants is authentic and satisfies the appetite. Mamak restaurants prepare their meals using fresh Indian herbs and spices, providing their customers with the authentic taste of Mamak food. Additionally, freshly prepared food with an appealing aroma is enticing to customers. Bakar and Farinda (2012) substantiated the remark by stating that Mamak dishes contain a variety of Indian herbs and spices such as cloves, star anise, cardamom, coriander, and curry powder, which contributes to the delectability of the food. Besides, this finding coincides with a past study by Namkung and Jang (Namkung and Jang 2007), which indicated that food quality is one of the most critical components for eating experiences. Previous studies by Sulek and Hansley (2004) and Pettijohn and Luke (Pettijohn et al. 1997) also supported food quality as the essential element influencing customer inclination to come to food establishments. Thus, food quality enables the customers to choose their favourite dining spots and the notion that meal quality is associated with customer revisit intention towards Mamak restaurants is recognised. Generally, the results have achieved and answered the first research objective and question, thereby supporting the first hypothesis proposed in this study.

Meanwhile, this study found that service quality is moderately correlated with customer revisit intention to Mamak restaurants in Penang. The association between service quality and customer revisit intention is considered significant, which also supports the research hypothesis. Alternatively, the average mean for service quality was 3.5915, which recognizes the fact that service quality is essential for retaining customers (Sayuti 2011). Evidently, customers prefer revisiting the food establishment if they are satisfied with the services provided to them. Besides, previous scholars such as Venetis and Ghauri (2004) demonstrated in one of their studies

that service quality influences following service transactions and improves the maintenance and development of long-term client relationships. The findings are also supported by the fact that the average score for friendly wait staff at Mamak restaurants was the second highest. Customers are delighted to be greeted by courteous wait staff while ordering, and some staff members may even recognise returning customers. This shows the crucial role of service quality in exerting influence on the food industry's success. This was also reinforced by Ng (2005), who stated that the most critical factor affecting revisit intention is meal quality. Generally, the findings have addressed the second research aim and answered the second research question, besides providing complete support to the second research hypothesis.

This study has also discovered a significant link between the environment and customer revisit intention; thus, the hypothesis was accepted. Indeed, the environment significantly influences whether or not customers would decide to dine in a restaurant. According to Namasivayam and Matilla (2007), a relaxed atmosphere encourages customers to visit a restaurant. Nowadays, customers prefer to spend their free time after work socializing with friends and family at Mamak restaurants, which is open 24 h a day. Mamak restaurants have also successfully gained customer preference through bright and sufficient lighting, appropriate furniture placement, design, and a welcoming atmosphere. Lim (2010) and Chang (2000) stated that the environment enables consumers to form a reasonable picture of a restaurant prior to visiting and influences their response or perception of certain services provided by the environment. Generally, the findings have also addressed the third research aim and answered the third research question as well as completely supporting the third research hypothesis (Table 4).

6 Conclusion

Overall, food quality, service quality, and environment have a significant influence on customer revisit intention to Mamak restaurants in Penang. There was a weak positive association between food quality and consumer revisit intention; however, the relationships that involve service quality and environment on customer revisit intention were shown to be positive and moderately significant, respectively, with the environment producing the greatest correlation value. Besides, the findings have shown that the majority of the respondents considered food quality the key factor affecting their revisit intention to the restaurants, while the environment contributes the least. Most of the Mamak restaurants in Penang also offer almost the same food and services; therefore, Mamak operators must concentrate on serving food in a favourable setting and environment to obtain new visits from customers, which further helps increase business profit. Undeniably, this study is not without limitations. Primarily, research on Mamak restaurants, especially in the Malaysian setting is still in the early stages of development. Thus, to improve the generalisability of results, future studies can replicate the current study through a variety of settings. For instance, future researchers can solely emphasise the country instead of a single

state, as well as highlighting certain nationalities and making a comparison between distinct nationalities. Besides, selecting a suitable sample size for each group would also be more beneficial and it would be very interesting to examine how the revisit intention of the groups differ.

Additionally, future researchers may also delve into other essential determinants that play an important role in determining customer revisit intention toward Mamak restaurant that are omitted by the researchers. Therefore, it is suggested that more research could be conducted by exploring into other determinants such as location, price and facilities so that the results can be improved in a way that truly determines customer revisit intention toward Mamak restaurant in Penang. It would help to understand more factors that influencing customers to revisit Mamak restaurant in Penang. In conclusion, the research findings are expected to provide more insights and further enlighten the Malaysian stakeholders, particularly those in Penang.

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Consumer Preferences on Packaging Materials of Food Spread Products



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Abstract As opposed to today's packaging trends, the key focus of packaging used to be on the covering and safety aspects of the product. At the same time, nowadays, consumers are looking for packaging that offers convenience, reliable functionality and also appearance. In addition, major improvements in food distribution have affected food packaging due to environmental issues, including the globalization of the food supply, consumer preferences for fresher and more convenient foods, as well as a preference for healthier and higher-quality foods. Consumers are requesting that food packaging materials be more natural, disposable, potentially biodegradable, and recyclable. Thus, this survey is mainly aiming to investigate the customer's opinion and view on the types of packaging and the criteria of the packaging of food spreads available in the market. Biodegradable plastic tube packaging was suggested in this survey in order to introduce a new form of packaging for food spreads products. A survey was conducted to discover answers to unique and relevant questions about the opinion of consumers and view on the types of packaging and the criteria of the packaging of food spreads. The survey questions covered a wide variety of subjects. The questionnaire was answered by 152 female and male respondents. A survey was conducted via online using Google Form. Findings from the study showed mix responses and opinions on the packaging preferences of the food spread products with more than 50% of the respondents agreed with the conception of plastic tube food spreads packaging. The choice and preferences are based on the individual's personal likings and experience of use of the current products in the market. The choice of selection of the types and preference of the packaging of food spreads does not correlate with the consumers' demographic with no significant difference ($p > 0.05$). The choice and preferences are based on the individual's personal likings and experience of use of the current products in the market. The data obtained were also highly consistent and valid as the value was proven through Cronbach's alpha coefficient ($\alpha = 0.957$) which was bigger than 0.8. It can be concluded that plastic

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tube packaging can be a potential form of new packaging for food spreads products in the future market that could add value to the food products particularly. The marketing function of consumer packaging seems to be recognized among practitioners, yet academic research in this area is still quite limited. Therefore, this study is the first to provide broad information about Malaysian consumers' perception of food spread packaging materials, properties and sustainability. Findings from this study can contribute to further detailed consumer studies in product-specific packaging designs and application.

Keywords Food spread · Plastics · Food packaging · Marketing · Consumer preferences

1 Introduction

Spreads are applied to the food to improve the taste or texture of the food, which may be considered soft without it. Examples of food spreads are jams, peanut butter spreads, cheese and butter spreads and many more. There are few examples of leading brands in the market and they have few similarities of their packaging, which are Nutella, Lady's Choice jam and peanut butter as well as Skippy peanut butter and fruit jams. The similarities of packaging for those brands are they used plastic and glass jar type packaging. Advantages of using plastics as packaging materials are lightweight, possibility to be designed and tailored for a particular product and cheap price (Shakerardekani et al. 2013). Besides, plastics also share similar properties as glass packaging, as they are transparent, sustainable, inert, infinitely recyclable, reusable and refillable, safe to store food and drinks in.

Normally, consumers need to use their own spoon, knife or spreader to scoop the food spreads from the container to apply on the food products. However, nowadays people are living an easy go life. Therefore, they would highly prefer food spread packaging which has a unique feature that do not require them to use these food spread utensils. At the same time, consumers demand that food packaging materials be more natural, disposable, potentially biodegradable, as well as recyclable. Whereas this outcome, contain its own spreader as the time open the closure of the product as well as the container were made of biodegradable plastic. There would be no need of finding any cutlery for this product.

Bioplastics can be described as plastics based on (bio-based) renewable resources or as biodegradable or compostable plastics (Jabeen et al. 2015). This are made from materials that are safe and able to be discarded into a compost bin, rather than a recycling one (Romeo 2020). Biodegradable plastics are those that can naturally decompose in the environment. The structure of biodegradable plastics makes it easy to break down natural microorganisms, giving an end product that is less harmful to the environment. As such, biodegradable plastics are perceived to be more environmentally friendly due to their environmental benefits, which are difficult to deny compared to ordinary plastics. Moreover, there are few advantages of

using biodegradable plastic. Biodegradable plastics are easy to recycle, reduce the amount of waste produced, lower energy cost in manufacturing and lower petroleum consumption. Biodegradable plastics use the idea of natural products; therefore, the use of bioplastics can significantly reduce the amount of petroleum used and, as a result, reduce its environmental hazards (Rinkesh 2020).

Therefore, social problems is a global issue that is currently occurring. Packaging will lead to the resolution of some of them. In the future circular economy, packaging can have several positive roles. The use of plastics are the greatest obstacles in the future; while they are competitive in many respects, they also cause immense environmental problems. Problems caused to the environment by packaging, especially plastic packaging, must be resolved in order to achieve a functioning circular economy. Packaging must be manufactured from recycled materials in the future and must be 100% recyclable or biodegradable. In terms of that, this food spreader made of biodegradable plastic is more environmentally friendly. With all concerns above, this study aims to gather information with regards to consumer preferences on packaging materials of food spread products among Malaysians.

2 Literature Review

Packaging is an important material that protects the food inside from external factors, maintains it freshness, allows the food to reach the consumer in a safe and reliable conditions, and enables proper transportation and storage (Yaris and Sezgin 2017). Today, packaging is an inseparable part of the entire process as it is a part of every phase of the product, starting from the first stage of product development in adapting to the market requirements, and going on through production, protection, storage, transportation, distribution, advertising, sales and marketing, as well as final consumption (Yerlikaya et al. 2008).

Food packaging has been described by the Packaging Institute International as the enclosure of items, packages, or products in a wrapped pouch, box, cup, can, tray, bottle, tube, tray or any other materials (Kaewprachu and Rawdkuen 2016). Food packaging, which has widespread uses for reasons such as facilitation of everyday life, is one of the more recent hot topics regarding food due to issues such as consumers' health, food costs and environmental concerns.

Generally, the packaging is a system coordinated to prepare the products for protection, containment, transportation, distribution, storage, sales, communication, information, display and utility of the products (Kocamanlar 2009). Besides, the packaging maintains the physical, chemical and microbiological properties of foods, thus extending their shelf life. In the past, packaging, which only added an additional burden to production costs, was considered as part of the production process (Yaris and Sezgin 2017).

Foodstuffs, based on their characteristics, can undergo microbiological, biological, chemical and physical degradation due to factors such as oxygen, humidity, light, smell and heat. Therefore, keeping in consideration the sensitivity to factors of

the product to be packaged, the permeability characteristics of the material in terms of oxygen, carbon dioxide, moisture, light, odor and aroma must be very well known for the selection of the packaging material (Taş and Ayhan 2006).

Food products can be packaged in various packaging materials using various techniques and technology. The selection of the packaging materials are made without compromising the main factors; safety and maintaining the shelf life. Plastic is the most widely used form of food packaging as it is flexible, lightweight, inert and non-reactive, excellent barrier to lights, vapours, moisture and gases. In addition, its versatility and cost effective have been confirmed over decades in the processing and packaging of food. According to www.btsa.com (2021), traditional packaging materials have also been replaced by plastic packaging due to a lower cost and lower energy consumption during manufacturing. In addition, they are able to preserve and protect the food for longer and at the same time, minimizing the use of preservatives.

One of the widely use packaging design and material is plastic tube packaging. Nowadays, food in tubes might sound a bit weird to most but this type of packaging could be an added value to the food product aesthetically. According to www.ateriet.com (2021), this design of packaging not only look a bit futuristic and cool but there are other attracted factors as well. First there is not very much packaging needed, with the tubes used are either thin metal or plastic and compared to glass this way is very efficient. Moreover, it is one of the ingenious solutions to traditional spread packaging in order to appeal to modern lifestyles in new and practical ways.

In addition, dispensing from a tube rather than scooped out of a jar can also ease in handling by avoiding messy affair if a person doesn't have the right tools at their immediate disposal (Young 2021). People are leading more on-the-go lifestyles and with that in mind, it's important that spread packaging is easy to use while mobile. These designs also point to a health conscious frame of mind where can be used by kids easily without breaking any jars <https://www.marmetube.de/english> (2021). Furthermore, as people adopt a diet of smaller meals, snacking is something that is becoming increasingly popular. These examples of modern spread packaging make such eating activities so much more convenient while not making sacrifices in any other ways (Young 2021).

Packaging materials need to be tailored to be able to maintain the quality of food as well as other rising demands from the consumers, producers, as well as legislative forces (Ncube et al. 2020). Innovation in packaging also lead to increasing in the demand for innovative and convenience packaging. In Sweden, particularly, a lot of food in tubes can be found on shelves of Swedish grocery store, for examples mustard in a tube, mackerel in tomato sauce, mayonnaise, vegetable paste that most commonly used as a sandwich spread, tomato paste, Swedish caviar, anchovies paste/cream, grated horseradish, blue cheese, Kebab flavoured soft cheese, salmon paste and many more. This is considered as uncommon among consumers in the rest of the world.

In this study, the respondents were asked about their preferences on packaging materials of food spread products. According to www.tetrapak.com (2021), spreads are foods that are applied, generally with a knife, onto bread, crackers and similar foods. A spread is used to enhance the flavour or texture of the food, which may be considered bland without it. A sandwich spread is a spreadable condiment that

goes inside a sandwich and is typically used as an accompaniment for more solid ingredients. Examples include dairy spreads such as soft cheeses and plant-derived spreads such as hummus, an Eastern Mediterranean dish made from cooked, mashed chickpeas.

Spreads package in squeezable bottles, tubes and pots are made from polypropylene coextruded with ethylene vinyl alcohol that highly resistant to humidity, fats and gases. According to www.mordorintelligence.com (2021), this laminated tubes are completed with multi-layered barrier structure that provides excellent barrier properties and minimize the transfer of oxygen and light, offering protection against bacteria, due to which the demand is rising. Besides, food that is squeezing out from the tube and then placing the cap back on there is always little or no air inside that will harm the food. This makes the food last way longer in a tube than what it would do in a jar. In a jar the remaining food gets spoiled faster due to the exposure to air, in a tube the food gets almost vacuum packed after each serving <https://www.ateriet.com> (2021). Therefore, these tubes improve the shelf-life of the food packaged in the plastic tubes.

According to www.marketresearchfuture.com (2021), global tube packaging market is expected to reach a market size of ~USD9904 million by 2025. The market can be segmented into four based on the following: 1) end-users (cosmetic and oral care, food and beverages, pharmaceuticals and others), 2) products (squeeze tubes packaging, twist tubes packaging, cartridge packaging and other tubes packaging), 3) material, and 4) geographies (SandlerResearch 2019). It has also been estimated that, by 2050, a 50% increase in global food supplies will be required due to the increase in global population growth (Ncube et al. 2020; Guillard et al. 2018). Increasing demand for these types of packaging from application industries, such as food, cosmetics & personal care, and healthcare, is expected to be the primary driver for the market.

Based on a report at www.grandviewresearch.com (2021), increasing curbs on the usage of plastic are expected to create opportunities for innovative materials including bioplastics, aluminum, and others. Plastics like polylactic acid are primarily derived from renewable energy sources, such as corn starch, sugarcane, chips, tapioca roots, and other starches. Biodegradability, recyclability, and non-toxicity are the key factors driving the demand for bioplastics around the globe.

According to www.mordorintelligence.com (2021), tubes are considered as one of the most popular packaging formats due to their convenience, portability, and flexibility to hold and dispense a wide variety of products. Factors like the increasing urbanization, growing millennial population, and rising disposable incomes of consumers are the major contributors to the growth of the market studied. Urbanization has been responsible for boosting disposable income and creating awareness about the availability of different cosmetics products, thus creating several opportunities for market players and significantly spurring the demand for tube packaging.

With the rise of environmental concerns, manufacturers realize the need to introduce eco-friendly packaging material to promote sustainability and attract eco-conscious consumers. Manufacturers are emphasizing the use of recyclable materials

in packaging, and use of resins derived from renewable resources. The analysts expect minimal use of non-biodegradable materials in packaging (SandlerResearch 2019).

3 Methodology

3.1 Design and Sample

This study utilized online surveys carried out in several states around Malaysia, to obtain quantitative data on consumer preferences of packaging materials of food spread products. Respondents were randomly surveyed and the information gathered using Google Form. Prior to the study, a consent form was distributed to all respondents fill in. The survey comprised of 32 questions which were divided into three sections (i) demographics (5 questions); (ii) knowledge, attitude and practices regarding the food spread packaging (27 questions). Likert scale was used for the measurement of variables. Only surveys that met the inclusion criteria were retained for analysis. A total of 152 valid responses were obtained where none were invalid. Therefore, the response rate was 100%, which met the quantity requirements of the survey. Therefore, all data were valid and reliable for analysis.

3.2 Demographic Variables

The questionnaire was answered by 67.1% of female Malaysians respondents with the Generation Z (age between 18 and 24 years) represent the highest categories of age groups at 72.4%. More than half (55.3%) of the respondents were Malay ethnic, students (72.4%) and single status (90.1%).

3.3 Food Packaging Questions

This survey sought to find customer preferences of plastic tube packaging for food spreads that relates to its properties, designs and recyclability of the packaging materials. To explore an individual's knowledge, practices and attitudes towards the issues, opinion statements were formulated and language such as "Yes/No/Uncertain" was used to encourage answers. Besides, responses were also measured on a five-point Likert scale ranging from "Strongly disagree" to "Strongly agree".

3.4 Data Analysis

Microsoft Excel was utilized to carry out the data analysis. Besides, the analysis of variance (ANOVA) was conducted in order to identify the significance of the results. It also helps to figure out whether need to reject the null hypothesis or accept the alternate hypothesis. This test was also utilized to determine p -values. When the p -value is less than 0.05 (p -value $<$ 0.05), it is considered statistically significant.

Reliability and Validity Analysis. The data from the survey was analysed to ensure that the survey results are reliable and valid to be used. Cronbach's alpha coefficient (α) was carried out to measure the level of reliability of the 27 Likert scale questions in the survey. The value of α which exceeds 0.8 indicates that the scale used in the survey is stable and the results are consistent (Tang et al. 2011).

Correlation and Regression Analysis. The correlation analysis is conducted to show the relationship between two or more variables that are being analysed (Naveed et al. 2021). The variables that were analysed by using this technique were the 1) respondents' demographics (gender, age, employment status and marital status) in terms of ratings on the choice of food spread packaging and the 3 criteria of the consumers' preferences on the packaging materials of food spread products (knowledge, attitude and practices). The positive values of the correlation coefficient will indicate a positive relationship between the variables. Regression analysis is used to measure the strength of the relationship between the variables (Naveed et al. 2021). Customers' knowledge is treated as the independent variable while customers' attitude and practices were treated as the dependent variable. The positive R value will indicate the positive relationship between the variables. R value closer to $R = 1$ shows a stronger positive relationship.

4 Results and Discussion

4.1 Reliability and Validity of Survey Data

After obtaining the online survey results, the responses from each respondent were analysed and filtered. Overall, there were no invalid responses that were obtained as all 152 respondents had completed all the questions that were provided in the survey. However, in order to analyse the internal consistency of the responses by each respondent for the 27 Likert scale questions, Cronbach's alpha coefficient (α) analysis was conducted. Based on the analysis, the value of $\alpha = 0.957$ was obtained. Since the value of $\alpha >$ 0.8, it is proven that the data from all the 27 Likert scale questions that were obtained by the 152 respondents are internally consistent. Therefore, the data from the survey is reliable and valid to be used for the statistical analysis.

4.2 Customers' Demography

The survey was divided into 4 different parts which are the respondents' demography, customers' knowledge, practice and attitude. A total of 152 respondents had involved in the online survey. The respondents' demography represents the basic information on the characteristic of the respondents. In the survey, female respondents are the most active respondents which are 102 (67.1%) respondents of the total respondents, compared to male respondents who are only 50 (32.9%) people. This probably due to female respondents are the ones that do the groceries shopping for families. In addition, a total of 110 (72.4%) respondents were from the age group of 18 to 24 years, followed by the age group of under 18 years with the total of 16 (10.5%) respondents, the age group 25 to 34 years with 15 (9.9%) respondents and the group of 35 years or above is only 11 (7.2%) respondents. This is comprehended with the way the questionnaire was distributed which is through social media that dominance by the young people.

Malay respondents recorded a total number of 84 (55.3%) respondents out of the total. 36 (23.7%) respondents were Indian, 20 (13.2%) respondents were Chinese and 8 (5.3%) of the respondents were Eurasian. Meanwhile, Punjabi, Land Dayak, Iban and Dayak each contributed 1 (0.7%) respondent. In addition, 110 (72.4%) respondents involved with this questionnaire were students, while 31 (20.4%) respondents are full-time employer, 5 (3.3%) respondents employ part-timely, and 4 respondents are unemployed. Only 2 (1.3%) respondents are retired. Overall, single status recorded the highest number compared to married status. In this context, the status of 'Single' recorded as much as 90.1% equivalent to 137 respondents out of the total, while the status of 'Married' recorded a total of 15 people which is 9.9%.

Based on the correlation analysis between the respondents' demographic in terms of ratings on the choice of food spread packaging (Fig. 1), it was observed that there was a positive and highly significant relationship (1) between 1) gender with age and marital status and 2) age with marital status. Subsequently, based on the ANOVA test analysis, it can be observed that the choice of selection of the types and preference of the packaging of food spreads does not correlate with the consumers' demographic with no significant difference ($p > 0.05$) were observed in conditions as follows; 1) between the gender of respondents and the choice of the food spread packaging, 2) between the age of respondents and the choice of the food spread packaging, 3) between the employment of respondents and the choice of the food spread packaging, and 4) between the marital status of respondents and the choice of the food spread packaging. This reflects that difference in gender, age, employment and marital status, does not affect the selection choice of the food spread packaging. The choice and preferences are based on the individual's personal likings and experience of use of the current products in the market. Therefore, if the consumers' had bad experiences from their usage history, they may seek for new products that can better satisfy their needs.

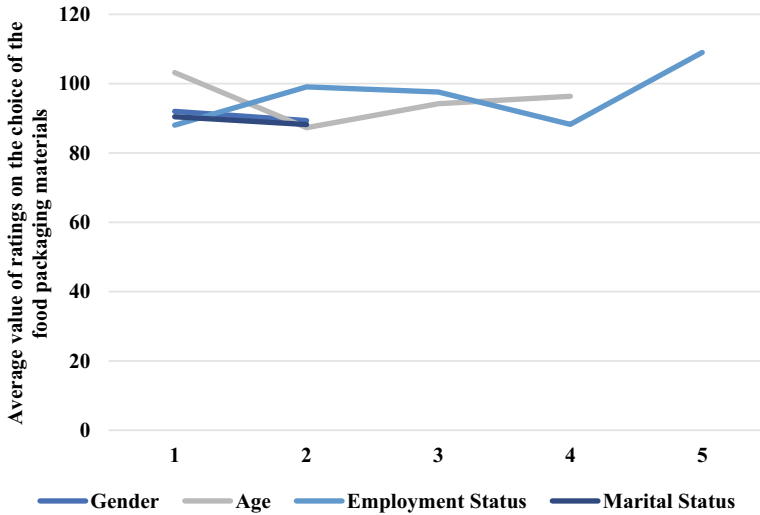


Fig. 1 Correlation between the respondents’ demographic in terms of ratings on the choice of food spread packaging

4.3 Customers’ Knowledge

The information provided in this part involves knowledge and understanding of the respondent on the packaging materials of food spreads products based on their experience in purchasing these products.

Raw materials used to make plastics are rather non-reactive at room temperature. Plastic products may contain many additives that are included to change appearance, such as colors, or to change performance, such as materials that make stiff plastics more limp and flexible. All additives for food packaging must pass stringent testing to meet FDA requirements for indirect food additives whether the additive actually is ingested or not. Figure 2 shows majority of the respondents (96.71%) agreed that packaging material of food spreads should be safe and do not cause harmful effect to consumers. In addition, 94.08% of respondents agreed that packaging material used to package food spreads should be stable and not easily broken. More than half of the respondents chose packaging with materials that are durable and hard to break. The plastic tube food spreads are flexible packaging which is the segment that has actually caught the attention of the end users. Flexible packaging makes it easier for storage and transport purposes. 86.84% of the respondents aware that food spreads products in the market are mostly packaged in glass jars and some are in plastic jars that preferred due to the hygienic concern among the respondents. Furthermore, the packaging materials should also have the air-tight properties even though different types of packaging give different airtight properties. External factors such as vapours and air can easily spoil packaged goods that contribute to the change of flavor, taste, aroma, as well as shorten the shelf-life of the products.

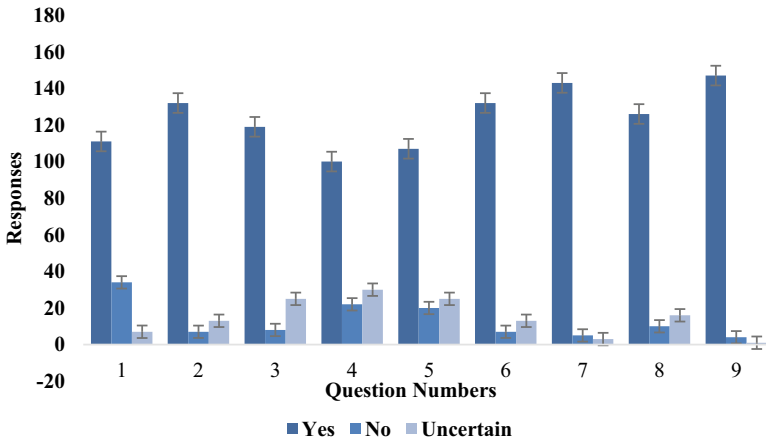


Fig. 2 Responses from the respondents showing their knowledge on food spread packaging

As packaging waste management is slightly inefficient, respondents feel more responsible for environmental pollution which contributed by plastic food packaging particularly. In order to sustain the nature, recycling will be an alternative to reduce packaging disposal. Hence, 82.89% of the respondents preferred glass jars as they can be reused but not the plastic food spreads that are hard to be recycled. 78.29% of the respondents agreed that type of packaging can influence the shelf-life and the quality of the food spreads. Packaging influence large numbers of respondents' buying behaviour. 73.03% of the respondents are concerned about the packaging is because the primary goals of a sustainable food system are to preserve food quality, increase protection and reduce post-harvest waste. This means that good packaging reflects quality and safety of good products. Finally, 70.39% think current packaging of food spreads in the market provides high convenience to consumers due to their advantages of ease of handling and low cost, with 65.79% of the respondents are certain that plastic tubes can potentially be replaced with jars in the packaging of food spreads.

Respondents in general are concerned on characteristics of the packaging of the food spread (Fig. 3). 55.92% respondents strongly agree that the packaging materials used to packaging food spreads should be safe to be used and does not cause harmful effects to consumers. Moreover, 54.61% respondents prefer packaging that are able to maintain the shelf life and quality of the food spreads, while 53.95% of the respondents strongly agree that food spreads should be packaged in a stable packaging where the material is not easily broken. As for the opinion on if they prefer packaging materials that are light-weight which easy to be used and handled, 51.97% agree with the statement. In addition, 48.03% respondents prefer packaging that do not take too much space during storage, while 46.71% respondents strongly agree that they prefer packaging with the air-tight properties and recyclable.

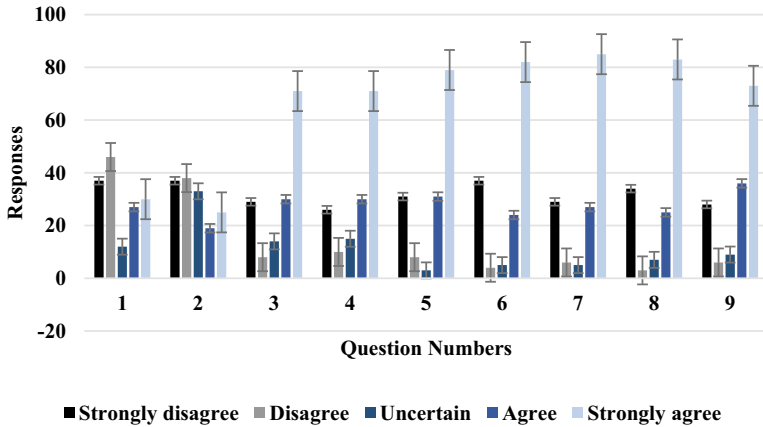


Fig. 3 Responses from the respondents showing rating of their knowledge on food spread packaging

On a side note, 30.26% respondents disagree that packaging is not the main criteria that they consider when buying food products such as spreads. It shows that the consumers are aware of importance of the packaging and its role in maintaining the safety and quality of the foods. In addition, 25% respondents disagree that current packaging of the food spreads in the market does not provide convenience to consumers. Most of the food packaging nowadays are more innovative with properties like easy opening, ergonomic and eye catchy design.

According to Adebayo and Abdus Salam (Naveed et al. 2021), usual packaging of the mixed fruit jams which are also a form of food spreads, are usually in glass or plastic jars. The jars are cleaned and sterilized before the jams are filled into them and then they are sealed with a foil lid or with a snap-on plastic lid, and plastic film. A test was conducted in order to study on the shelf-life of these jams stored in these jars. The physical characteristic of the jams were analyzed monthly in terms of their pH, moisture content and total soluble solids (TSS), microbiological enumeration of total bacterial, total fungal and total coliform counts. Based on the results, the jars which were stored in room temperature had a shelf-life of 15 months. However, due to characteristic of the packaging which has a wide opening may lead to the decrease in shelf-life of the product if improper handling and non-hygienic food practice is adopted by the consumer of the product (TB 2021; Adebayo and Abdus Salam 2017). The findings are in agreement with a report in www.ateriet.com (2021). Therefore, based on the results of the survey, a new idea was generated in order to introduce a new form of packaging for food spreads which is in the form of plastic tubes which is able to prolong the shelf-life of the product for more than 15 months.

In this study, it was observed that consumer buying behavior is influenced by product packaging as shown by Fig. 2, regarding the main criteria that is considered when buying the food products such as food spreads. The results showed 73.03%

responded as “Yes”. This shows that large numbers of respondents agreed that packaging is an essential element before purchasing food product such as spreads. The result obtained clearly highlights the importance of packaging. Packaging does not only function to protect and contain the product but also functions as an essential marketing tool which supports product branding, emphasizes the product’s best features and creates an unforgettable experience for the customer (TB 2021). The main criteria that were focus in the food spread packaging include the material and type of packaging, packaging convenience, the ability to extend the shelf life and recyclability.

4.4 Customers’ Practise

This chapter gives information on how the respondents handle the food spread products. Firstly, the respondents were asked on the importance of using clean spreading materials such as spoon or spread knife to spread the food spreads. Figure 4 shows 97.74% respondents responded “Yes”, agreeing to the statement. This shows that majority of the respondents are aware about the importance of food hygiene practice when handling food spreads. The importance of using clean spreading materials is crucial as a good food hygiene practice in order to avoid food poisoning caused by bacterial contamination (TB 2021; Adebayo and Abdus Salam 2017).

88.16% respondents responded “Yes” when were asked if they feel it is non-hygienic to dip their fingers in the food spreads. This showed that the respondents are aware that dipping fingers into the food spreads involves direct contact with the food product and is considered a non-hygienic food practice that may product contamination (TB 2021; Adebayo and Abdus Salam 2017). Next, 86.84% respondents agreed that it is important to close the lid of the food spreads jars immediately after using them. This is to protect the food spread products from external source of

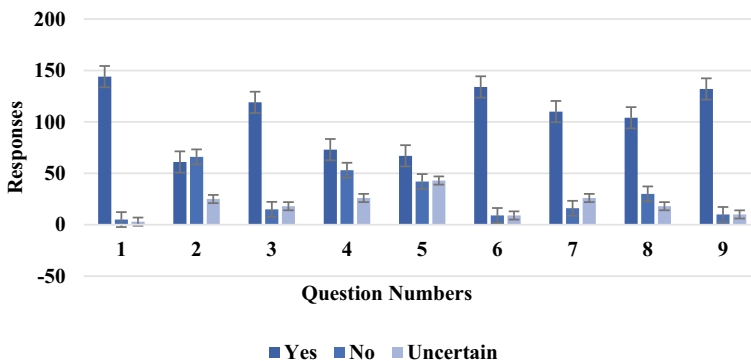


Fig. 4 Responses from the respondents showing their practices on food spread packaging

contamination such as heat, moisture, dirt, dust and microbial contamination (Uçar et al. 2016).

Furthermore, 78.29% respondents responded “Yes” to the practise of using dry spreading materials for food spreads. Using dry utensils prevents cross-contamination with the food spread products. Wet materials can transfer bacteria and germs from the utensils to the food products. Therefore using dry spreading materials help to maintain the shelf-life of the food spreads (Konrad 2021; Robertson 2012). Besides, dispensing from a tube rather than scooped out of a jar can also ease in handling by avoiding messy affair if a person doesn’t have the right tools at their immediate disposal (Young 2021). Among all, 72.37% respondents agreed to the need of storing the transparent jars containing food spreads in the area with minimal light exposure. The reason of proper storage of transparent food spreads jars is to prevent the effects of photo-oxidation which may contribute to the food spreads deterioration. Photo-oxidation may lead to loss of both nutritional value and sensorial quality of products (Day Job.com 2021).

Most of the spreads available in the market require the users to use food spread materials and 68.42% respondents found that it is inconvenience and quite troublesome to wash the utensils every time after using them. After using the food spread materials, it will be time and energy consuming to wash these utensils and therefore creates inconvenience to the consumer of the product. As the world and consumers change, this marks the need of innovation for the food spread manufacture to offering consumers more sustainable product design.

Furthermore, the respondents were also asked if they found it is inconvenient to bring their food spread jars for outdoor activities. 48.03% respondents responded “Yes” which could be contributed by the size, weight, ease of handling characteristics and material of the jars. For example, spreads package in glass jars can be heavy, brittle, easily broken as well as sold without spreading materials. Therefore this causes the consumers to feel inconvenient to bring the jars around. This also related to a question related to the safety when using the food spreads, particularly among children. 44.08% respondents responded that they did not feel secure and not allow their children to handle the food spreads by themselves. This may be due to the materials being unsafe for the children to handle, particularly the glass jars that has low resistance to fractures, scratches, and thermal shock. Besides, it is potentially serious hazards arise from glass splinters or fragments in foods. The use of the food spreads materials such as knife spreads are sharp objects and may cause harm to children (Manual 2006). This is also supported by the www.marmetube.de (2021) who stated that the designs point to a health conscious frame of mind where can be used by kids easily without breaking any jars.

Finally, 43.42% of the respondents agreed that they always forget to tightly close the lid of the jar after using the food spreads, with the lids functions as closure to contain and protect the product against contamination (Uçar et al. 2016). Without proper closure, vapours and oxygen could infiltrate into the jars cause spoilage of foods spontaneously. Oxidative spoilage could cause of quality loss in fats and fatty portions of foods. Oxygen also provides conditions that enhance the growth

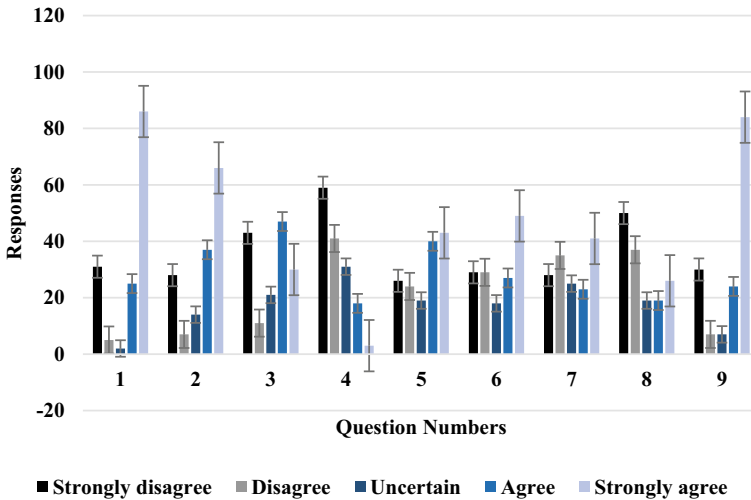


Fig. 5 Responses from the respondents showing ratings of their practices on food spread packaging

of microorganisms such as molds and most yeast that causing food to spoil require oxygen to grow, thus, shorten the shelf life of the food products.

Consequently, the respondents were also asked if they used clean spreading materials during the spreading of the food spreads and majority of the respondents (56.58%) strongly agreed to the practise (Fig. 5). 55.26% of the respondents also strongly agreed that it is important to immediately close the lids of the food spread jars after using them. The practise could ensure the quality of the spread be maintained. Next, 43.42% strongly agreed that they made sure to avoid any direct contact with the food spreads. This could cause cross contamination that contributed by the microbes on hands.

Furthermore, 32.24% of the respondents stated that they feel unconformable and troublesome to wash the food spread utensils every time after using them. The finding could lead the food producer to innovate a convenient packaging design as another marketing strategy. The respondents were also asked if they feel that it is unsafe for their children to handle the jars containing the food spreads on their own with 28.29% respondents strongly agreed to the statement, while 26.97% of the respondents strongly agreed that it is inconvenient to use the jar of food spreads during any outdoor activities such as picnics. The above finding could be due to material of the packaging and its properties, particularly the glass jars. Regarding the storage problems, 30.92% of the respondents only agreed that they do not face problems to store their food spread which could be due to design of the packaging and made from flexible materials.

Figure 5 below also exhibited 38.82% of the respondents strongly disagree to the statement and show good practice to consider light exposure when storing the food spread packaged in the transparent jars. The good practice could avoid the degradation and oxidation reactions that contributed from the light energy. Finally,

32.89% of them also strongly disagree that they always forget to close the lid of the food spread jar tightly after using it. It shows that the respondents are aware the importance of closing the lid to avoid contaminations from occur and shorten shelf life of the food spreads.

4.5 Customers' Attitude

The information provided in this part involves the respondents' attitude on their choice on the packaging material of food spread products. Respondents were asked their preferred packaging in terms of materials, properties and sustainability.

Almost all respondents (96.5%) prefer packaging that do not cause alteration of the product's taste. The changes of taste, flavour and aroma are highly contributed by a migration process when substitutes from the packaging migrate and infuse into the foods. This is in agreement to a report by (Seongyoung et al. 2018). However, the materials used for food spread packaging; polypropylene coextruded with ethylene vinyl alcohol is proved by the FDA as safe to be used to package food.

The migration process can also be avoided if the material used is stable. Hence, 95.39% respondents responded "Yes" that they prefer packaging material that are stable and not easily broken physically. Material that is stable will provide physical strength to the packaging which does not break easily (Seongyoung et al. 2018). The same number of respondents preferred the packaging that are easy to be used. This also can be referred to an easy opening and reclosability characteristics.

94.74% respondents responded "Yes" to packaging that do not affect the smell of the product. The materials that are odorless will not release any odor into the food which may cause the food to lose its natural smell from their ingredients (Seongyoung et al. 2018). The respondents were also asked if they prefer packaging that provides convenience during storage and use and 94.08% respondents responded "Yes" to the statement. According to various food and beverages industry reports, packaging convenience is a key purchasing motivator for consumers. It affects their preference towards a particular type or design of packaging and influences their behavior (Risk Assessment Studies Report No 2012). This is due to people are leading more on-the-go lifestyles and with that in mind, it's important that spread packaging is easy to use while mobile (2021). In addition, tubes are considered as one of the most popular packaging formats due to their convenience, portability, and flexibility to hold and dispense a wide variety of products (2021).

Besides, 92.11% preferred packaging materials that are environmental friendly. Such materials that are usually environmental friendly include those materials which are biodegradable and compostable (Seongyoung et al. 2018). These materials do not release any harmful chemicals which may pollute the environment. 88.82% respondents preferred the packaging material that are light-weight. This characteristic makes the process of handling becomes easy and provides convenience of use not only to the consumers, but also the distributors and retailers.

Next, 86.84% respondents preferred packaging that are recyclable, while 84.87% respondents preferred packaging that provides unique functions. Unique functions of packaging materials will add to the convenience for the consumers. For example, the use of plastic tubes with the opening that functions as a food spreading material can provide the convenience to the consumers during usage. Knife spreaders and spoons are no longer needed during the spreading process. All responses are summarized in Fig. 6 below.

Meanwhile, Fig. 7 shows rating responses by the respondents from 1 (strongly disagree) to 5 (strongly agree). Majority of the respondents (43.42%) strongly agreed that they prefer the plastic tubes that are made from natural-based materials. Next, 42.76% respondents also strongly agreed that they would prefer the plastic tubes made from biodegradable plastics that are safe for the environment. The public awareness indeed plays an important role in the prevention of environmental degradation which highly contributed by the food packaging materials.

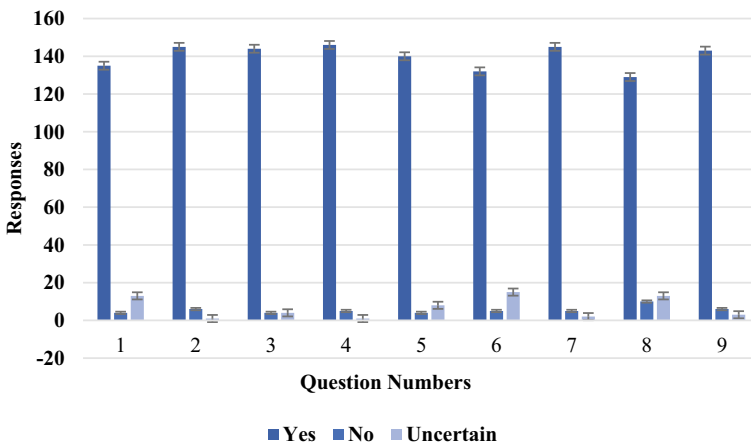


Fig. 6 Responses from the respondents showing their practices attitude on food spread packaging

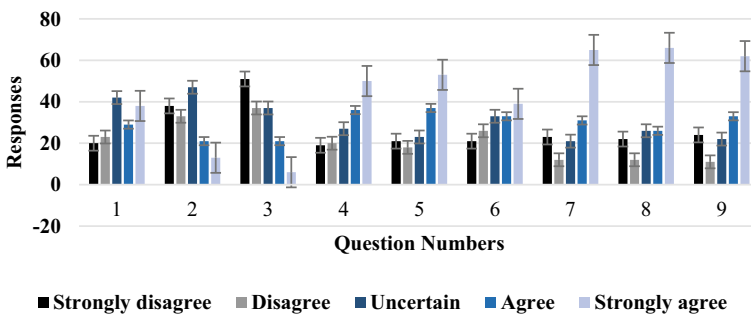


Fig. 7 Responses from the respondents showing ratings of their attitude on food spread packaging

Furthermore, 40.79% respondents were also strongly agreed that they would prefer the plastic tubes to have the opening that functions as a spread material instead of a circular opening. Most of them (34.87%) also prefer food spreads packaged in plastic tubes because it is more hygienic as the food are less exposed to contaminants from the environment or the spreading materials, as well as ease of handling and storing. In addition, 32.89% respondents strongly agreed that they would prefer food spreads packaged in plastic tubes because the spreads can be directly spread on the bread surface without the use of spoons or spread knife. Besides, 5.66% respondents strongly agreed that they would prefer food spreads packaged in plastic tubes because the packaging can provide a longer shelf-life of the product compared to jar.

When asked if they feel that plastic tubes are less flexible which makes it difficult to be stored compared to jars, most of the respondents (33.55%) were strongly disagree. Moreover, most of them (30.92%) also uncertain whether the plastic tubes are less stable and break easily compared to jars, and 27.63% respondents were uncertain if they prefer food spreads to be packaged in plastic tubes because they are more light-weight when compared to jars.

The trend of food in tubes is reported occur widely in Sweden where most foods there are packed in tubes. Not only does it look a bit futuristic and cool, but also affect the marketing in many ways. From the findings, it shows that the plastic tube food spreads can be a good replacement for current food spreads packaging which is jars. This can be proven from the results shown by Fig. 2–7.

Plastic tube is tough, flexible, has good gas and moisture barrier characteristics. Even though jars proved to preserve food the best, however, plastic also has the ability to slow the bacterial growth on food products. The squeeze-able characteristic i.e. the squeezing out the spread from the tube and then placing the cap back avoids the air from entering the tube, makes the food last way longer in a tube than what it would do in a jar. In tube, the food gets almost vacuum packed after each serving. Meanwhile, in a jar, the remaining food gets spoiled faster due to the exposure to air. The effect of air is explained by (Han et al. 2018) who reported degradation in packed black plum jam color change due to high temperature, and also interaction with air and light. Since air affects bacterial growth, the air-tight food spreads tube can lessen the interaction between food spreads and air. For instance, black plum jam pack in plastic packaging recorded a low bacteria number and safe to be kept up to 6 months with a proper storage (Han et al. 2018).

Furthermore, the convenience and consumer acceptance of plastic tube food spread is owed to its lightweight, flexibility and a variety of physical properties (2021; Draskovic 2010). The convenience also include easy opening and close lid feature, as well as easy for storage. As tube food spreads is made of plastic, it is lighter and easier to carry than the glass jars. A study conducted by (Aslam et al. 2019) shows that the older age consumers chose plastic packaging as it is light and easy to carry around. Besides, the plastic tube food spread also easy to be handled as it has an easy opening than glass jars with lid that difficult to be opened. Consumers especially the elder group favour packaging with easy open lid (Aslam et al. 2019). This is also in agreement with (Marsh and Bugusu 2007), where they stated that consumers choose easy open and close packaging. The concern with an easy opening is consumers

afraid that the food product might easy to get contaminated for its poor closure. As stated earlier, the plastic tube packaging is air-tight and can slow down microbial growth. Furthermore, this plastic tube also flexible which is not easy to break and not brittle. It is an ideal packaging for storage and saves many spaces.

Nowadays, innovations and advancements in material science have given food packaging a positive future in terms of efficiency and environmental impacts when food plastic packaging contribute to the highest number of packaging waste. In this context, plastic packaging usually hard to be recycled. For instance, butter spread packaging is hard to be recycled due to the materials used, consist of many parts, and also the fatty acid on the surface of the packaging is tough to be cleaned (Ribeiro et al. 2018). This kind of difficulty had made them lose interest in recycling. Therefore, biodegradable plastic is a way to save the environment. The plastic tube food spreads are biodegradable. Food spreads that are biodegradable can help to reduce waste management that consumers do not necessarily need to recycle the packaging anymore. The biodegradable plastic tube food spreads can be degraded by bacteria or other living organisms, hence, reducing pollution. Despite being biodegradable, this tube packaging is still safe to be used and does not cause harmful effects to not only humans but nature too. Additionally, the ecological features in packaging will surely influence the purchasing of the product.

In addition, most plastics are stable and chemically inert that will not react chemically with other substances. FDA has highlighted types of food grade plastic that makes it possible to store any food-related items in a plastic-based container (Eldesouky et al. 2015). Most of these plastic types have been specifically engineered and designed to not only ensure food safety, but also to help retain the freshness and quality of food stored in them. Food spread mostly packaged in Polyethylene terephthalate (PET or PETE) and High-density Polyethylene (HDPE) plastics preserve the taste, flavour, aroma and colour of the food spread. This leads to a longer shelf life and preserves the quality of the product (Williams et al. 2018).

4.6 Correlation and Regression Analysis

Based on Fig. 8, it was observed that there is a correlation between the customers' knowledge, practices and attitude. The analysis showed a positive correlation coefficient (0.463) between customers' knowledge and attitude. This indicates that there is a positive and significant relationship between the customers' knowledge and attitude where the knowledge about the types of packaging materials among the customers will affect their attitude of the characteristics of selection of the packaging materials.

Next, for the regression analysis, there was a positive relationship between 1) customers' knowledge and practices and 2) customers' knowledge and attitude with $R = 0.547993$ for both analyses. This indicates that there is a strong relationship between the customers' knowledge with both the customers' practices and attitude.

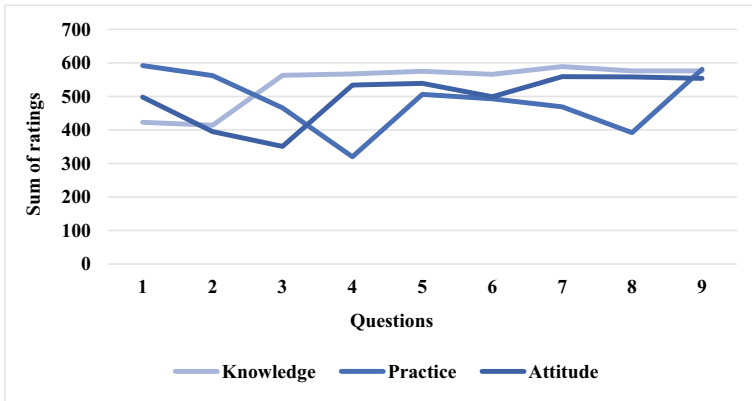


Fig. 8 Correlation between customers’ preferences in terms of the sum of ratings on the choice of the food packaging material

5 Conclusion

Overall, the survey was proven valid and reliable as 100% of the respondents effectively took part in the survey. The data obtained for the statistical analysis were also highly consistent and valid as the value was proven through Cronbach’s alpha coefficient ($\alpha = 0.957$) which was bigger than 0.8. More than 50% of the respondents agreed with the conception of plastic tube food spreads packaging. The packaging is important to determine consumer’s buying behavior. The choice of selection of the types and preference of the packaging of food spreads does not correlate with the consumers’ demographic with no significant difference ($p > 0.05$). Difference in gender, age, employment and marital status, does not affect the selection choice of the food spread packaging. The choice and preferences are based on the individual’s personal likings and experience of use of the current products in the market. Therefore, from the overall results of the survey, it can be concluded that plastic tube packaging can be a potential form of new packaging for food spreads products in the future market.

Conflict of Interest. The authors declare no financial or commercial conflict of interest.

Ethical Approval. This study does not involve any human or animal testing.

Informed Consent. Written informed consent was obtained from all study participants.

Appendix

Customers' Knowledge

Data on Customers' Knowledge on Packaging of Food Spreads.

Question	
1	Packaging is the main criteria that I consider when buying food products such as spreads
2	The current food spreads products in the market are packaged in glass or plastic jars
3	I think the type of packaging can influence the shelf-life and the quality of the food spreads
4	Plastic tubes can potentially replace jars in packaging of food spreads
5	I think current packaging of food spreads in the market provides high convenience to consumers
6	I think food spreads should be packaged in air-tight packaging
7	The packaging material used to package food spreads should be stable and not easily broken
8	The packaging material used to package food spreads should be able to be recycled
9	The packaging material of food spreads should be safe and do not cause harmful effect to consumers

Number and percentage of respondents based on their knowledge on food spread packaging.

Q	Yes		No		Uncertain	
1	111	73.03%	34	22.37%	7	4.61%
2	132	86.84%	7	4.61%	13	8.55%
3	119	78.29%	8	5.26%	25	16.45%
4	100	65.79%	22	14.47%	30	19.74%
5	107	70.39%	20	13.16%	25	16.45%
6	132	86.84%	7	4.61%	13	8.55%
7	143	94.08%	5	3.29%	3	1.97%
8	126	82.89%	10	6.58%	16	10.53%
9	147	96.71%	4	2.63%	1	0.66%

Data on Rating of Customers' Knowledge on Packaging of Food Spreads.

Question	
1	Packaging is not the main criteria that I consider when buying food products such as spreads
2	I think current packaging of food spreads in the market does not provide convenience to consumers

(continued)

(continued)

Question	
3	I prefer air-tight packaging for food spreads
4	I prefer packaging materials that are recyclable
5	I prefer packaging materials that are light-weight which easy to be used and handled
6	Food spreads should be packaged in a stable packaging where the material is not easily broken
7	The packaging materials used to package food spreads should be safe to be used and does not cause harmful effects to customers
8	I prefer packaging that are able to maintain the shelf-life and quality of the food spreads
9	I prefer packaging that do not take too much space during storage

Number and percentage of respondents based on their rating of knowledge on food spread packaging.

Q	Strongly disagree		Disagree		Uncertain		Agree		Strongly agree	
	1	37	24.34%	46	30.26%	12	7.89%	27	17.76%	30
2	37	24.34%	38	25.00%	33	21.71%	19	12.50%	25	16.45%
3	29	19.08%	8	5.26%	14	9.21%	30	19.74%	71	46.71%
4	26	17.11%	10	6.58%	15	9.87%	30	19.74%	71	46.71%
5	31	20.39%	8	5.26%	3	1.97%	31	20.39%	79	51.97%
6	37	24.34%	4	2.63%	5	3.29%	24	15.79%	82	53.95%
7	29	19.08%	6	3.95%	5	3.29%	27	17.76%	85	55.92%
8	34	22.37%	3	1.97%	7	4.61%	25	16.45%	83	54.61%
9	28	18.42%	6	3.95%	9	5.92%	36	23.68%	73	48.03%

Customers' Practice

Data on Customers' Practice on Packaging of Food Spreads.

Questions	
1	I find it very important to use clean spreading materials such as spoon or spread knife to spread the food spreads
2	I always forget to tightly close the lid of the jar after using the food spreads
3	I make sure to dry my spreading materials before using them
4	I do not bring my jars of food spreads during picnics because it is very inconvenient
5	I do not allow my children to use the food spreads by their own
6	I feel it is non-hygienic to dip our fingers in the food spreads
7	The transparent jars containing food spreads need to be stored in the area with minimal light exposure

(continued)

(continued)

Questions	
8	It is troublesome to wash the food spread materials every time after using the food spreads
9	The lid of the jar of the food spreads need to be immediately closed after used

Number and percentage of respondents based on their practice on food spread packaging.

Q	Yes		No		Uncertain	
1	144	97.74%	5	3.29%	3	1.97%
2	61	40.13%	66	43.42%	25	16.45%
3	119	78.29%	15	9.87%	18	11.84%
4	73	48.03%	53	34.87%	26	17.11%
5	67	44.08%	42	27.63%	43	28.29%
6	134	88.16%	9	5.92%	9	5.92%
7	110	72.37%	16	10.53%	26	17.11%
8	104	68.42%	30	19.74%	18	11.84%
9	132	86.84%	10	6.58%	10	6.58%

Data on Rating of Customers' Practice on Packaging of Food Spreads.

Questions	
1	I use clean spreading materials during spreading of the food spreads
2	I make sure to not have any direct physical contact with the food spreads
3	I do not have any storage problems for the food spreads
4	I do not consider the light exposure factors when storing the transparent jars containing the food spreads
5	I feel that it is not safe for children to handle the jars containing food spreads on their own
6	I feel it is very troublesome to wash the food spread materials every time after using them
7	I feel that it is inconvenient to use the jar of food spreads during any outdoor activities such as picnics
8	I always forget to close the lid of the food spread jar tightly after using it
9	I feel it is very important to immediately close the lids of the food spread jars after using it

Number and percentage of respondents based on their rating of practice on food spread packaging.

Q	Strongly disagree		Disagree		Uncertain		Agree		Strongly agree	
1	31	20.39%	5	3.29%	2	1.32%	25	16.45%	86	56.58%
2	28	18.42%	7	4.61%	14	9.21%	37	24.34%	66	43.42%
3	43	28.29%	11	7.24%	21	13.82%	47	30.92%	30	19.73%
4	59	38.82%	41	26.97%	31	20.39%	18	11.84%	3	1.97%
5	26	17.11%	24	15.79%	19	12.50%	40	26.32%	43	28.29%
6	29	19.08%	29	19.08%	18	11.84%	27	17.76%	49	32.24%
7	28	18.42%	35	23.03%	25	16.45%	23	15.13%	41	26.97%
8	50	32.89%	37	24.34%	19	12.50%	19	12.50%	26	17.11%
9	30	19.74%	7	4.61%	7	4.61%	24	15.79%	84	55.26%

Customers' Attitude

Data on Customers' Attitude on Packaging of Food Spreads.

Questions	
1	I prefer packaging material that are light-weight
2	I prefer packaging material that are stable and not easily broken
3	I prefer packaging that are odourless which do not affect the smell of the product
4	I prefer packaging that do not cause alteration of the product's taste
5	I prefer packaging materials that are environmental friendly
6	I prefer packaging that are recyclable
7	I prefer packaging that are easy to be used
8	I prefer packaging that provides unique functions
9	I prefer packaging that provides convenience in terms of storage and use

Number and percentage of respondents based on their attitude on food spread packaging.

Q	Yes		No		Uncertain	
1	135	88.82%	4	2.63%	13	8.55%
2	145	95.39%	6	3.95%	1	0.66%
3	144	94.74%	4	2.63%	4	2.63%
4	146	96.05%	5	3.29%	1	0.66%
5	140	92.11%	4	2.63%	8	5.26%
6	132	86.84%	5	3.29%	15	9.87%
7	145	95.39%	5	3.29%	2	1.32%
8	129	84.87%	10	6.58%	13	8.55%
9	143	94.08%	6	3.95%	3	1.97%

Data on Rating of Customers' Attitude on Packaging of Food Spreads.

Questions	
1	I would prefer food spreads packaged in plastic tubes because they are more light weight compared to jars
2	I feel plastic tubes are less stable and break easily compared to jars
3	I feel plastic tubes are less flexible which makes it difficult to be stored compared to jars
4	I would prefer food spreads packaged in plastic tubes because the spreads can be directly spread on the bread surface without the use of spoons or spread knife
5	I would prefer food spreads packaged in plastic tubes because it is more hygienic as the food are less exposed to contaminants from the environment or the spreading materials
6	I would prefer food spreads packaged in plastic tubes because the packaging can provide a longer shelf-life of the product compared to jar
7	I would prefer the plastic tubes made from biodegradable plastics that are safe for the environment
8	I would prefer the plastic tubes that are made from natural-based materials
9	I would prefer the plastic tubes to have the opening that functions as a spread material instead of a circular opening

Number and percentage of respondents based on their rating of attitude on food spread packaging.

Q	Strongly disagree		Disagree		Uncertain		Agree		Strongly agree	
1	20	13.16%	23	15.13%	42	27.63%	29	19.08%	38	25.00%
2	38	25.00%	33	21.71%	47	30.92%	21	13.82%	13	8.55%
3	51	33.55%	37	24.34%	37	24.34%	21	13.82%	6	3.95%
4	19	12.50%	20	13.16%	27	17.76%	36	23.68%	50	32.89%
5	21	13.82%	18	11.84%	23	15.13%	37	24.34%	53	34.87%
6	21	13.82%	26	17.11%	33	21.71%	33	21.71%	39	25.66%
7	23	15.13%	12	7.89%	21	13.82%	31	20.39%	65	42.76%
8	22	14.47%	12	7.89%	26	17.11%	26	17.11%	66	43.42%
9	24	15.79%	11	7.24%	22	14.47%	33	21.71%	62	40.79%

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Organisational Culture and Dynamic Marketing Capabilities in the Digital Age of Pandemic Crisis



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Abstract In the wake of the unprecedented global pandemic of Covid-19, most businesses are pressing on sustaining their business continuity as they are forced to create rigorous emergency plans to limit the impact of COVID-19. The focal point of this paper is to provide constructive reviews on the potential shifts in organisational culture and its interrelationship with dynamic marketing capabilities as a result of the digital acceleration brought by the pandemic crisis. The resource-based theory is utilised as a foundation to better understand the interrelationships between organisational culture (OC) and dynamic marketing capabilities (DMC). From this critical review, a conceptual framework was developed to grasp of the linkages between OC and DMC. The originality of this paper's conceptual framework suggests that organisations must enhance their flexibility to obtain competitive advantage and to keep up with the rapid acceleration of the digital transformation. Organisational culture is an essential set of guidelines that contribute to the organisation's cultural network. The combination resource-based and R-A theories emphasised the relevance of intangible talents, such as human abilities, as key components of supporting dynamic marketing capabilities. Organisational culture must support employees' spiritual development to have valued and rare workers, which can strengthen the organisational dynamic marketing capabilities and strategies. The paper's critical reviews may be of assistance to organisations in adapting and developing a dynamic work environment in the midst of the pandemic's rapidly approaching digital era.

Keywords COVID-19 · Pandemic crisis · Organisational culture · Marketing · Digitalisation

1 Introduction

Entering the second year of the Coronavirus 2019 (covid-19) pandemic, the world is still grappling with the widespread effects of this crisis. Not only is Covid-19 a

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concern to human health, but has become a significant threat to the survival of the majority of businesses. As of September 2021, the global total of Covid-19 cases had surpassed 223.4 million, with more than 4.6 million deaths reported. Due to the disruption of both professional and personal lives, all businesses are simultaneously compressed (Malaysia 2020). In light of the pandemic crisis that has gripped the business world, numerous studies have been prioritised to aid the organisation's sustainability. For this paper, the aim will be focusing on the interrelation between organisational culture and dynamic marketing capabilities in a digital acceleration world that has resulted from the chaos of the pandemic crisis. Organisational culture enables firms to produce valued market offerings, which is accomplished by shaping behaviours (Odhiambo et al. 2015). During the pandemic crisis, workplace culture has a profound swift effect because of the rapid working practices changing and has immediate influence on people behaviours. Thus, it is important to have critical reviews on the organisational culture particularly when confronted with an environmental jolt brought by the pandemic crisis, because change inevitably creates tensions within organisational culture as it redefines how things are done within the organisation (Busby 2017).

Restriction on movement order enforced by government compelled the great majority of businesses to allow for flexible working arrangements, notably working from home, therefore increasing their reliance on digitalisation. When it comes to purchasing, customers also have shifted to internet preferences due to the lockdown, safety and health reasons. Organisations striving to sustain better performance should cultivate and establish a culture that encourages market-driven strategies capable of providing superior value to customers. The key idea of this paper is to provide a critical review to the interrelation between organisational culture and dynamic marketing capabilities as it is a prevalent area of importance and research interest that can improve resource reconfiguration and deployment (Odhiambo et al. 2015), which improve competitive advantage of organisations. The terms of dynamic marketing capabilities have been defined by scholars (Hariandja et al. 2014) as capabilities that enable the organisation to identify critical market signals, generate new resources, implement effective responses to market change and exploit changes. Market sensing, learning, and market targeting or positioning are all subsets of this capability. Dynamic marketing capabilities have the potential to increase customer value in response to market changes (Ateke and Didia 2017; Ateke and Nwulu 2021; Fang and Zou 2009). Therefore, there is linkage between organisational culture change and dynamic capabilities that must be explored in order to understand how these associations may aid organisations in surviving and gaining a competitive edge during a pandemic crisis.

Dynamic marketing capabilities are a part of a resilient marketing strategy. In business, marketing strategy is the game plan for reaching potential customers that provides focus and direction and the ground rules for the game plan. On the other hand, organisational culture brings employees together by instilling a sense of identity with the organisation. In the marketing game plan, organisational culture helps to boost the spirit among employees in which the marketing game plan will be played. This paper's review is important, as the hastening of the digital age brought by the

pandemic crisis may bring pressure to both organisational culture and marketing strategies or mainly on the dynamic marketing capabilities. At the same time, crises may breed inventiveness, and well-executed ideas can catapult any business to new heights. Organisations that rely on their current digital successes may find themselves outmatched by those who invest in enhancing their digital capabilities for the post-coronavirus era (BDO United States 2020). Reviewing the interrelation between organisational culture and marketing capabilities will extend the existing knowledge in the current literature and calling for future research agendas.

2 The Context of Organisational Culture

“Culture is an abstraction, yet the forces created in social and organisational situations that derive from culture are powerful. If we do not understand the operation of these forces, we become victims to them” (Schein 2004). Prominence scholars in culture studies (Alvesson and Sveningsson 2007) further explained that language, stories, myths, and other artefacts evocative of strongly held meaning and beliefs are frequently used to express organisational culture. Shaping organisational culture is viewed as immensely challenging; in some cases, culture is uncontrollable. From these contexts, organisational culture can also be delineated as a collective of principles, standards, and beliefs that influence how people within organisations make decisions, business or operational approaches, allocate resources and guide behaviour and action.

Culture has a substantial impact on how individuals behave at workplace, including how they acquire and act on information, how they influence and are influenced by others, how they make decisions, and how they distribute resources (Busby 2017). Hence, organisational culture as significant for understanding deeper meaning and assumptions in organisations, which lie behind and guide behaviour (Alvesson and Sveningsson 2007). A recent study (Obrenovic et al. 2020) highlighted that COVID-19 had introduced changes in the organisational culture and workforce responsibilities. Organisations experienced challenges for productivity and sustainable business operations. Work changes in organisations, demonstrating a rising pattern toward a flexible hierarchy of control during a pandemic by delegating responsibility at all career stages inside the organisation. This somehow may affect the organisational culture. These approaches empower employees to be more self-sufficient and innovative in the face of uncertain workplace disruptions induced by the covid-19 epidemic (Obrenovic et al. 2020).

3 The Rise of Digitalisation During Pandemic Crisis

It is inevitable that the Covid-19 pandemic has resulted in an increase in the use of digital technology, owing to social distance rules and statewide lockdowns. The

term “digitalisation” refers to the current transformation of the sector by new digital technology (Antikainen et al. 2018). As a result of the pandemic spread, practically all regions, halting activities that need human interaction and gathering. Consequently, the vast majority of the people are interacting, engaging, and executing out their job tasks from their homes using the internet. When compared to pre-lockdown levels, internet service usage has risen from 40 to 100% (De’ et al. 2020). The use of mobile applications has exploded across a wide range of businesses.

Notably, food delivery and grocery shopping applications have seen an increase in clientele. In the United States alone, such apps have seen a 15% increase in total sessions over the previous weeks; other major European markets have also seen a significant increase in usage (Economic impact of COVID-19 2021). Digital technologies have evolved into a critical enabler of communication, allowing the connection between people in ways never seen before. As governments have urged residents to stay at home, more individuals have turned to their computer systems and electronic devices as lifelines and tools to replace their in-person activities online (Bajaj 2020).

4 Organisational Culture and Digitalisation in Pandemic Era

The rapid emergence of COVID-19 has forced organisations to make digital transformation an overnight strategic focus. A powerful technology core is crucial to the creation of a pandemic-proof organisation; nevertheless, the efforts would be futile unless the appropriate organisational culture is in place (Policy and response to coronavirus (Covid-19) 2020). However, these situations can be strengthened, resolved, and accelerated with the right culture in place. From the lens of organisational culture, businesses must recognise the importance of cultivating and implementing trust, patience, and mutual support, all of which are underpinned by a strong technological foundation, in order to maintain stability and growth during difficult times (Policy and response to coronavirus (Covid-19) 2020).

Due to the lockdowns, there has been an upsurge in the use of information systems and networks throughout all countries, as well as dramatic shifts in usage patterns and behaviour (De’ et al. 2020). Because of the pandemic, employees will require more time to acclimate to their new “normals.” For example, internet meetings are becoming more common, office work is transferring from the workplace to home, and new work practices are evolving. These transformations have taken place in practically all organisations, whether in industry, society, or the government, and they are continuing. In addition, the changes have occurred swiftly, giving organisations and individuals less time to plan, prepare, and implement new setups and arrangements. Consequently, they have been pushed to adapt, attempt, experiment, and discover new methods of doing things that were not previously available (De’ et al. 2020).

As a result of the pandemic crisis, digital haste has prompted a call for digital transformation, which is likely to result in numerous additional changes to modern society's functions. Through the proliferation of digital media, the world's economies have been consolidated into a single global marketplace. Massive digitalisation when combined with emerging technologies including such virtual or augmented environments has the potential to develop novel modes of culture-based experience and distribution, as well as profitable business models (Weston 2020). Drawing on the repercussions of the COVID-19 crisis, it has hastened digitalisation, that brings with it new opportunities for local and regional development as well as the risk of worsening disparities if not accompanied by appropriate measures. It has been argued that business leaders must consider how COVID-19 affects employee experiences and what they can do to maintain a positive organisational culture for their employees (Hult and Ketchen 2017). The challenge is that as more employees work from home, at least part-time, many of the variables that comprise corporate culture are no longer under the control of businesses in the same way or to the same extent as they once were (Hult and Ketchen 2017).

5 The Context of Marketing Strategies and Capabilities

All businesses are looking for answers on establishing customer values to stay in business for an extended time. It is possible for a company to get a competitive advantage over its competitors by developing a long-term relationship with its customers that sustains the business for the long run. Previous research has discovered a number of proposals for improving the performance of a company by adding value to its consumers' lives (Morgan 2012; Slater 1997; Jaakkola and Alexander 2014). From the perspective of the customer, value can be communicated to them in situations such as selling at a low price and when the company provides an excellent service that assists in reducing customer inconvenience (Payne and Holt 2001; Barrales-Molina et al. 2014). However, low prices, high-quality services, and the ability to make customers feel at ease during their consumption experience are not the only factors that businesses can depend on in creating value and rely on their customers. Other companies may also take similar actions, and this is no longer a one-of-a-kind situation anymore. Firms with limited resources may struggle to create superior customer value, which is supposed to allow the firm to differentiate itself from its competitors. This is especially true for firms with limited resources (Hunt and Morgan 1995; Ellis 2006).

In order to provide value to the customer, one of the most critical perspectives is to have a notion of marketing orientation that can assist firms in allowing customers to experience themselves as valuable customers to the firm (Hult et al. 2005). Marketing orientation as a company's involvement in creating, distributing and responding to market intelligence concerning customers' needs, competition strategies of competitors, the channel requirements of distributors and distributors; customers, and the external business environment (Ghauri et al. 2016). Marketing orientation could be

divided into three components: customer orientation, competitor orientation, and inter-functional orientation components, among others (Hartono et al. 2014). Identifying and understanding these market orientations can directly impact the market capabilities and marketing strategies that represent the firm's long-term competitive advantage (Indrasari et al. 2014). The different types of market orientation that will lead to the development of a marketing strategy must be understood to fully comprehend the function of market orientation and its implications. It is critical to maintain the business operations that allow the company to compete with other companies to provide better customer value to customers (Pradana and Reventiary 2016).

Because of the changing nature of technology, innovation and the market environment must keep pace with the changes, including changes in price, customer preferences, customer satisfaction, and others. This forces the company to be innovative from time to time, as well as to ensure that its marketing strategies are aligned with its market positioning (Susanto et al. 2018). (Hunt and Arnett 2003) noted that marketing orientation is a process and set of activities that are focused on continuously meeting the needs and desires of customers. To accomplish this, an organisation must have the capability to analyse the changing market environment to adapt to the changes, as well as the ability to understand its opportunities, strengths, and capabilities to meet the needs of the market, which leads to the formulation of better marketing strategies.

Scholars (Acikdilli et al. 2020; Vargo and Lusch 2017) have found that applying the theory has assisted in directing resource availability and capabilities towards improved firm performance while also distinguishing the firms from their competitors in the same industry. The information contained in market capabilities makes it difficult for competitors to copy because some of the capabilities are unique in the marketplace. These market capabilities are a combination of the knowledge and skills of the employees in the areas of new product development and the area of sales strategy.

6 Marketing and Digitalisation in Pandemic Era

The evolution of technology and computers has resulted in the change of organisational activities and processes, as well as the transformation of individuals. Through technology advance, companies have successfully developed a new type of business model online that enables them to connect with customers at any time and in any situation, thereby providing them with a satisfactory experience (Beverungen et al. 2017; Spohrer et al. 2017). Changes in this type of relationship and business model have ramifications throughout the entire market structure. Some industries, such as the tourism industry, entertainment industry, and education industry, have seen a shift in their business models due to digitalisation. While some businesses have made significant strides in digital transformation, others continue to face significant obstacles in providing more effective service to their customers (Strotmann et al. 2021).

The Covid-19 pandemic has altered how people engage in social activities, go to work, and make purchases (Santoki and Parekh 2020). Given the scope and depth of the pandemic, governments worldwide have responded with unprecedented levels of engagement and assistance, particularly in matters involving employees, businesses, and individuals. These include grants, travel restrictions, social engagement, and workforce activities (Reis et al. 2020). While the pandemic is ongoing, the continued use of digital tools has become necessary for everyone, including adults and schoolchildren, and has increased significantly. For example, Twitter reported a 23% increase in the number of daily activities users to 164 million by the second quarter of 2020. Facebook reported a 50% increase in total use across all of its services by the second quarter of 2020 (Innovation and in European SMEs 2019). Marketing and purchasing activities through online medium have increased and internet has become increasingly necessary for meeting human needs and desires during the pandemic. This is directly contributing to the acceleration of the digitalization era, and marketing strategies should capture these changes and be updated to reflect these developments and adapt accordingly.

Digitalisation converting analogue data into digital language (i.e., digitisation), which can develop business relationships between customers and companies, hence adding value to the entire economy and society (Fu et al. 2020). Digitalisation resulting in new or changes to existing activities. (Kaur and Chawla 2016). As a result of the pandemic, many employees across all industries are working longer hours to meet customer demands and keep up with the competition. Like other committed businesses, the lockdown has demonstrated that digital technologies can stimulate business while strengthening its position. In order to remain competitive in the digital age, businesses must adapt in order to keep up with customers who are becoming more flexible and inventive (Santoki and Parekh 2020; Fainshmidt and Frazier 2017). Increasing client acquisition, moving into new markets, and continuing operations even when the government is closed are advantages those businesses may reap from digitisation.

COVID-19 has placed significant pressure on costs, which has been cited as a common barrier to digitalisation by some organisations, but which can be avoided in many cases thanks to the availability of lower-cost flexible digital solutions that are more flexible (Fu et al. 2020). Additionally, for firms to adapt to a digital maturity before COVID-19 is considered one of the major key success factors to many firms that can still stand strong, survive, and maintain relevance in the market until today. Some other firms may also have successfully implemented digital solutions after facing the actual effect of the pandemic and made the necessary organisational changes. It can be ensured that the right marketing strategies, the stability, and the quality of a company's leadership can contribute as the reason why the companies push itself to digitalise and transform its technology and whether the company is classified as a survivor or a failure. The scale, speed, and depth of change that the pandemic has been brought by are considered beneficial for businesses that have embarked on a digitally led transformation amidst pandemic crises. When digitalisation is implemented in line with appropriate management practises, the effects of digitalisation can last for a long time after the pandemic has passed.

7 The Conceptual Framework of Organisational Culture and Marketing Capabilities in Digital Age

The interrelation between organisational culture and marketing dynamic capabilities are still under studied and limited in the existing literature. Therefore, this paper provides critical reviews on the linkage between organisational culture and marketing dynamic capabilities and organisations could take opportunities from these association particularly during the hastening of digital age in pandemic crisis. From these critical reviews this paper proposed a conceptual framework of organisational culture and marketing capabilities in the digital age, as illustrated in Fig. 1. A more profound grasp of these linkages may assist organisational survival amid the hastening digitalisation during the pandemic crisis.

A combination of resource-based theory and resource-advantage theory is used as a foundation of this paper to better understand the interrelationships between organisational culture and dynamic marketing capabilities. The concept of dynamic capabilities stems from the premise that the services that a firm’s resources can deliver are just as crucial to competitive advantage as the resources themselves (Barney 1991). In addition to that, marketing capabilities are integrative processes that enable the application of a firm’s skills, knowledge, and resources to market-related needs, thereby enabling value creation and competitive advantage (Herzig and Karlsson 2017). Both dynamic capabilities and dynamic marketing capabilities are both centred on competitive advantage. Hence, understanding the interrelationship between dynamic marketing capabilities and organisational culture is worth understanding from the combination of resource-based theory and resource-advantage theory perspectives.

The resource-based theory emphasised that a firm’s resources are utilised to develop plans for increasing the organisation’s overall efficiency and performance, and these strategies include three primary resources strategies: physical or tangible

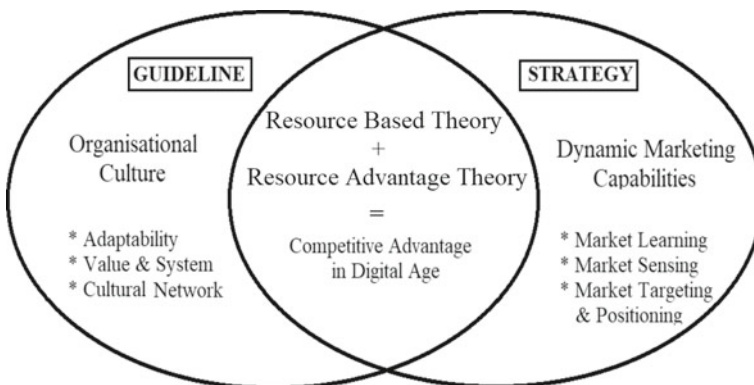


Fig. 1 The conceptual framework developed by this paper

resources (comprise the organisation's physical assets); human capital or intangible resources (collective resources possessed by individuals and/or groups such as human skills, capabilities and competencies); organisational capital resources (include the organisation's formal structure, planning, controlling, and coordinating systems, formal and informal reporting and planning systems, as well as informal relationships between groups within the organisation and external organisations in a competitive environment) (Barney 1991; Murray et al. 2011). Resource-based theory commonly explores the context of dynamic capabilities, which may be too general to grasp the issue related explicitly to dynamic marketing capabilities (Blesa and Ripolles 2008). Therefore, this paper combined the resource-based theory and the resource-advantage theory to extend further the understanding of dynamic marketing capabilities from the notion of competitive advantage and progress to its relationship with organisational culture. The resource-advantage theory is also commonly known as the R-A theory.

R-A theory extends resource-based theory in a comprehensive and market-based perspective (Barney 1991). By elucidating how resources relate with the exchange process in competitive marketplaces, the R-A theory advanced toward a conventional theory of marketing (Grimmer et al. 2015). Scholars (Amirul et al. 2021) stated that market capabilities are difficult to duplicate and serve as a competitive advantage for a company. A similar point was raised by other scholars (Prieto et al. 2009) who discussed market capabilities that facilitate knowledge of customers and product development and adaptation. They also discussed appropriate marketing tactical elements that can be used to target customers with differentiated products. Based on the R-A theory, the current research believes that its strong market orientation directly influences a firm's marketing strategies and market capabilities. This in turn directly impacts the firm's performance, which distinguishes it from its competitors.

Both resource-based theory and resource-advantage theory stipulated that a firm's unique internal resource arrangement can serve as a foundation for sustainable competitive advantage while also separating it from competitors and emphasising that its skills are difficult to duplicate and rare. It's been argued that sustaining a competitive advantage is not the result of a single or isolated component but rather the result of combining human capital elements such as developing stocks of skills, strategically appropriate behaviours, and supporting people management systems (Failed 2021).

Competitive advantage from resource-based and R-A theories emphasises the value of human capital, which revolves around managing people. People management and the aspect of organisational culture are inextricably intertwined and cannot be separated. Likewise, marketing cannot be separated from the organisation of people who play important roles in marketing-related plans, activities, strategies or issues. For example, in business, marketing strategy is the game plan for reaching potential customers that provides focus and direction and the ground rules for the game plan. On the other hand, organisational culture brings employees together by instilling a sense of identity with the organisation and helps to boost the spirit among employees.

Reviewing the available literature of dynamic capabilities antecedents, in general, demonstrates that organisational culture plays a significant role in developing such

capabilities (Hunt and Morgan 1995; Barney 1991; Sidney and Winter 2002). Numerous factors influence marketing strategies for product promotion, such as target market, budget, economy, and competition (Day 1994). Culture also significantly impacts consumer preferences, although this factor is frequently overlooked (Day 1994). Given the research demonstrating the effect of organisational culture on dynamic capabilities, there is a possibility that organisational culture may have an influence on dynamic marketing capabilities. In addition to that, organisational members' collective learning and coordinated effort must be developed for dynamic capabilities. The social climate of an organisation, which determines attitudes, behaviours, and interpersonal connections among its members, may act as a catalyst for the development of dynamic abilities. Scholars (Blesa and Ripolles 2008) remarked that the influence of organisational culture on dynamic capabilities and dynamic marketing capabilities would be similar in some ways to that of dynamic capabilities on dynamic marketing capabilities (Barney 1991).

As seen in Fig. 1, the conceptual framework provided in this study suggested that organisational culture is important for guiding work behaviour in order to achieve competitive advantage in the accelerating digital age brought by the pandemic crisis. Since employees were required to work from home, the government's lockdown and movement restrictions and the environmental shock caused by the pandemic have increased internet use. Human interactions, in particular, are highly reliant on the internet for access to communication applications that enable communication via messaging, voice calling, or text messages, as well as video and media sharing. Therefore, employees were faced with new ways of working, connecting with colleagues and how the job tasks can be done to keep business operations running. As discussed earlier, culture significantly influences how people behave at work, including accessing and acting on information (Busby 2017).

Nevertheless, as digitalisation accelerates in the event of a pandemic, sudden struggles and shifts in work patterns may alter people's behaviour, thereby affecting organisational culture. Adaptability is a critical component of successfully navigating the digital transformation process. People and businesses must respond effectively to the current situation. Recognising the significance of organisational culture, it is evident that the organisational culture that motivates people in the workplace should not be neglected to strengthen the dynamic marketing capabilities. Thus, efforts should be directed on both improving the people inside the business as well as the dynamic marketing capabilities. Another critical component of organisational culture is the value and system that underpins the organization's culture. The ideal of organisational values shape its culture. Individuals and organisations (collectively) have value systems that shape their attitudes, behaviours, and resource allocation decisions. Another considerable aspect in organisational culture is cultural network. Organisational networks have the potential to affect cultural change, and the terms 'structural' and 'relational', which are frequently used to conceptualise network features, may also provide a helpful conceptual framework for understanding cultural change (Whelan 2016).

Figure 1 illustrated that dynamic marketing capabilities as an important strategy to obtain competitive advantage in the digital age. During the hard time of pandemic

crisis, which hastened the digital transformation, all businesses are looking for answers on establishing customer values to stay in business for a longer period of time. It is possible for a company to get a competitive advantage over its competitors by developing a long-term relationship with its customers that sustains the business for the long run. Previous research has discovered a number of proposals for improving the performance of a company by adding value to its consumers' lives (Morgan 2012; Slater 1997; Jaakkola and Alexander 2014). From the perspective of the customer, value can be communicated to them in situations such as selling at a low price and when the company provides an excellent service that assists in reducing customer inconvenience (Payne and Holt 2001; Barrales-Molina et al. 2014).

Firms with limited resources may struggle to create superior customer value, which is supposed to allow the firm to differentiate itself from its competitors. This is especially true for firms with limited resources (Hunt and Morgan 1995; Ellis 2006). In order to provide value to the customer, one of the most critical perspectives is to have a notion of marketing orientation that can assist firms in allowing customers to experience themselves as valuable customers to the firm (Hult et al. 2005). Marketing orientation can be defined as a company's involvement in creating, distributing and responding to market intelligence concerning customers' needs, competition strategies of competitors, the channel requirements of distributors and distributors' customers, and the external business environment (Ghauri et al. 2016). Marketing orientation could be divided into three components: customer orientation, competitor orientation, and inter-functional orientation components, among others (Hartono et al. 2014). Identifying and understanding these market orientations can directly impact the market capabilities and marketing strategies that represent the firm's long-term competitive advantage (Indrasari et al. 2014).

The different types of market orientation that will lead to the development of a marketing strategy must be understood to fully comprehend the function of market orientation and its implications. It is critical to maintain the business operations that allow the company to compete with other companies to provide better customer value to customers (Pradana and Reventiary 2016). Because of the changing nature of technology, innovation and the market environment must keep pace with the changes, including changes in price, customer preferences, customer satisfaction, and others. This forces the company to be innovative from time to time, as well as to ensure that its marketing strategies are aligned with its market positioning (Susanto et al. 2018). The process of marketing orientation is set of activities that are focused on continuously meeting the needs and desires of customers (Hunt and Arnett 2003). To accomplish this, an organisation must have the ability to analyse the changing market environment in order to adapt to the changes, as well as the ability to understand its opportunities, strengths, and capabilities in order to meet the needs of the market, which leads to the formulation of better marketing strategies. Studies by Acikdilli et al. (2020) and (Vargo and Lusch 2017) have found that applying the theory has assisted in directing resource availability and capabilities towards improved firm performance while also distinguishing the firms from their competitors in the same industry. The information contained in market capabilities makes it difficult for competitors to copy because some of the capabilities are unique in the marketplace. These market capabilities

are a combination of the knowledge and skills of the employees in the areas of new product development and the area of sales strategy.

There are three important elements of dynamic marketing capabilities in this paper's conceptual framework (see Fig. 1). First is market learning capabilities in one of the dynamic marketing capabilities elements would need a strong culture seeking to identify new opportunities, and to allow for repetition to integrate information from the external environment in pursuit of improved effectiveness (Grimmer et al. 2015). Another element is market sensing, which refers to identifying and selecting feasible opportunities for change; and transformation which is concerned with the new service implementation (Hariandja et al. 2014). In line with this perception, businesses are scrambling to discover methods to adapt to the fast-changing business environment. Organisational culture is important in reshaping business to keep up with these changes and develop service innovation that is seen as a part of the dynamic capability. Next is market targeting or the positioning capability which is described as a company's ability to find alternative opportunities and afterwards select acceptable market targets that are matched for the greatest possible effect on the market (Hariandja et al. 2014). The importance of organisational culture in the success of dynamic marketing capabilities is that marketing strategies must be consistent with organisational culture. Strategies that are incompatible or conflicting with the organisational culture are likely to encounter opposition and resistance and may even prove to be a barrier to the achievement of the organisation's overall strategy.

8 Conclusion and Future Undertaking

Organisational culture is widely accepted to be defined as the deeply ingrained values and beliefs shared by employees in an organisation that serve as the guiding principles that are most important to how the organisation operates (Busby 2017; Schein 2004; Alvesson and Sveningsson 2007). Thus, in the hastening digitalisation, organisations must recognise the necessity of cultivating and implementing trust, patience, and mutual support, all of which are supported by a solid technological foundation to maintain stability and success through difficult times (Policy and response to coronavirus (Covid-19) 2020). Organisational culture underpins and guides behaviour in organisations, which shapes the workday experience of every employee (Busby 2017; Schein 2004; Alvesson and Sveningsson 2007). The conceptual framework of this paper proposes that organisations need to increase their adaptability during the acceleration of digital transformation. Organisational culture is an essential set of guidelines that must be followed to improve organisational people values and systems while also strengthening the organisation's cultural network.

As resource-based and R-A theories have also stressed the importance of intangible skills, such as human abilities, they are critical components of supporting dynamic marketing capabilities. When it comes to executing marketing tactics, having valued and rare workers needs the backing of an organisation's culture to

foster employee spiritual development. In addition, the availability of digital solution enables organisations to adopt them with speed and agility which was not made possible before the pandemic enable organization to be agile adopt compressed decision making during the crisis. Hence, changes in organisational culture during the crisis in dealing with employees, consumers and suppliers in order to deliver enhanced functionality, performance and competitiveness has shown how the market evolved and transformed to be digitally led transformation. With the right leadership and organized workplace culture that is aligned to the management practices, the organization can remain in the industry even after the pandemic has ended.

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Designing Value Proposition for Indigenous Inspired Spa Strategic Marketing: A Research Proposal



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Abstract In Malaysia, the wellness tourism industry is at a growth stage of development and gradually gaining popularity among the public. Indigenous wellness tourism is a relatively new notion for tourism stakeholders, and it has not yet been prioritized to promote local tourism potential. As the demand of recipients of services offered by the indigenous-inspired spa is not a unified whole, spa owners must proportionate the value of their service and products in order to make the indigenous-inspired spa more competitive in the world wellness-related market. To deliver the most outstanding and unique solution by presenting indigenous-inspired spa products and services, the spa owner must address customer expectations to eliminate their necessity as a wanted product and service that might potentially support numerous value propositions for the clients. As a response, this study aims to look into the activities of the indigenous-inspired spa to portray value to its clients. The methodology that will be used is on-site observation and in-depth interviews with Indigenous-inspired spa-goers and indigenous-inspired spa employers of the two selected case studies. Practical operational information on each element can be used to develop the best marketing strategies model for the Malaysian indigenous-inspired spa sector prospects, eventually contributing to indigenous heritage preservation.

Keywords Wellness · Tourism · Indigenous-Spa · Marketing

1 Introduction

Malaysia is known as a famous vacation destination in Asia as it offers an extensive variety of wellness tourism packages to the market. Generally, spa centers in Asia are designed towards pampering more than healing (Halim et al. 2017). Spa sectors are not a revamped service business in Malaysia today, as the country has seen a rapid rise of numerous spa concepts. Due to various health and wellness tourist packages, this service was recognised and promoted (Yusoff 2010). According to the Malaysian

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intelligent spas study, the overall number of spas has expanded by more than 200 percent since 2002; precisely, more than 170 spas are currently operating and earning an average of RM 1,000 daily (Hashemi and Hosseiniyan 2014). Interestingly, facts revealed that there is much treasure trove of healing modalities available in Malaysia inherited from generation to generation, which has been practiced widely in western countries.

The current trend for spas is to be as creative and unusual as possible. According to the Global Spa Summit (2011), the integration of cultural elements into the spa and wellness experiences stimulated rapid movement within wellness tourism. Malaysians have long been familiar with the types of spas found in bordering Thailand and Indonesia (Wan Yusof 2016). For wellness tourism stakeholders, the indigenous-inspired spa is a relatively new concept, and it has not yet been a priority to boost local tourism potential. Harrison (2013) revealed that indigenous-inspired spa treatments are becoming more sought out. However, academic researches on Malaysian indigenous-inspired spa are still limited in comparison to other conventional spa concepts.

Malaysia Department of Orang Asli (2017) revealed that there is quite a number of health and wellness registered companies owned by Orang Asli, including Imah Enterprise (beauty spa) and Bah Chik Sentuhan Asli, which provide a service of reflexology massage. Apart from that, there is an established luxury spa in Malaysia, which brings the original people concept named Spa Village located at Cameron Highland, Pahang and Tanjong Jara, Dungun, Terengganu. The Spa Village central idea has always been to acknowledge the region's healing culture.

Since the indigenous-inspired spa's service receivers market is not homogeneous, it is imperative that the spa owner or stakeholders target specific types of customers. In this situation, an indigenous-inspired spa must find strategies to become more attractive on the global wellness market as well as compete successfully. In this regard, client-value-providing tactics can facilitate this goal to ensure the spas strive to give fresh and unique solutions to the clients. The previous study addresses the lack of value proposition, which can be adopted for marketing activities for indigenous-inspired spa business (Agrwal and Baranwal 2012). For that reason, the indigenous-inspired spa does not endeavor to cater to the entire market, seeing the futility of such efforts. Hence, this study implements to explore the activities of an indigenous-inspired spa in order to deliver value to its clients.

1.1 Purpose of the Probe and Inquiry Questions

This study aims to develop the value proposition for the business model in the indigenous inspired spa. This could enable indigenous inspired spa to be more competitive in the wellness tourism industry. Therefore, the inquiry questions for this research are:

- 1) What are the value and concepts of the successful indigenous-inspired spa products or services concerning established standards?
- 2) How the consumer demands influence the market growth of indigenous-inspired spa services and products?
- 3) Why is it important to have indigenous inspired spa in the Malaysia wellness tourism industry?

2 Literature Review

2.1 *Snapshot of Wellness Tourism*

Wellness tourism was described as any travel aimed at maintaining or improving one's own well-being (Global Wellness Institute 2019). Wellness tourism has grown in popularity in recent years, becoming one of the fastest-growing segments of the hospitality and tourism industries. According to the Global Wellness Institute (2019), wellness tourism expenditures accounted for about 14% of total domestic and international tourism spending in 2012, directly supporting 11.7 million employment and adding 1.8 percent to global gross domestic. A growing number of wellness-conscious customers are incorporating healthy habits and activities into their vacations, in part to counteract a plethora of unpleasant travel-related health impacts, including jet lag, inadequate sleep, and disruption of healthy eating and exercise routines.

As a byproduct, spas and wellness facilities have grown to be significant revenue generators for hotels, resorts, and destinations. The wellness industry and spa sector are marketable and have a bright future ahead of them as economic development, globalization, urbanization, health concerns, and religions become driving forces (Othman et al. 2015). As Foster (Foster 2006) notes, spas have developed into a significant profit center for the hospitality business, particularly in the hotel sector. The spa is a Latin acronym for 'Salus per aquam,' meaning health via water. Additionally, it is classified as both water-based and non-water facilities that provide various therapies, including health, aesthetic, medicinal, and relaxation. Spas are frequently marketed in coastal areas or historic sites due to their geographic dispersion.

2.2 *Indigenous-Inspired Spa*

Spa tourism is prevalent around the world. Tourism, wellness, and spa are all relatively new trends that are growing at a rapid pace these nowadays. According to Ell (2015), the wellness industry's rise is fueled by a growing interest in wellness as workplaces become more stressful. The spa sector grew out of a slew of small enterprises and cottage industries that existed in parallel in many different areas globally, primarily based on local bathing, beauty, wellness, and healing activities (Koncul

2012). Sharing culture through storytelling helps preserve cultural traditions, mainly since many cultures rely on oral history (Hodge et al. 2002). Similarly, the concept of oral history is relevant to spa tourism.

Yanping (2006) deems storytelling vital in integrating culture with spa objects such as hot springs or spa temples. Today traditional Indigenous healing is indeed being shared more broadly. As the importance of such practices has been resurrected, the artistry of traditional Indigenous healing has entered a period of increasing popularity (Struthers et al. 2004). While Indigenous treatments are increasingly being incorporated into spa treatments, some opponents contend that cultural issues should be a more essential aspect of tourism planning (Donohoe 2011). However, the literature on wellness tourism, specifically regarding the indigenous-inspired spa market segmentation for the wellness sale indicator, leaves unanswered questions. Theoretically, the indigenous-inspired spa offers various facials, massages, skincare, and body treatments emphasizing Native Malaysian traditional ways and beliefs.

2.3 Value Proposition Canvas

In strategic business planning, the value proposition concept plays a vital role. Collectively, the value proposition is a statement that summarizes a business strategy and highlights its unique competitive advantage that will deliver to the target customers (Payne and Frow 2014). The dynamic element of value propositions has recently been highlighted, and interest in the notion has resurfaced, mainly due to spa and wellness center operations. According to Tamilmani et al. (2020), companies that focus on niche products or services, offering a unique value proposition to consumers through innovative business models, can reach the road to profitability much earlier.

Value proposition canvas serves as a mechanism to discover the demands of clients and develop the products and services based on the customer expectation (Osterwalder et al. 2014). As illustrated in Fig. 1, the analysis of the value proposition and customer segment is carried out in depth and arranged in six elements namely customer pains, customer gains, customer jobs, products and services, pain relievers as well as gain creators. Some properties could be considered for forming the spa's roadmap to gain the products and services in order to meet consumers' expectations and deliver a distinctive product or service. To meet client requirements in the desired market niche, each value proposition should meet certain unique and specialized criteria.

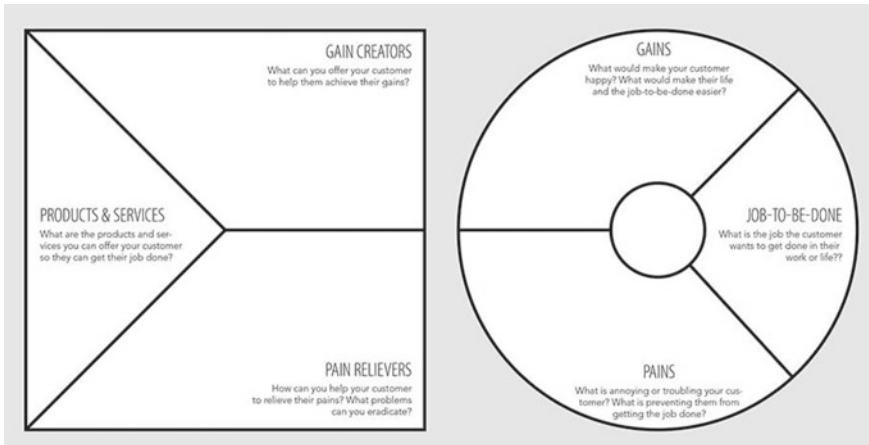


Fig. 1 Value proportion canvas

3 Study Framework

Modern spa enterprises provide a wider range of spa services that require them to seek the value of proposition of the client that can help them to acquired new market segments (Szromek and Wybrańczyk 2019). An opportunity to find the optimal form of a value proposition could be to view the spa product from the perspective of a business model (Osterwalder and Pigneur 2010). Thus, learning about the value for the client of this service sector helps create a new business model more adapted to the client’s requirements (Johnston and Lawrence 1991). Particularly significant may be the penetration of elements of the spa product structure and model components in the context of traditional and modern spa offers. The category of value for the client as one of the elements of the business model is a very capacious concept.

The development of the value proposition for the indigenous inspired spa undertaken in this study required a familiarization with the expectations reported by the client and owner. However, this study will extend the analysis of the needs of current owner and customers as well as the potential customer (spa-goers) in spa industry. The purpose framework of this study was formulated to recognize and identify the possibility of key values from the owner and spa-goers of spa enterprise. Consequently, this input can be used to build a competitive advantage by expanding the value proposition for the business model in the indigenous inspired spa and at the same time seeking opportunities for new potential customer segment for this industry that could enable indigenous inspired spa to be more competitive in the wellness tourism industry (Fig. 2).

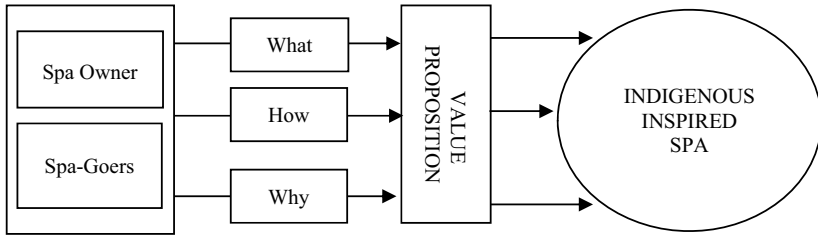


Fig. 2 Proposed study framework

Table 1 Construction of interview protocol based on a Golden Circle Model

Construct	Description of spa owner	Description of spa-goers
What	<ul style="list-style-type: none"> • What does the indigenous inspired spa do? • What value does the indigenous inspired spa provide? 	<ul style="list-style-type: none"> • What does the customer think the indigenous inspired spa does? • What can be done to reinforce the value offered to the customer?
How	<ul style="list-style-type: none"> • How does the indigenous inspired spa perform its key activities? • How does the indigenous inspired spa provide value? 	<ul style="list-style-type: none"> • How does the customer think the indigenous inspired spa performs its key activities? • How does the indigenous inspired spa communicate its value to the customer?
Why	<ul style="list-style-type: none"> • Why does the indigenous inspired spa perform these activities? • Why does the indigenous inspired spa provide value? 	<ul style="list-style-type: none"> • Why does the customer think these activities are performed? • Why does the customer value the indigenous inspired spa over its competitors?

4 Proposed Research Methodology

The activities of the indigenous-inspired spa will be investigated using a qualitative research approach in order to deliver value to its clients. A qualitative research approach allows researchers to collect all the information of certain elements, which aids in developing a greater understanding of the circumstances (Hodges 2011). A purposive sampling strategy will be performed in this study. The methodology that will be used is on-site observation, and in-depth interviews with visitors (spa-goers) and employer of the two selected case studies. The first case study is Spa Village Cameron Highland, Pahang, and the second case study is Spa Village Gaya Island, Sabah. The reason for the chosen selected spas as case studies is both claims are indigenous-inspired spas. Each spa has similarities in facilities and service provided.

To construct a compelling value proposition, it will be critical to assess the problem, appraise whether the breakthrough is unique and compelling, measure prospective consumer adoption using the gain/pain ratio, and finally build the value proposition. In order to gather the data, the interview protocol will be developed based on a Golden Circle Model, which consists of three construct namely what,

how and why (Table 1) as well as four fundamental questions such as innovation, marketing, production, and recovery. The thematic analysis and coding will be assisted in analyzing patterns or themes within the collected data.

5 Conclusion

The wellness tourism sector is only focused on promoting a single well-known culture due to a lack of information and previous research on the concept and potential market of the indigenous-inspired spa. Spa development and operation are inextricable to cultural and heritage assets. The idea of segmenting the indigenous-inspired spa market is to separate a heterogeneous market into relatively homogeneous divisions. Therefore, the results will benefit the stakeholder and drove organizations in the wellness tourism industry to consider practical operational information on value proposition in developing marketing strategies specifically for the Malaysian indigenous-inspired spa sector. Practicing indigenous traditions through sharing via a spa setting will help or has the potential to promote and preserve indigenous heritage. Besides that, properly planned and managed wellness tourism will offer a means of poverty alleviation and positive community development. This work is the first of its kind exploring spa-goers and spa owner experiences who are involved in the Malaysian indigenous-inspired spa sector.

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Online Insurance Purchase Intention and Behaviour among Chinese Working Adults



Naeem Hayat, Noor Raihani Zainol, Tanvir Abir, Abdullah Al Mamun, Anas A. Salameh, and Munirah Mahshar

Abstract The study examines the customers' perception towards buying insurance online with factors taken from the theory of planned behavior like attitude, subjective norm, and perceived behavioral control among the Chinese working adults. The research collected cross-sectional survey-based data. The collected data analyzed with the structural equation modeling with SmartPLS 3.1. The study's results offer empirical support that internet trustworthiness positively influences the attitude towards making purchases online, normative structure positively and significantly impacts the subjective norms towards internet purchase, and user internet self-efficacy significantly influences the perceived behavioral control for the internet purchase. The results confirm that the attitude and perceived behavioral control positively and significantly influence intention to purchase insurance online. Intention to purchase insurance online significantly predicts the behavior of purchasing insurance online. Current research establishes significant empirical evidence that the behavioral attitudinal beliefs build on the behavioral beliefs towards the making purchase over the internet. The subjective norms for internet purchase are not supportive, and consumers are finding less social support to buy financial products over the internet. Current work extends the theory of planned behavior with the behavior beliefs that formulates the attitudinal beliefs that leads to the development of the internet and purchase behaviors.

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Keywords Online purchase · Insurance · Theory of planned behavior · Purchase intention · Trust · Beliefs · Internet

1 Introduction

In the last decade, the retail industry witnessed a shift towards using multiple-channel retail and online retailing, becoming popular in recent times (Nawi et al. 2020). The information computer technology (ICT) driven retailing empowers the consumer to shop at convenience and with the ability to compare multiple offers in a single point of time (IWS (Internet World Stats) 2020). Internet buying is becoming the norm in recent times. The adoption of internet purchasing brings the efficiency of delivery and easy interaction with the seller; however, the quality of technology infrastructure and payment over the internet are crucial aspects of the internet purchase systems (Gurung 2016; Hsu et al. 2006). Availability and access internet by computer and mobile phones empowers the public to use the internet for online shopping (Ha et al. 2019). Online purchases became a part of daily life for purchasing airline tickets, booking hotel rooms, movie tickets, and general consumer products (Ariffin et al. 2018). However, despite the crucial growth of online shopping, online financial products have not seen much growth yet. Certain problems and challenges have emerged, like user information security, payment issues, and product quality-related issues (Adapa and Roy 2017). The consumer vulnerability in online shopping remains a significant issue in accepting online shopping for financial products (Arora and Sahney 2017; Bashir and Madhavaiah 2015).

Online shopping offers multiple notions of consumer behaviors based on the trust and social norms towards internet buying, impacting the individual's personal inclination towards buying online (Adapa and Roy 2017; Arora and Sahney 2017). The trust facilitates the confidence that the prospective consumer has in the system and payment made securely (Aboelmaged 2010). The social norms promote internet buying acceptance as a suitable standard in the community (Ariffin et al. 2018). Recently, buying over the internet or e-commerce has grown by 20% yearly, and non-traditional buyers are using the internet to sell their products and services like financial products (Arora and Sahney 2017; DataPortal 2020). Moreover, e-commerce is increasing by 10% monthly with the advent of the COVID-19 influences online purchase behavior (DataPortal 2020). The rise in internet base consumer buying may touch the US\$ 5 trillion by 2021 (IWS 2020). E-commerce may become 20% of the total global trade volume (DataPortal 2020).

With the rise in internet commerce acceptance worldwide, financial products' purchase remains slow on the internet (Anouze et al. 2018). The acceptance of banking services purchase and other financial services purchase over the internet remain unexplored in most of the world like the buying insurance contributes towards the saving and economic growth of a country (Tariq and Md Husin 2019). However, no such study explored the buying of insurance products and services on the internet. Many insurance firms start using the internet to contact and sell insurance products

(Aziz et al. 2019). The insurance firms need a thorough understanding of consumer behaviors to adopt insurance purchases over the internet. As the perception, attitude and behaviors are interlinked, and perception of internet buying promotes the right attitude to triggers the behaviors towards buying insurance products over the internet (Ajzen 1991; Masoud 2013). Therefore, the current study aims to extend the intention to purchase and purchase behavior towards insurance on the internet among the Chinese samples with planned behavior theory. TPB extended with the three respective behavioral beliefs that impact attitudinal beliefs. The following section of the paper discusses the relevant literature and the hypothesis's development for the research work. The following section, summaries the method adopted for the research and results of the research were reported. Then, for the last section offers the discussion and conclusion of the research work.

2 Literature Review

2.1 Theory of Planned Behaviour

Theory of Planned Behaviour (TPB) was developed to explicate factors that influence the intention and behaviors with the three essential factors of attitude, subjective norms, and perception of behavioral control (Ajzen 1991). These factors facilitate or hinder the performance of particular behaviors. TPB was an extension of the theory of reasoned action (TRA) and widely utilized to explore social psychology-related behaviors (Ariffin et al. 2018; Cheah et al. 2014). Behavioral beliefs impact the attitudinal state like attitude towards behavior, subjective norms for behavior, and behavior control under exploration (Bashir and Madhavaiah 2015). A TPB review exposed many studies that utilized the TPB to explore the purchase intention and purchase behaviors towards technology adoption and adoption of online purchases (8, 18). TPB remains the prime theory to explore and explain the intention and behaviors, but three attitudinal states evolved based on certain beliefs. The trust and normative beliefs promote the attitudinal and social normative beliefs (Cheah et al. 2014; Geber-Persson et al. 2016). Purchase of financial products is much different from buying general consumer products and services (Bashir and Madhavaiah 2015; Aziz et al. 2019).

The security and perception of social acceptability help individuals purchase products or services online (Gurung et al. 2016). Trust helps build confidence among online shoppers to engage in online shopping for daily consumption (Ha et al. 2019), or even luxury products (Geber-Persson et al. 2019). Prevailing social norms facilitate the acceptance of new technology like internet shopping (Godey et al. 2016). However, individual-level experience and confidence in one's ability promote the intention to use the internet for online shopping (Chen and Lin 2019). Personal internet-based self-efficacy harnesses the attitude to accept internet services (Chiu et al. 2005). Therefore, for the current study, we incorporate the belief of trust

impacting the attitude towards internet purchase, normative structure impacting the subjective norms, and personal internet self-efficacy influence the perception of control behavior. Therefore, these study intent to explore the customer intention and behavior towards buying insurance online with the TPB. Then, extending the TPB with the belief of trustworthiness, normative structure, and self-efficacy.

2.2 Internet Trustworthiness

The Internet is considered risky and has a perception of security harnessing online purchases (Bashir and Madhavaiah 2015). Trust is the perception of having low risk and meeting consumer expectations (Aziz et al. 2019). The consumer privacy is essential in internet purchases, and consumer shows higher trustworthiness if the perception of risk and privacy protection is higher (Geber-Persson et al. 2016). Young consumers are more inclined to use online purchases as young consumers trust online shopping (Chen and Lin 2019).

2.3 Normative Structure

The normative structure represents the collective self-cognition that prevails in a community or segment of society (Zheng et al. 2018). The peers and family cognition perceive what others perceive as acceptable and enable a positive perception of the behavior (Godey et al. 2016). The general normative structure facilitates the adoption or to engage of new behaviors. The cultural context and collective norms build the normative structure (Cheah et al. 2014). For internet purchases, online buying's acceptability rests on the prevailing online buying in society or around the particular context (Arora and Sahney 2017). The normative structure offers the cultural norms in general that offer acceptability or rejection to exhibit the specific behaviors under exploration (Zheng et al. 2018).

2.4 Internet Self-efficacy

Self-efficacy depicts the perceived ability and interest based on self-appraisal to perform the task at hand (Yabarra and Trafimow 1988). The use of technology requires the specific capabilities to use the technology with minimum assistance. Computer self-efficacy describes the individual attitude towards using the computer with having perceived skills and capabilities to use the computer (Anouze et al. 2018). Computer-based self-efficacy nurtures the perception of empowerment to deal with the computer or internet (Cheah et al. 2014). The internet-based self-efficacy enriches the perception of exploring and using the internet for e-shopping (Ariffin et al. 2018).

2.5 Attitude Towards Internet Purchase

Attitude is a consistent way of behaving among individuals; individuals interact with their respective memory towards the object in question and summarily evaluate that objective (Ajzen 1991). Attitude reveals the product's psychological assessment or services (Anouze et al. 2018). The previous good and enjoyable experience promote a positive attitude towards using the internet to make purchases (Bashir and Madhavaiah 2015). The buying experiences of product or services on the internet is much different from the buying in-store (Bandura 2020).

2.6 Subjective Norms

Subjective norms represent the perception of the social pressure to act or not to act a specific behavior (Hsu et al. 2006). Subjective norm refers to the people's importance around the individual that influences individual decision-making or behavior (Cheah et al. 2014). Social acceptance of online shopping brings online shopping adoption among consumers and reduces risk perception among the consumers (Pappas 2016; Bandura 2020). Recent literature signifies the importance of the subjective norms that influence the individual intention towards action taking (Nawi et al. 2020).

2.7 Perceived Behavioral Control

Perceived behavioral control represents the individual perception of easiness or difficulty for the specific behavior's performance (Bandura 2020). The perception of the right motivation and ability promotes the intention to engage in a specific behavior (Hsu et al. 2006). Purchase intention significantly rests on the individual ability and motivation to engage in the purchase behavior (Pappas 2016; Bandura 2020).

2.8 Intention to Purchase Insurance Online

Intention shows the individual willingness to buy or ready to engage in a specific behavior. TPB and TRA proposed the behavioral intention as a proxy of the behavior that individual shows extent willingness and efforts to perform the specific behavior (Aziz et al. 2019). The prospective purchase behavior towards banking over the internet shows the satisfaction and need to use the internet to purchase banking products (Raut et al. 2020).

2.9 Insurance Purchase Behavior

Intention leads to the execution of actual behavior. Purchase behavior depicts as the display of the behavior for buying insurance over the internet (Tariq and Md Husin 2019; Bandura 2020).

2.10 Hypotheses Development

Internet Trustworthiness Belief and Attitude Towards Internet Purchase Intention. In the internet purchase environment, the consumer place much on the trustworthiness of social media. Trust plays a significant part in the relationship development between the consumer and the business (Bandura 2020). Trust helps to reduce the related risk and diminishes the consumer vulnerability in online shopping (Masoud 2013). Internet trustworthiness promotes the attitude towards buying products and services online (Geber-Persson et al. 2016). The trusting belief helps develop a positive attitude towards buying on the internet (Geber-Persson et al. 2016; Bandura 2020). Perception of higher risks associated with online purchases builds the lack of trust in the e-buying. Arora and Saheny (2017) postulate that trust in internet purchases promotes the attitude towards internet purchases among Indian samples. In view of this, the following hypothesis was proposed.

Hypothesis (H1): Internet trustworthiness belief *positively affects attitude towards internet purchase among Chinese youth.*

Normative Structure and Subjective Norms Towards Internet Purchase. The normative structure offers the cultural fabric to perceive the actions and behaviors as acceptable (Zheng et al. 2018). Self-beliefs build on the prevailing social beliefs of accepting new technology like internet banking and online shopping (Hsu et al. 2006). Insurance firms are using the internet to offer insurance products and attract consumers (Tariq and Md Husin 2019). Most consumers prefer to shop online as online shopping is continuously becoming more popular (Nawi et al. 2020). In view of this, the following hypothesis was formed.

Hypothesis (H2): Normative structure *positively affects subjective norms among Chinese youth.*

Internet Self-efficacy Belief and Perceived Behavioral Control Towards Internet Purchase. Self-efficacy reduces the perception of control beliefs, and individual perceives having the suitable ability and motivation to engage in the specific behavior (Yabarra and Trafimow 1988). Internet self-efficacy pronounces the right and sufficient ability to perform internet-based services (Anouze et al. 2018). Consumers were having the right level of internet-based self-efficacy to adopt technology and internet-based commerce (Gurung and Raja 2016). The internet self-efficacy reduces control behaviors' perception; consumers willingly search and compare the different

insurance services available for sale online (Tariq and Md Husin 2019). In view of this, the hypothesis was proposed.

Hypothesis (H3): Internet self-efficacy *positively affects the perceived behavioral control among Chinese youth.*

2.11 Formation of Insurance Purchase Intention

TPB postulates that the emergence of the intention develops on the three factors: attitude, subjective norms, and perceived behavioral control. The following section offers the hypotheses development for the subject study.

Attitude Towards Internet Purchase. Attitude defines as the predisposition to behave consistently favorable or unfavorable towards a given object (Hsu et al. 2006). The Internet offered a unique marketplace that is very much different from traditional store buying (Nawi et al. 2020). The prospective consumers show interest and confidence in using the internet for making purchases (Tariq and Md Husin 2019). Previous literature stresses and offered empirical evidence that the consumer attitude significantly influences the purchase intention (Chen and Lin 2019). Bashir and Madhavaiah (2015) advocated that consumer attitude significantly influences intention to adopt internet banking services among young Indian samples. Therefore, based on above discussion, the following hypothesis was formed:

Hypothesis (H4a): Attitude towards internet purchase *positively affects the insurance purchase intention over the internet among Chinese youth.*

Subjective Norms. The family and peers are significant influencers for the user behaviors (Godey et al. 2016). The positive word of mouth and experiences of the peers generate the intention to use the new technology like the internet to shop (Geber-Persson et al. 2016). Social acceptability is vital for developing the intention to use new technologies (Ha et al. 2019). Bashir and Madhavaiah (2015) suggest that subjective norms positively influence online purchases like banking services and financial products. The provided debates lead to the following hypothesis:

Hypothesis (H4b): Subjective norms towards internet use *positively affects the subjective norms for internet purchase among Chinese youth.*

Perceived Behavioral Control. Control belief stems from understanding the inability to perform the task or behavior at hand (Godey et al. 2016). The anticipation of difficulties or obstacles reduces the perception of engaging in the specific expected behavior (Bashir and Madhavaiah 2015). Thus, perceived behavioral control lead to the particular behavior whether it can be easy or difficult perspectives (Ha et al. 2019). These decision perform an individual's confidence for a specific task significantly influences their intention and behavior (Ajzen 1991).

Individuals with computer skills have less control of using the internet for purchases (Hsu et al. 2006). Considering the above discussion, this study postulate the following hypothesis:

Hypothesis (H4c): Perceived behavioral control *positively affects the insurance purchase intention over the internet among Chinese youth.*

Purchase Intention Impact on Purchase Behavior. Purchase intention suggests the consumer's likelihood of purchasing in the future. The numerous number of the study had applied purchase intention to estimate a future web use (Arora and Sahney 2017) or future purchase on the internet (Bandura 2020) due to their willingness or promise to engage in a particular activity or behavior related to future consumption, many studies have employed. Hence, the following hypothesis was formed:

Hypothesis (H5): Intention to purchase insurance *positively and significantly affects the insurance purchase behavior over the internet among Chinese samples.*

2.12 Mediation Effect

Internet trustworthiness belief generates the perception of benefits and leads to the development of attitude towards internet purchase. Recently, Tariq and Md Husin (2019) postulate that attitude mediates the relationship between the trust belief and intention to purchase over the internet. Social norms nurture from the prevailing structure of the prevailing norms (Zheng et al. 2018). Normative structure as belief impacts the subjective norms and leads to the development of the intention to adopt (Godey et al. 2016). Social belief helps to progress the perception of acceptability of certain behaviors (Geber-Persson et al. 2019). Empirical evidence supports the claims that the PBC impacts adopting the technology (Bashir and Madhavaiah 2015). PBC as a control belief generates the limitation of resources or abilities to perform the particular behaviors (Ajzen 1991). Recently, the empirical evidence suggests PBC mediates the perception of control belief and intention towards using internet behaviors (Ariffin et al. 2018). Based on the above discussion, following hypotheses was proposed:

HM1: Attitude towards internet purchase mediates the relationship between the internet trustworthiness belief and intention to purchase insurance online.

HM2: Subjective norms towards internet use mediates the relationship between the normative structure and intention to purchase insurance online.

HM3: Perceived behavioral control towards internet purchase mediates the relationship between internet self-efficacy and intention to purchase insurance online.

Mediation Effect of the Brand, Relationship, and Value Equities on the Online Purchase Intention. TPB framework postulates that the intention mediates the relationship between the predictors of intention, i.e., ATE, SUN & PBC, and the behavior under examination (Tariq and Md Husin 2019). Joey (2007) empirically examines the mediational impact on the intention between the predictors of intention and behaviors. Hence, the following hypotheses as below:

HM4 a-c: Intention to purchase insurance online mediates the relation between the attitude, subjective norm & perceived behavioral control and insurance purchase behavior over the internet.

3 Research Methodology

3.1 Data Collection and Study Sample Design

A cross-sectional design has been employed to examine the factor influencing attitude, subjective norms, and perceived behavioral control, intention, and purchase behavior towards insurance over the internet. The judgment sampling was utilized for data collection. Then, the collected data inputted into Statistical Package Social Science (SPSS) and PLS-SEM for further analysis.

3.2 Sample Size

The target population of the current study was the working individuals in China. The sample size calculation was performed with G-Power 3.1 with the power of 0.95 and effect size 0.15 having seven predictors. The required sample size was 84 (Wu and Song 2021). Moreover, the lowest threshold of 200 samples was suggested for PLS-SEM (Raut et al. 2020). The study intends to employ the 2nd generation of statistical analysis technique of structural equation modeling; we decided to collect about 250 respondents. The convenience sampling technique utilized a few qualifying questions added to the survey by taking the respondents' consent to participate in the study. The data collection was performed online by posting the survey on <http://www.wjx.cn/> from October 2020 to November 2020.

3.3 Research Instrument

Questions items for internet trustworthiness belief adapted from an earlier work of Gurung and Raja (2016), Bashir and Mashaviah (2015), Joey (2017 and Aziz et al.

(2019). Normative structure items were revised from the work of Cheah et al. (2014), Joey (2004), and Tariq and Md Husin (2019). Internet-based self-efficacy evaluated with the item taken from the work of Anouze et al. (2018), Joey (2004), and Tariq and Md Husin (2019). Attitude towards buying on the internet taken from Anouze et al. (2018), Geber-Persson et al. (2019), and Gurung and Raja (2016). Subjective norm assessed with the items taken from the work of Geber-Persson et al. (2019), Gurung and Raja (2016), and Joey (2004). Perceived behavioral control was evaluated with the items taken from Cheah et al. (2014), Geber-Persson et al. (2019) and Tariq and Md Husin (2019). Online insurance purchase intention was evaluated with items taken from the work of Anouze et al. (2018), Bashir and Mashavaiah (2015), and Geber-Persson et al. (2019). For online purchase behavior for insurance items borrowed from the work of Aziz et al. (2019), Anouze et al. (2018), Bashir and Mashavaiah (2015), Geber-Persson et al. (2019), and Gurung and Raja (2016). A five-point Likert scale (1 to 5, from “strongly disagree” to “strongly agree”) used for the dependent variable, and a five-point Likert scale (1 to 5, from “strongly disagree” to “strongly agree”) was used for all variables (Table 1).

Table 1 Construct No. of items and sources

Variable	Items	Source
Internet trustworthiness beliefs	5	Gurung and Raja (2016), Bashir and Mashavaiah (2015), Joey (2004), Aziz et al. (2019), and Geber-Persson et al. (2019)
Normative structure	5	Joey (2004), Cheah et al. (2014), and Tariq and Md Husin (2019)
Self-efficacy	5	Anouze et al. (2018), Joey (2004) and Tariq and Md Husin (2019)
Attitude towards buying on the internet	5	Anouze et al. (2018), Gurung and Raja (2016), Bashir and Mashavaiah (2015), and Geber-Persson et al. (2019)
Subjective norms	5	Gurung and Raja (2016), Joey (2004), Aziz et al. (2019), Geber-Persson et al. (2019), and Tariq and Md Husin (2019)
Perceived behavioral control	5	Gurung and Raja (2016), Cheah et al. (2014), Joey (2004), Geber-Persson et al. (2019), and Tariq and Md Husin (2019)
Online insurance purchase intention	5	Anouze et al. (2018), Bashir and Mashavaiah (2015), and Geber-Persson et al. (2019)
Online insurance purchase behavior	5	Anouze et al. (2018), Gurung and Raja (2016), Bashir and Mashavaiah (2015), Aziz et al. (2019), and Tariq and Md Husin (2019)

3.4 Assessment of Common Method Variance (CMV)

Social science research methods connected with the common method biases initiated using single-source and a one-point time data collection method (Faul et al. 2007). Harman's (1976) one-factor test is recommended as an approach to estimate the CMV issue for the study's constructs (Faul et al. 2007). The use of one-factor Harman's test confirms that CMV is not a critical issue for study as the highest factor account for 35.5% variance and less than the suggested limit of 50% (Faul et al. 2007).

3.5 Multivariate Normality

SEM-PLS associate with having no multivariate normality assumption in the data as it is a non-parametric analysis instrument (Wu and Song 2021). Though multivariate data normality confirmed following (Hair et al. 2019) endorsement, an online web power tool (<https://webpower.psychstat.org/wiki/tools/index>) was exploited to check the data normality. The test outcomes authorize that the data set is not as normal as Mardia's multivariate coefficient p-values come less than 0.05 (Harman 1976).

3.6 Data Analysis Method

Partial least squares structural equation modeling (PLS-SEM) through the Smart-PLS software 3.2 exploited to evaluate the collected data. PLS-SEM is a multivariate investigation tool that evaluates path models with latent constructs (Raut et al. 2020). PLS-SEM allows the researcher to work with non-normal and small data sets. Similarly, PLS-SEM is casual-predictive by nature, providing the advantage to deals with complex models (Peng et al. 2012). Two-step procedures suggested examining data with PLS-SEM, the first measurement performed to appraise every study construct (Raut et al. 2020). The second stage was completed to estimate the structural model relations and examine study hypotheses with significance levels (Peng and Lai 2012). Model assessment performed with r^2 , Q^2 , and the effect size f^2 describes the exogenous construct's path effect for the endogenous construct (Raut et al. 2020).

4 Data Analysis

4.1 Demographic Characteristics

Among the respondents, 53.1% of respondents were female, and the remaining are male. The 32.6% of the respondents were having the aged between 25–30 years, the respondents having age between 31–40 years are 32%, 15.5% of the respondent have age between 41–50 years, 13.8% of the respondents aged between 18–24 years, remaining respondents have age above than 50 years. 31.7% of the respondents have a Bachelor degree-level education, 22.3% of the respondents have the education less than high school, 15.8% of the respondents have high school level education, 12% of the respondents have college-level education, remaining respondents have the Master level or higher level of education. Among the respondents, 4.7% of the respondents having monthly incomes of less than or up to 1,000 yuan, 17.0% of respondents have monthly incomes between 1,001–2,000 yuan, 26.7% of respondents have monthly incomes between 2,001 and 3,000 yuan, 26.7% of the study respondents have the monthly income of 3,001 to 4,000 yuan, and 24.9% of respondents have a monthly income of more than 4,001 yuan. The demographic analysis reported in Table 2.

Table 2 Demographic characteristics

	N	%		N	%
<i>Gender</i>			<i>Education</i>		
Male	160	46.9	Below high school	76	22.3
Female	181	53.1	High school certificate	54	15.8
Total	341	100.0	College	41	12.0
			Bachelor degree	108	31.7
<i>Age Group</i>			Master’s degree and above	62	18.2
18–24 years	47	13.8	Total	341	100.0
25–30 years	111	32.6			
31–40 years	109	32.0	<i>Monthly Income</i>		
41–50 years	53	15.5	Less than RMB1000	16	4.7
Above than 50 years	21	6.2	RMB 1001–RMB2000	58	17.0
Total	341	100.0	RMB 2001–RMB3000	91	26.7
			RMB 3001–RMB4000	91	26.7
			Above RMB 4001	85	24.9
			Total	341	100

4.2 Reabilities and Validities

Taking the direction from Wu and Song (2021), reliabilities for the study’s latent constructs were attained and evaluated by Cronbach’s alpha (CA), DG rho, and composite reliability (CR). CA values for each construct are well above the threshold of 0.70, and the minimum score of CA values is 0.838 (Peng and Lai 2012). The results are described in Table 3. Furthermore, all the DG rho values are also well above the threshold of 0.70, where the minimum score of DG rho was 0.845 (Raut et al. 2020). Additionally, CR values were well beyond the threshold of 0.70, where the CR value’s minimum value was 0.885 (Peng and Lai 2012). These results signify that the latent constructs reached satisfactory reliabilities and performed well for the later analysis. AVE for all items for each construct must be above than 0.50 score to the extent the adequate convergent validity to support the uni-dimensionality of each construct (Raut et al. 2020). Items display that constructs have acceptable convergent validity (see Table 3). All the VIF values for each construct well below the threshold of 3.3, displaying no multicollinearity issue (Peng and Lai 2012). The item loading and cross-loading were reported to validate the construct discriminant validity and reported in Tables 4 and 5.

Table 4 demonstrates the construct for discriminant validities. Furthermore, the Fornell-Larcker criterion (1981) was utilized for discriminant validity on the study constructs. Fornell-Larcker criterion estimated with the square root of respective construct AVE, and the square root of AVE for the construct, must be higher than the correlation among the other constructs (Cain et al. 2017). The HTMT ratio essentially is less than 0.85 to provide the evidence for discriminant validity for study constructs (Chin 2010). Table 4 shows the study has confirmation of discriminant validity for each construct. The Cross-loading table provided in the appendix. The cross-loading

Table 3 Reliability and validity

Variabls	No. items	CA	DG rho	CR	AVE	VIF
ITB	5	0.890	0.901	0.918	0.693	1.000
NSE	5	0.921	0.924	0.941	0.760	1.000
SFY	5	0.911	0.922	0.934	0.740	1.000
ATI	5	0.893	0.923	0.920	0.700	1.117
SNS	5	0.942	0.943	0.956	0.812	1.274
PBC	5	0.932	0.942	0.948	0.787	1.318
IPI	5	0.886	0.890	0.917	0.687	–
IPB	5	0.838	0.845	0.885	0.607	–

Note ITB: Internet trustworthiness beliefs; NSE: Normative structure, SFY: Self-efficacy; ATI: Attitude towards internet purchase; SNS: Subjective norms; PBC: Perceived behavioral control; IPI: Intention to purchase insurance online, IPB: Insurance purchase behaviour. SD: Standard Deviation; CA: Cronbach’s Alpha; DG rho - Dillon-Goldstein’s rho; CR - Composite Reliability; AVE - Average Variance Extracted; VIF - Variance Inflation Factors

Source Author’s data analysis

Table 4 Discriminant validity

	ITB	NSE	SFY	ATI	SNS		IPI	IPB
<i>Fornell-Larcker Criterion</i>								
ITB	0.832							
NSE	0.252	0.872						
SFY	0.338	0.200	0.860					
ATI	0.347	0.187	0.326	0.837				
SNS	0.227	0.574	0.185	0.243	0.901			
PBC	0.266	0.409	0.198	0.300	0.450	0.887		
IPI	0.287	0.350	0.307	0.319	0.280	0.545	0.829	
IPB	0.230	0.300	0.207	0.333	0.314	0.520	0.519	0.779
<i>Heterotrait-Monotrait Ratio (HTMT)</i>								
ITB	–							
NSE	0.270	–						
SFY	0.372	0.216	–					
ATI	0.368	0.215	0.346	–				
SNS	0.240	0.614	0.197	0.268	–			
PBC	0.285	0.437	0.210	0.320	0.476	–		
IPI	0.318	0.386	0.341	0.347	0.302	0.587	–	
IPB	0.261	0.339	0.232	0.373	0.352	0.584	0.598	–

Note ITB: Internet trustworthiness beliefs; NSE: Normative structure, SFY: Self-efficacy; ATI: Attitude towards internet purchase; SNS: Subjective norms; PBC: Perceived behavioral control; IPI: Intention to purchase insurance online, IPB: Insurance purchase behavior

Source Author’s data analysis

method suggested that the outer loading of the construct should exceed the corresponding construct loading for the acceptable construct of discriminant validity. The obtained results reaffirmed the discriminant validity of all constructs in this study (Table 5).

4.3 Path Analysis

The measurement calculation was executed after gaining the study’s model reliabilities and validities from the structural model calculation to investigate the study hypothesis. The adjusted r2 value for the internet trustworthiness belief as an exogenous construct on the attitude towards internet purchase elucidates the 11.8% of change in the attitude towards internet purchase. The predictive relevance (Q2) value for the part of the model is 0.080 indicating a small predictive relevance (Peng and Lai 2012). The adjusted r2 value for the normative structure as exogenous constructs on the subjective norms explains the 31.8% of change in the subjective norms. The

Table 5 Cross loading

	ITB	NSE	ISF	ATI	SNS	PBC	IPI	IPB
ITB1	0.847	0.244	0.298	0.323	0.241	0.238	0.272	0.176
ITB2	0.818	0.203	0.258	0.320	0.184	0.249	0.223	0.204
ITB3	0.899	0.274	0.309	0.310	0.233	0.235	0.272	0.234
ITB4	0.803	0.155	0.287	0.226	0.137	0.196	0.210	0.168
ITB5	0.789	0.144	0.254	0.239	0.120	0.171	0.206	0.166
NSE1	0.193	0.840	0.141	0.125	0.435	0.290	0.263	0.209
NSE2	0.229	0.865	0.192	0.166	0.502	0.364	0.378	0.272
NSE3	0.203	0.913	0.172	0.175	0.507	0.409	0.293	0.284
NSE4	0.221	0.903	0.156	0.180	0.541	0.344	0.278	0.272
NSE5	0.249	0.836	0.207	0.162	0.506	0.369	0.310	0.266
ISF1	0.226	0.297	0.829	0.250	0.198	0.194	0.307	0.181
ISF2	0.128	0.224	0.741	0.212	0.113	0.136	0.246	0.148
ISF3	0.375	0.108	0.893	0.301	0.154	0.150	0.238	0.164
ISF4	0.362	0.116	0.924	0.319	0.155	0.182	0.261	0.198
ISF5	0.346	0.108	0.903	0.311	0.164	0.175	0.261	0.192
ATI1	0.356	0.118	0.337	0.907	0.194	0.250	0.301	0.298
ATI2	0.388	0.128	0.350	0.896	0.182	0.222	0.264	0.295
ATI3	0.193	0.154	0.140	0.667	0.166	0.161	0.131	0.149
ATI4	0.225	0.258	0.266	0.801	0.248	0.269	0.259	0.267
ATI5	0.240	0.163	0.216	0.888	0.241	0.344	0.339	0.347
SNS1	0.229	0.524	0.183	0.221	0.928	0.383	0.251	0.280
SNS2	0.199	0.510	0.167	0.246	0.903	0.488	0.290	0.324
SNS3	0.179	0.532	0.137	0.210	0.906	0.417	0.235	0.267
SNS4	0.236	0.511	0.193	0.233	0.910	0.448	0.287	0.313
SNS5	0.176	0.506	0.153	0.181	0.857	0.281	0.192	0.224
PBC1	0.231	0.388	0.168	0.294	0.437	0.919	0.518	0.456
PBC2	0.264	0.384	0.223	0.287	0.416	0.913	0.513	0.510
PBC3	0.252	0.369	0.180	0.328	0.412	0.901	0.535	0.471
PBC4	0.223	0.365	0.143	0.201	0.366	0.860	0.451	0.429
PBC5	0.200	0.295	0.154	0.195	0.353	0.838	0.373	0.433
IPI1	0.183	0.240	0.095	0.224	0.248	0.413	0.870	0.743
IPI1	0.201	0.260	0.250	0.234	0.197	0.343	0.806	0.424
IPI1	0.263	0.316	0.238	0.302	0.225	0.429	0.823	0.443
IPI1	0.243	0.289	0.249	0.245	0.234	0.513	0.814	0.432
IPI1	0.224	0.283	0.293	0.290	0.199	0.419	0.830	0.414
IPB1	0.254	0.298	0.248	0.253	0.295	0.533	0.580	0.743

(continued)

Table 5 (continued)

	ITB	NSE	ISF	ATI	SNS	PBC	IPI	IPB
IPB2	0.260	0.257	0.175	0.273	0.260	0.489	0.471	0.811
IPB3	0.198	0.242	0.188	0.272	0.242	0.402	0.404	0.831
IPB4	0.171	0.202	0.134	0.239	0.237	0.362	0.359	0.741

Note ITB: Internet trustworthiness beliefs; NSE: Normative structure, ISF: Internet Self-efficacy; ATI: Attitude towards internet purchase; SNS: Subjective norms; PBC: Perceived behavioral control; IPI: Intention to purchase insurance online, IPB: Insurance purchase behavior

predictive relevance (Q2) value for the part of the model is 0.264 indicating a medium predictive relevance (Peng and Lai 2012). The adjusted r2 value for the self-efficacy as exogenous construct on the perceived behavioral control elucidates the 3.6% of change in the perceived behavioral control to purchase on the internet. The predictive relevance (Q2) value for the part of the model is 0.030 indicating a small predictive relevance (Peng and Lai 2012). The adjusted r2 value for the three exogenous constructs (i.e., attitude towards internet purchase, subjective norms, and perceived behavioral control) on the intention to purchase insurance online illuminates the 31.8% of change in the intention to purchase the insurance online. The predictive relevance (Q2) value for the part of the model is 0.215 indicating a medium predictive relevance. The adjusted r2 value for the intention to purchase insurance online construct on the insurance purchase behavior explains the 26.8% of change in the insurance purchase behavior. The predictive relevance (Q2) value for the part of the model is 0.159 indicating a medium predictive relevance (Peng and Lai 2012).

Model standardized path values, t-values, and significance level illustrated in Table 6. The path coefficient between ITB and ATI ($\beta = 0.347, t = 6.279, p = 0.000$), indicating a significant positive effect of the internet trustworthiness belief on the attitude towards internet purchase. The result forms significant statistical support to accept the H1a. The path value for the NSE and SNS ($\beta = 0.574, t = 12.093, p = 0.000$) shows the effect of the normative structure for buying on the internet has a positive and significant effect on the subjective norms for the internet purchase, accordingly offers support for the acceptance of H2. The path between ISF and PBC ($\beta = 0.198, t = 2.997, p = 0.001$), demonstrating the influence of the internet-based self-efficacy on the perceived behavioral control, comes positive significant; it carries evidence to support the H3. The path coefficient for the ATI and IPT ($\beta = 0.168, t = 3.450, p = 0.000$), representing a positive and significant effect of attitude towards internet purchase on the intention to purchase insurance online; it offers the positive sign to support the H4a. The path value for the SNS and IPT ($\beta = 0.020, t = 0.369, p = 0.356$) shows the significant effect of subjective norms for internet purchase on the intention to purchase insurance over the internet, accordingly offers support for the acceptance of H4b. The path between PBC and IPT ($\beta = 0.485, t = 8.898, p = 0.000$), demonstrating the influence of the perception of behavioral control on the intention to purchase insurance online, come positive and significant; it delivers the evidence to support the H4c. The path value for the

Table 6 Path coefficients

HP		Beta	CI - Min	CI - Max	T	p	r ²	f ²	Q ²	Decision
H1	ITB → ATI	0.347	0.264	0.440	6.279	0.000	0.120	0.137	0.080	Accept
H2	NSE → SNS	0.574	0.500	0.648	12.093	0.000	0.329	0.490	0.264	Accept
H3	ISF → PBC	0.198	0.099	0.310	2.997	0.001	0.039	0.041	0.030	Accept
H4a	ATI → IPT	0.168	0.090	0.248	3.450	0.000		0.038		Accept
H4b	SNS → IPT	0.020	-0.077	0.110	0.369	0.356		0.000		Reject
H4c	PBC → IPT	0.485	0.395	0.574	8.898	0.000	0.324	0.265	0.215	Accept
H5	IPT → IPB	0.519	0.428	0.606	9.884	0.000	0.270	0.369	0.159	Accept

Note ITB: Internet trustworthiness beliefs; NSE: Normative structure, ISF: Self-efficacy; ATI: Attitude towards internet purchase; SNS: Subjective norms; PBC: Perceived behavioral control; IPI: Intention to purchase insurance online, IPB: Insurance purchase behavior

Source Author’s data analysis

IPT and IPB ($\beta = 0.519, t = 9.884, p = 0.000$) shows the positive and significant effect of the intention to purchase insurance online on the purchase of the insurance online, accordingly offers support for the acceptance of H5.

4.4 Mediating Analysis

The mediation effect of the ATI between the ITB and IPI was evaluated with the hypotheses HM1. The result reveals that attitude towards internet purchase mediates the relationship between internet trustworthiness belief and intention to purchase insurance on the internet ($\beta = 0.058, CI \text{ min} = 0.027, CI \text{ max} = 0.099, p = 0.005$), and offer support for the hypothesis HM1. Hypothesis HM2, the relationship between the NSE and IPI mediated by the SNS. The result depicts that the subjective norms do not mediate the relationship between normative structure and intention to purchase insurance on the internet ($\beta = 0.012, CI \text{ min} = -0.042, CI \text{ max} = 0.065, p = 0.370$) and provides no statistical support for the hypothesis HM2. In hypothesis HM3, the relationship between the ISF and IPI is mediated by the PBC. The result shows that the perceived behavioral control mediates the relationship between self-efficacy and intention to purchase insurance on the internet ($\beta = 0.096, CI \text{ min} = 0.045, CI \text{ max} = 0.156, p = 0.003$) and delivers support for the acceptance of hypothesis HM3.

Table 7 Mediating effect

Hypo	Associations	Beta	CI – Min	CI – Max	<i>t</i>	<i>P</i>	Decision
HM1	ITB → ATI → IPI	0.058	0.027	0.099	2.607	0.005	Mediation
HM2	NSE → SNS → IPI	0.012	-0.042	0.065	0.370	0.356	No mediation
HM3	SFY PBC → IPI	0.096	0.045	0.156	2.715	0.003	Mediation
HM4a	ITB → IPI → IPB	0.030	0.012	0.056	2.230	0.013	Mediation
HM4b	SNS → IPI → IPB	0.011	-0.038	0.060	0.336	0.357	No mediation
HM4c	PBC → IPI → IPB	0.252	0.181	0.324	6.038	0.000	Mediation

Note ITB: Internet trustworthiness beliefs; NSE: Normative structure, ISF: Internet Self-efficacy; ATI: Attitude towards internet purchase; SNS: Subjective norms; PBC: Perceived behavioral control; IPI: Intention to purchase insurance online, IPB: Insurance purchase behavior
Source Author's data analysis

For hypothesis HM4a, the relationship between the ITB and IPB is mediated by the IPI. The result reveals that intention to purchase insurance on the internet significantly mediates the relationship between internet trustworthiness belief and insurance purchase behavior ($\beta = 0.030$, CI min = 0.012, CI max = 0.056, $p = 0.013$). In hypothesis HM4b, the relationship between the SNS and IPB is mediated by the IPI. The result shows that intention to purchase insurance on the internet does not mediate the relationship between subjective norms and insurance purchase behavior on the internet ($\beta = 0.011$, CI min = -0.038, CI max = 0.060, $p = 0.336$), and delivers no support for the hypothesis HM1e. For hypothesis HM4c, the relationship between the PBC and IPB is mediated by the IPI. The result reveals that intention to purchase insurance on the internet significantly mediates the relationship between perceived behavioral control and insurance purchase behavior on the internet ($\beta = 0.252$, CI min = 0.181, CI max = 0.324, $p = 0.000$), and offers support to accept the HM4c (Table 7).

5 Discussion

The study aims to explore the effects of the attitude, subjective norms, and perception of behavioral control forming the intention to purchase insurance online and actual purchase behavior for insurance buying online. By utilizing the TPB and extend with the internet trustworthiness as behavioral belief impacting the attitude, normative structure as normative belief impacts subjective norms, and internet self-efficacy as control belief influencing the perceived behavioral control. The study findings confirm that internet trustworthiness significantly impacts the attitude towards buying over the internet, normative structure powers the prevailing subjective norms, and internet-based self-efficacy influences the perception of control behavior. The attitude and perception of behavioral control significantly trigger the intention to purchase the insurance online. The subjective norms are not much support the formation of the

intention to purchase insurance online. The intention to purchase insurance online significantly promotes the insurance purchase behavior over the internet. The study's first hypothesis advanced to evaluate the effects of the ITB on the ATI agree that the ITB ($f^2 = 0.137$) has a significant and medium positive effect on the ATI on the online purchase among the Chinese sample. The study finding corresponds with the result revealed by Aziz et al. (2019). The trust reduces the effect of the risk towards the internet and promotes a positive attitude towards using the internet for making purchases. The second hypothesis evaluates the effect of the NSE on the SNS that maintain the NSE ($f^2 = 0.490$) has a significant and large positive effect on the SNS on the online purchase among the study sample. This outcome draws support from the Chen and Lin (2019) normative structure harness the support requires to use the novel technologies or engage in new behaviors. Arora and Sahney (2017) also establish empirical evidence that internet buying's social norms promote the social acceptability of using the internet to make purchases. For the effect of the ISF on the PBC reinforced the argument that the ISF ($f^2 = 0.041$) has a significant and small positive effect on the PBC for internet purchase. Our study finds support from Ariffin et al. (2018) that internet self-efficacy harness the perceived behavioral control. The perception of ability and motivation drives with the capacity to use the internet and reduces the control perception, and users find encouragement to use the internet for making regular purchases (Anouze and Alamro 2019).

The subsequent hypotheses evaluate the effect of the ATI, SNS, and PBC on the IPI where the ATI ($f^2 = 0.038$) and PBC ($f^2 = 0.265$) have a significant and positive effect on the purchase intention to buy insurance online among the Chinese sample (Peng and Lai 2012). Bashir and Madhavaiah (2015) suggest the internet purchase intention significantly rests on the attitude and perception of control. Our study outcomes significantly match with the results postulated by Hsu et al. (2006) that the intention to purchase online is significantly influenced by the attitude and perception of control towards the use of the internet. However, the evaluation of SNS on the IPI shows the insignificant effect of SNS ($f^2 = 0.000$) on the IPI. The results depict that the social acceptability is low among the study samples. Cheah et al. 2014 suggest that low social support reduces the intention to engage in internet buying behavior. Social influence promotes the use of the internet for making online purchases (Nawi et al. 2020). Finally, the effect on IPT on the IPB reveal that the IPT ($f^2 = 0.369$) has a significant and large positive effect on the insurance purchase behavior over the internet (Peng and Lai 2012). These findings aligned with Aziz et al. (2019) that the intention to purchase online promotes the online purchase behavior. The insurance purchase is complicated as many consumers need the correct information and answer any questions before deciding to buy insurance. The case is the same as using the internet for making insurance purchase; more consultancy and one-to-one discussion requires making the final decision to purchase insurance.

Furthermore, the mediating effect of the ATI between the ITB and IPI approves ATI's meditating effect ($\beta = 0.058$, $p = 0.005$) for the relationship between the ITB and IPI for the online insurance purchase. Our study result coincides with the finding postulated by Tariq and Md Husin (2019) that attitude significantly mediates the relationship between the behavioral beliefs. Our study formed the contribution so that

the internet trustworthiness harness the attitude and makes a purchase online even for the insurance products. The following mediating hypothesis explored the mediating effect of the SNS between the relationship between NSE and IPI. The finding suggests the no mediating effect of SNS ($\beta = 0.012$, $p = 0.356$) for the relationship between the NSE and IPI for the online insurance purchase. The normative structure forms the subjective approval for the intention towards the behavior (Zheng et al. 2018). The prevailing normative structure does not offer much support to have the subjective acceptance of buying over the internet and not promoting the intention towards buying insurance over the internet. However, the ISF and IPI ($\beta = 0.096$, $p = 0.003$) relationship was also significantly mediated by the PBC. The results confirm the claim forwarded by Tariq and Md Husin (2019) that the control belief indirectly harnesses the intention through the perception of behavioral control. The subsequent mediating hypotheses inspected for the mediating effect of the IPI for TPB factors on the IPB, which IPI ($\beta = 0.030$, $p = 0.013$). The result finds support from Arora and Sahney (2017) that intention significantly facilitates the relationship between the attitudes towards web shopping behavior for shopping. Next, the SNS and IPB ($\beta = 0.011$, $p = 0.357$) demonstrate that the relationship is not mediated by the IPI. The results project intends to purchase insurance online, not mediated by subjective norms for the insurance purchase behavior over the internet. Furthermore, the path for the PBC and IPB ($\beta = 0.252$, $p = 0.000$) was also significantly mediated by the IPI. The result finds support from Arora and Sahney's (2017) work that intention suggestively mediates the relationship between the attitude towards web shopping behavior for shopping.

6 Conclusion

By extending the TBP with the internet trustworthiness, normative structure, and internet self-efficacy for the perceived behavioral control, this study proposes a new specific indicators method. This discussion has shed some light on the practical contribution. Firstly, insurance firms need to incorporate the information-rich, entrainment, and interactive way to interact with prospective insurance consumers to harness the attitude for the purchase of issuance over the internet (Chen and Lin 2019). Furthermore, insurance firms able to offer a high interaction session with their respective customer to have better-perceived benefits of buying insurance online and reducing the less supportive social norms (Cheah et al. 2014). Additionally, due to the dual marketing channels offer the easier method for insurance consumer to find more social support for buying insurance online (Nawi et al. 2020). Theoretically, the current work contributes to extending the traditional TPB model with the backward by incorporating behavioral beliefs for all the attitudinal beliefs. The future work can add more behavioral beliefs that can explain and harness the right attitude towards behavior, social norm, and perception of behavioral control. The study's connected limitations includes the distinguish users, centered on consumers' individual features like volunteers for trial, risk-taking, and mindfulness. The forthcoming study should

highlight these personal characteristics to approximate the intention to buy insurance online (Godey et al. 2016; Chen and Lin 2019). The current research work espouses a cross-sectional design to estimate the consumer level of personal belief & behavioral beliefs and intention to purchase mobile. Therefore, the forthcoming study should apply the longitudinal research to comprehend the associated attitudes towards intention to purchase and purchase insurance online. Furthermore, future works may include different insurance products instead of general term insurance, like car insurance, health insurance, and travel insurance, etc. Moreover, the role of previous online purchase experience was also utilized to explore the trust, intention, and future purchase behaviors for online purchases.

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The Chronology of Impulse Buying Behaviour



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Abstract Purchasing is not a novel idea. In reality, buying and selling has existed since the dawn of time, and as culture has advanced, the idea has developed in terms of shape, design, and compassion. Nowadays customers purchase items not only to satisfy their basic needs, but also as a way of life or a recreational activity that can help them meet their psychological needs. Since the 1950s, researchers have been researching consumer behaviour to better understand the idea of impulse buying. Impulse buying is the most common in modern societies, and it has drawn the attention of a variety of researchers from different fields, including marketing, consumer behavioural economics, and psychology in recent decades. Impulse buying not only occur on traditional store but it also happens on e-store due to the tremendous growth of the Internet has altered the retail environment, and changes in e-retailing, such as telemarketing, credit card and debit card use, and 24-h e-retailing availability, have increased the opportunity for impulse shopping by Internet shoppers. In result, individuals may now buy at any time and from any place as a result of this evolution. In contrast to traditional shoppers, online shoppers are more likely to indulge in impulsive purchases. Hence, impulse buying become important need to continuous study. Thus, this study provided the definition, timeline as well as categories of online impulse buying behaviour based on recent studies.

Keywords Online impulse buying behaviour · Timeline · Definition · Categories

1 Introduction

Purchasing is not a new phenomenon. In reality, buying and selling dates back to the dawn of humanity, and the concept has evolved in form, design, and compassion as society has progressed (Baudrillard 2016; Nasir et al. 2020). Buying and sale would have been consistent with individual needs and resource development to meet

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those needs by receiving capital from others at first (Terho et al. 2015). Different manifestations have emerged as a result of the expansion of society's buying process, and today's consumers not only buy the necessary products to meet their needs, but also as a lifestyle or a leisure activity (Hall et al. 2017; Nasir et al. 2020) which can meet their psychological needs (Yu et al. 2016; Nasir et al. 2020) Consumer buying behaviour refers to the decision-making process and behaviour of people who participate in personal consumption of products and services (Narang 2016; Nasir et al. 2020). It is the process by which an individual purchases and uses a product or service to meet a specific need or desire (Jaiswal and Gupta 2015).

Consumer behaviour research has been conducted since the 1950s to understand the concept of impulse buying (Narang 2016). The most likely to be reckless with the target of immediate gratification are highly impulsive consumers. Impulse buying is unintended purchasing arising from the reaction of internal and external stimuli, and the most likely to be reckless with the target of immediate gratification are highly impulsive consumers (Sofi and Nika 2017). In modern societies, impulse buying is the most popular (Mittal et al. 2015) and it has attracted the attention of a number of researchers from various fields, including marketing, consumer behavioural economics, and psychology, over the last few decades (Mittal et al. 2015; Yu et al. 2016; Zhao et al. 2019). Therefore, this paper intent to provide the definition, the timeline as well as the categories regarding online impulse buying behaviour.

2 The Definition of Impulse Buying Behaviour

Aragoncillo and Orus (2018) defined impulse buying as “the difference between a consumer's total purchase after a shopping trip and those that were reported as expected purchases before entering a store” and it identified the determinants of impulse buying occurring and capable of increasing the retail store's sales percentage.

The early literature on impulse buying focused on a concept. However, in both academic and commercial literature, there is no single concept that can be recognised (Rook and Fisher 1995) (Table 1).

Table 1 Different perspectives on impulse purchases

Viewpoint	Defintion
Retailers and marketers	Impulse purchases are purchases made on the spur of the moment (Chen and Yao 2018; Wu et al. 2020)
Academic	The focus is on explaining the experience of impulse buying, and the idea of impulse buying is framed more from the viewpoint of the consumer (Chang et al. 2014)
Economic	Consumers' views of the advantages and pitfalls of a purchase (Graa and Dani 2012)

Table 2 Various scholars have varying perceptions of impulse buying

Authors	Defintion
Bellenger et al. (1980)	Customers determine whether to purchase goods before or after they arrive at a retail store, and this is known as impulse buying
Weinberg and Gottwald (1982)	Impulse buying is described as buying based on strong emotional motivation, a lack of cognitive control, and mainly reactive behaviour
Cobb and Hoyer (1986)	Impulse buying happens when a person decides to purchase something while shopping in a store
Gerbing et al. (1987)	The propensity to respond to a stimulus without considering or weighing the consequences is known as impulsiveness
Rook (1987)	Impulse buying occurs when a consumer has an unexpected and sometimes strong persistent compulsion to buy something right away
Iyer and Ahlawat (1987)	It's linked to a detailed understanding of the store's environment, as well as a sense of urgency. Such transactions go beyond what is called common usage, which is often met
Rook and Gardner (1993)	It's described as a decision-making process that's relatively quick and skewed toward immediate acquisition

The first grant recognises the context for impulse buying as irrational activity in the 1950s (Aragoncillo and Orus 2018) which piques interest and contributes to numerous past researchers attempting to ascertain the reality of impulse buying through experimental experiments or survey studies. Thus, Table 2 depicted how different scholars described impulse buying.

3 The Categories of Impulse Buying

Consumers are not often making unplanned transactions based on their urgent desire or emotions and external signals are also influential influences (Amos et al. 2014). According to Aragoncillo and Orus (2018); Chan et al. (2017); Stern (1962), there are four categories to give a simple description regarding impulse buying, as shown in the table below (Table 3):

Stern (1962) conceptualization of impulse buying serves as an excellent starting point for further study. Aragoncillo and Orus (2018) added the concept from Stern (1962) regarding definition of impulse buying, which is not only applicable to retail stores but also to online studies. This is due to the fact that the advent of online shopping has added new dimensions to impulse buying conduct. Indeed, web-based retailers go through a transition in relation to a number of settings, as buying goods and services on the internet also reduces the substantial reductions that customers experience in retail stores (Kahn et al. 2018). Furthermore, the evolution

Table 3 The categories and concept of impulse buying

Constructs	Concept
Pure impulse buying	Consumers have an uncommon purchasing pattern after meeting the commodity and expressing their emotions
Reminder impulse buying	When customers are alerted to such problems, such as a low stock at home, they make a purchasing decision
Suggestion impulse buying	When customers recognize that a commodity is needed at first glance, they make a purchase
Planned impulse buying	External signals such as discounts influence a customer's decision to make an additional purchase, despite the fact that the consumer has their own shopping list

and change in e-retailing, such as telemarketing, credit card and debit card use, and 24-h e-retailing availability, increases the opportunity for impulse buying by online consumers (Kahn et al. 2018). As a result of the advantages of online shopping and the continuing trend toward customer-centricity across the world, the number of impulse purchases has risen significantly in recent years (Hussain et al. 2018).

4 The History of Impulse Buying

Table below showed a summary of impulse purchases in the past and significant contribution by past researchers at certain time duration (Table 4).

4.1 1950

In the 1950s, early impulse buying experiments focused on products versus consumers and were conducted in a variety of retail environments (Applebaum 1951; Clover 1950; West 1951). The analysis of impulse buying behaviour was then expanded by Cox (1964) who considered the effects of product shelf location and shelf size in retail stores. However, psychologists and economists criticised these early studies because they contrasted impulse buying to unplanned shopping (Dittmar et al. 1995; Rook and Gardner 1993). Rook and Hoch (1985) justified that any purchase that is not on a person's shopping list is considered an impulse purchase. This research has been criticised because (Rook and Hoch 1985) justified that any purchase that is not on a person's shopping list is considered an impulse purchase.

Table 4 An summary of impulse purchases in the past

Time duration	Researchers	Significant contribution
1950	Clover (1950), West (1951), Applebaum (1951)	Product lists are classified into impulse and non-impulse categories due to an emphasis on products rather than consumers
1960	Stern (1962)	Divided impulse purchases into four categories
	Kollat and Willett (1967)	Unplanned purchases are associated with impulse buying
1970	Bellenger et al. (1987)	Impulse buying is characterised by haste and indifference, and it is not associated with unplanned purchases
1980	Lutz (1981)	External psychological states, such as people’s thoughts and emotions, were included in the research on impulse buying
1990	Rook and Gardner (1993), Dittmar et al. (1995)	The cognitive and emotional reactions to impulse purchases are discussed
	Rook and Fisher (1995), Beatty and Ferrell (1988)	Motivations and normative factors drive impulse purchases
2000	Dholakia (2000), Silvera et al. (2008)	Hedonic intake and emotional motives are the primary drivers of impulse purchases
	Chang et al. (2011), Lee and Johnson (2010)	The physical environment of a store as a factor in impulsive purchases
	Mohan et al. (2013), Ethier et al. (2006)	The store’s atmosphere provides a friendly atmosphere that promotes impulse purchases
	Dawson and Kim (2012), Floh and Madlberger (2013), Chen and Ku (2021), Zhang et al. (2018)	The researchers looked at a variety of aspects of impulse purchases made while online shopping

4.2 1960

The difference between intentions to buy and actual purchases was described in the 1960s as unplanned or impulse buying (Kollat and Willett 1967). Furthermore, Stern (1962) divided impulse buying into four categories: pure impulse buying, planned impulse buying, reminder impulse buying, and suggestive impulse buying.

4.3 1970

During the 1970s, marketing and consumer research literature concentrated on expanding theoretical lists of items that are likely to be bought impulsively (Bellenger et al. 1987). Contrary to popular belief, (Kacen et al. 2012) claim that any good can be purchased impulsively, and that there are no specific goods that are impulse purchases. The environment of the store and product variety rather than the buyer's characteristics were found to have a greater impact on impulse purchases (Prasad 1975). When researchers (Bellenger et al. 1987; Kollat and Willett 1967; Stern 1962) compared impulsive buying to unplanned transactions in the past, they discovered that impulsive buying was a swift and thoughtless act driven by a strong desire to break free from constraints. This is a representation of the general stigma associated with impulsive behaviour, which has now been extended to impulse buying.

4.4 1980

In the 1980s, the scope of study was broadened by incorporating inner psychological states in impulse buying studies, such as emotional features. Consumer behaviour experts agree that understanding not just an individual's thoughts, but also their feelings and emotions, is becoming increasingly necessary (Lutz 1981). The cognitive, effective, and reactive aspects of buyer behaviour are usually supportive of impulse purchases (Weinberg and Gottwald 1982). As previously mentioned, individuals have very little influence over their buying decisions, and their behaviour is essentially unconscious and activated by a stimulus (Prasad 1975).

Previous study such as (Rook 1987) has determined that impulse purchasing must be differentiated from unplanned purchases. Weinberg and Gottwald (1982) indicated that not all unplanned purchases are focused on impulse decisions. Unplanned purchasing decisions can be entirely rational while also being connected to a lack of control, indicating a connection between irrationality and impulse buying (Weinberg and Gottwald 1982). Cobb and Hoyer (1986) found that impulse buying occurs when there is no prior intention to purchase a certain form of product before entering the shop, and the focus of product research has increasingly shifted to consumers, emphasising the emotional aspects of impulse buying. Core elements of impulse buying are also identified in Rook and Hoch (1985) which include a sudden desire to act instinctively; a psychological imbalance; the beginning of psychological struggle and conflict; a decline in cognitive appraisal; and a lack of concern for the after-effects of impulse buying.

The following interpretation of impulse buying based on this principle from Rook and Hoch (1985) has been generally accepted until recently: "Impulse buying occurs when a person encounters a sudden, frequently influential, and persistent urge to purchase something immediately, and impulse buying is hedonically complex in

nature and can stimulate emotional conflict (Rook 1987)". When an impulse is stimulated, it is preceded by an offensive behaviour with little concern for the possible consequences (Rook 1987). Jones et al. (2003) highlighted the risky aspects of impulse buying, which lead to fast decision-making in the period between discovering a product and purchasing it. Lewinsohn et al. (1991) made a major contribution by describing impulse buying as "unpredictable preferences" resulting from an internal "scuffle" between determination and desire. As a result, a product may be a temporary solution for a particular situation, but it may be rejected in the future. As a result, further research into the impact of impulse purchases on people's mood after they've made them has emerged (Gardner and Rook 1988).

4.5 1990

Using a combination of emotional and cognitive responses to impulse buying, researchers studied the relationship between consumers' prior mood and their impulse buying behaviour in the 1990s (Piron 1993). Various factors in the store setting, such as shelf location (Abratt and Goodey 1990) and others have been established as factors that encourage impulse buying (Rook and Fisher 1995). Some researchers have criticised the lack of consensus on the impulse buying concept, as a result of which researchers have had constant trouble linking results from different impulse buying studies (Abratt and Goodey 1990). Thus, Piron (1993) concluded that impulse buying has three main characteristics: first, it is unplanned; second, it arises as a result of stimulus exposure; and third, the decision is made on the spot.

Few studies have looked at why people buy such items on impulse, such as trendy clothes, as opposed to other products, such as kitchen essentials (Dittmar et al. 1995). Furthermore, Dittmar et al. (1996) looked into the reasons for impulse purchases and found four psychological factors: self-expression, mood, social status, and ideal self, as well as two practical factors: product usefulness and price. On the other hand, Beatty and Ferrell (1988) argued that an impulse purchase is not only unplanned, but also entails an urge to buy and is a spontaneous act followed by a desire to buy with little or no thought. This eliminates simple reminder purchases of daily-use products that are urgently needed at home, as well as scheduled events such as gift-giving, and impulse shopping is generally treated as a secondary form of unplanned purchasing (Beatty and Ferrell 1988).

4.6 2000

Emotional impulses and hedonic consumption have been the key factors of impulse purchases since the year 2000. This is supported by Kacen and Lee (2002) who defined impulse buying as "an erratic, but impacting, and hedonically complex purchasing behaviour in which the haste with which a purchase is made precludes

proper consideration of available information and alternatives". Dholakia (2000) investigated the psychological factors that lead to binge eating and the subsequent behaviour. While (Verplanken et al. 2005) looked into the emotional and cognitive aspects of impulse buying and discovered a strong connection between personality traits and impulse buying, (Silvera et al. 2008) looked into the cognitive and emotional dimensions of impulse buying in terms of social control and subjective health.

Several studies on impulse buying have focused on personality traits, as personality traits can aid in determining an individual's Impulse Buying Tendency (IBT) (Dawson and Kim 2012). IBT refers to the degree to which an individual is expected to make impulsive purchases (Jones et al. 2003). IBT is a reliable predictor of impulse buying behaviour, which is characterised as the proclivity to act impulsively and make on-the-spot purchases without consideration for the consequences (Chih et al. 2012). Bashar et al. (2013) investigated the influence of demographic factors on impulse purchase decisions and discovered that demographic factors such as an individual's age and disposable income have a significant impact on impulse purchase decisions, while gender and education have a minor impact. Women, unlike men, are more likely to buy on impulse (Ciunova-Shuleska 2012). Contractily, study from Amel et al. (2014) appneded men are more likely to buy impulsively than women. However, it depends on the type of product, as women are more likely to buy impulsively when it comes to clothing and beauty products, while men are more likely to buy impulsively when it comes to entertainment and technology. Individuals who are more autonomous and independent in their lives are found to engage in more impulse buying than those who are interdependent (Kacen and Lee 2002). Furthermore, people in individualist societies are more likely to ignore the negative implications of their impulse purchases (Pornpitakpan and Han 2013) while people in collectivist societies are more concerned with the consequences of their purchases (Muruganantham and Bhakat 2013).

Retail stores use in-store visual stimuli such as tempting promotional offers (Hultén and Vanyushyn 2014) and appealing product displays to positively influence customers' impulsive buying actions (Gupta et al. 2009). Shelf placement and its relationship to customer impulse purchases is another important feature of store stimuli (Mohan et al. 2013; Sharma et al. 2010). Furthermore, by providing excellent service, salespeople in retail stores play a vital role in achieving corporate sales targets, establishing long-term beneficial business partnerships, and maintaining positive buyer–seller relationships (Pornpitakpan and Han 2013).

Researchers have been studying people's impulse purchasing behaviours in traditional store settings for many years in order to develop effective strategies for overcoming constraining factors and identifying influential factors that increase the likelihood of impulse purchases. With the advent of e-commerce and the internet, traditional business stores are no longer the only retail channels; it was clear as early as 2003 that web-based retailers would drastically alter the landscape of consumer behaviour, resulting in far-reaching shifts in the retailing industry (Eroglu et al. 2003). Customer e-commerce growth and innovation, such as telemarketing, credit and debit cards, and 24-h internet retailing, have increased the likelihood of internet shoppers making impulse purchases (Eroglu et al. 2005). People can shop in their spare time

and without leaving their homes thanks to these technologies (Phau and Lo 2004). As a result, online customers are more impulsive than conventional customers. For people who engage in online impulsive buying, the efficiency of a website is important (Turkyilmaz et al. 2015). According to Wu et al. (2016), product-related factors such as product familiarity and trust are important driving factors. Chen and Ku (2021) and Zhang et al. (2018) added an online analysis that could affect online shoppers' impulse purchases.

5 Conclusion

In modern societies, impulse buying is the most popular (Mittal et al. 2015), and it has attracted the attention of a number of researchers from various fields, including marketing, consumer behavioural economics, and psychology, over the last few decades (Mittal et al. 2015; Yu and Bastin 2017; Zhao et al. 2019). As a result, the purpose of this paper is to provide a description, timeline, and categories for online impulse buying activity.

The early research on impulse buying was mainly concerned with a concept. However, no particular definition can be established in both academic and commercial literature (Rook and Hoch 1985). In result, this paper intent to provide clearly and compare the concept and categories of impulse buying according to recent researchs. Furthermore, this paper provided a clear timeline regarding the evolution of impulse buying from 1950 to recent. In summary, impulse buying behaviour still is a valuable to explore in future studies since this paper provided a clear justification in terms of defination, categories, as well as timeline.

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Database Marketing as a Tool for Tracing Customer's Loyalty in Malaysia Fashion Industry



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Abstract Database marketing is essential in easing the process and method of identifying customers and storing their data in a digital system only. Customer's loyalty is crucial to all business including the fashion industry due to its high competitiveness. Customers have strong buying powers and they can decide swiftly whether they want to stay with one brand or switch to other competing brands that can satisfy their product needs and wants. To build strong and long-term relationship with customers, companies today must compete aggressively to achieve competitive advantages and retain loyal customers. This study investigated the importance of database marketing in maintaining customer's loyalty in fashion industry. Three independent variables and one dependent variable which are customer's satisfaction, market segmentation and individual customer and customer's preferences are tested using related software. 100 female respondents are chosen by using convenience sampling.

The findings indicated that only customer's satisfaction is significant towards the dependent variable. Market segmentation and individual customer are not significant as the p-value is higher than 0.05. customer's satisfaction contributes significantly towards maintaining customer's loyalty for fashion industry. Also, by maintaining a reliable and efficiently database marketing it would be much easier for companies to keep track on their customer loyalty and level of customer satisfaction.

Keywords Database marketing · Customer loyalty and fashion industry

1 Introduction

The use of database marketing has been crucial to the company as it helps many companies to collect and access its customer's data. With today's modern electronic technology, such as internet, it is easy to build a relationship with ten thousand people but the difficulties are to reach the individual customer (Blomqvist et al. 2004). The large number of customer's data used by companies to determine which marketing

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tools that suitable to use based on customers' activities and actions such as their preferences and the most time that they likely to shop and what type of payment they prefer to use. By using database marketing, companies can use the data to improve their marketing activities in order to maintain their position in the industry. Thus, this study will be focus on the benefit of database marketing for customers' loyalty in fashion industry.

Customers' loyalty very importance to the company especially in fashion industry. This is due to the high competition that occurred in the industry. Customer have their buying power whether they want to stay with one brand or they want to switch to other brand that can satisfy their needs and wants. Therefore, company need to ensure that customers loyal to them and keep buying their products. To build strong and long-term relationships, companies' today fight through many different barriers to achieve competitive advantages and make the customer stay within the business (Blomqvist et al. 2004). By maintaining the customers, company can cut the cost since most of the regular customers usually can adapt the premium price that offer by the company that they purchased. It means that most of them are less in price sensitive and happy to buy products with that price. According to Reichhed and Sasser (1990), existing customers are not only less price-sensitive, they are more economical to maintain than new customers.

Therefore, by using the database in keep the customer's loyalty is beneficial to the company as by using database, company can always connect and reach its customers and at the same time company can avoid the money flow out to attract new customers. When the company have a good relationship with customers, it can lead the customer to become hard-core customers where they will repeat purchase and only loyal to that brand. By having hard-core customers, the company have possibility of increasing the profitability. Based on Yin (1999) defines "hard-core" loyalty consisting exclusively of repeat purchase behavior. According to Bentey's study (1999) has linked customer loyalty directly to profitability and confirming by Reichheld and Sasser (1990) suggestion that loyal customers are less sensitive t price changes and are more susceptible to being charged premium prices.

2 Database Marketing

Due to the use of new technologies and the facts that we live in a digital world, where the internet has a significant impact on many processes, including customer;' buying, the managerial implication is improving the enterprises' use of marketing database and strengthening the relationships with their customer (Valentino et al. 2020). This database marketing will store the information in a computer system where it will be easier for company to use. Molly (2017) stated that database marketing is a system that collect and store all of the information of consumers by using information technology in smarter, faster, less costing to company and more efficient to use.

Database marketing can be an added value to the company to move forward by using technology in controlling customers' information and data that can reduce time

waste and space as the database is more flexible and easier to find the data. Wright and Fletcher (1998) describe that Database Marketing (DBM) have the ability to utilize the potential of computer technology to facilitate more personalized customer communication in a productive and cost-effective way. Database marketing is a good synergy as it uses information technology system to store customers' data and at the same time, it can improve the company's performance in satisfying the customer.

2.1 Objective

- 2.1.1. This research objective is to determine the benefit of database marketing towards relationship between customer and company.
- 2.1.2. Another objective is to recommend the methods to improve the database marketing for customer's loyalty in fashion industry.

2.2 Benefit of Database Marketing

Based on the article from Carena Marchi (2021), database marketing can help on these matters:

- i) Identify and prioritize your most loyal customers
- ii) Separate your audience into relevant segments
- iii) Analyze insight in real0time when it comes to tracking customers throughout the decision-making process
- iv) Use customer feedback and behaviors to update your marketing strategies
- v) Improve company level of brand awareness and identification
- vi) Create a well-organized resource full of useful data and information to refer back to.

2.3 Satisfaction of Customer

Satisfaction is one of the most frequently occurred characteristics in the key component commitment according to Ruyter et al. (1998). It means that each of the company need to build a strong relationship with the customers in order to make them satisfy with their services or products. By having may satisfied customers, a company can maintain its stability in the market as customers keep buying the products and satisfy with the product. Customer have many options to choose whether to stay with the brand or even to purchase with other brand every time they want to purchase the same item. If customers can give a good commitment to the company, it is considering as an opportunity for the company to know it is difficult to have customers that can commit with the company as they have power in choosing other brands. Thus, it

is important for the company to conduct or run any marketing event that shows its appreciation towards customers.

2.4 Market Segmentation and Individual Customer

Segmenting right customers into the right group will help company to identify its target customers to deliver its services and selling its product. By segmenting customers, a company can avoid some risks that can cause the failure in marketing campaign or facing losses just because of wrong target customers. It is cornerstone of marketing strategy and can result in a more effective use of marketing and promotional dollars (Park and Yoon 2009). Therefore, by using database marketing into market segmentation can help company to get a better understanding about the nature of customers and the markets thus it can develop an appropriate marketing campaign that suit with the customers and at the same time can produce products that require by customers. Another important thing in database marketing is about the individual customer. Tudjarov (2009) stated that personalized customization enables customers to intervene in the design process of the product to obtain their own custom products which have strong personality attributes or match their demand. By individualize customer, it can make the customers happy and really satisfied with the company. As most company in fashion industry nowadays are looking for one-to-one marketing (Buttle 2000; Hamil 2000) where it strengthens the relationship between the company and customers, they need to recognize which customers that want to be personalized thus it can build loyalty of customers towards the company.

2.5 Customer's Preferences

The customer preferences in fashion industry are crucial as companies need to identify what is the requirement needed by customers so that the company will not produce that neglected by them. Sondhi and Singvi (2006) stated that fashion apparel consumers seem more likely to make "trade-offs" between different garment attributes, such as durability, comfort and quality and colour, fashion and style. Company should know how their customer evaluate a product before purchase. It means that the company need to understand the reason on why customers prefer to choose the product instead of other products. Generally, customer will evaluate the product based on the safety and quality that bring by the product which is reaches the consumer expectation of quality cues. This statement approved by Sivadas and Backer (2000) which defined the perspective of consumer demand as product attributes, which are classified into search, experience and credence attributes.

3 Findings

Based on Table 1 show that the correlation of the benefit of database marketing. From the table showed that there is correlation between dependent variable and independent variables. It shows that customer’s satisfaction has correlation with the benefit of database marketing which is represented by $r = 0.969$. The table also shows that segmentation and individual customer and also customer’s preference has moderate correlation with the benefit of database marketing that was presented as $r = 0.643$ and $r = 0.695$ respectively. Based on the result above, it shows that all of the independent variables have a positive relationship with dependent variable. The result shows that the strongest benefit for database marketing is customer’s satisfaction and the weakest benefit for database marketing is segmentation and individual customer.

Based on Table 2, a low p-value which is less than 0.05 ($p < 0.05$) shows that the variable is significant and it have a positive related with dependent variable. This table consists of unstandardized coefficient (B and Standard error), standardized coefficient (beta), T value and also the significant value for answering the objective number one.

According to Table 2, the p-value of the customer’s satisfaction is 0.000 which is lower than 0.05. It shows that customer’s satisfaction has a significant variable towards the benefit of database marketing. From the result above, it shows that H1 is acceptable and H0 is not acceptable.

Table 1 Correlation of benefit of database marketing

		Benefit of database marketing	Customer’ s satisfaction	Segmentation and individual customer	Customer’s preference
Benefit of database marketing	Pearson correlation	1	0.969**	0.643**	0.695**
	Sig. (2-tailed)		0.000	0.000	0.000
	N	100	100	100	100

Table 2 Coefficient for benefit of database marketing

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.345	0.120		2.868	0.005
	Customer’s satisfaction	0.860	0.035	0.925	24.740	0.000
	Segmentation and individual customer	0.035	0.030	0.039	1.157	0.250
	Customer’s preference	0.029	0.038	0.028	0.756	0.452

Next, the p-value for segmentation and individual customer is 0.250 which is higher than 0.05. It means that segmentation and individual customer is not significant variable towards the benefit of database marketing. It also shows that the HO for this variable is accepted and the H1 is not accepted. Based on the table above, the p-value of customer's preference is 0.452 which is higher than 0.05. the result shows that the customer's preference is not significant variable towards the benefit of database marketing.

Therefore, based on the findings, it can be deriving that the benefit that influence the database marketing is maintaining customer's loyalty for fashion industry is the one that have a significant p-value with the benefit of database marketing. Based on Table 2, only customer' satisfaction can be considered as the most influence benefit to database marketing in maintaining customer's loyalty for fashion industry as it has a significant p-value with the benefit of database marketing which is 0.000. both segmentation and individual customer and customer's preference cannot be considered as the most influence benefit to database marketing as they both have significant p-value which is 0.250 and 0.452 respectively.

The most powerful benefit that influence the database marketing in maintaining the customer's loyalty for fashion industry is the one that have the highest unstandardized coefficient (B) value with the benefit of database marketing. Based on Table 2 the findings show that only customer's satisfaction proven to be a significant to influence the benefit of database marketing in maintaining customer's loyalty for fashion industry. The table also shows that customer's satisfaction has the highest unstandardized coefficient (B) with the benefit of database marketing whereby the value is 0.860. This would answer the research objectives number two in order to recommend the best method to improve database marketing proposing to maintain the customer's loyalty.

In another word that company should ensure that customers will always satisfy with the services that serve by the company in order to get a good cooperation from the customers regarding the data information. This implies to get a complete and accurate data customer; company need to know on how to persuade its customer to give cooperation regarding this and one of the suggested ways is to make them cooperate is by making them comfort and satisfy with the company products.

Besides the company can utilize the internet and technology by upgrading the server used to ensure that the company can easily connect with customers. It means that customers will always get the latest information from the company as well as company can easily get the update about the customers. Wright and Fletcher (1998) describe that Database Management as the ability to utilize the potential of computer technology to facilitate more personalized customer communication in a productive and cost-effective way.

Next, company also should have a high level of responsibility towards the privacy information and make customers trust the company. This is because when the customers feel suspicious and discomfort with the company, it will lead them to refuse to give their information. The company should know what type of data that should be collected especially for privacy data.

4 Discussion and Recommendation

Based on this research, the findings shown that the most significant variable is customer's satisfaction. If the company do not use the database marketing well, it can affect the level of satisfaction of customers where customers may turn to other brand if they dissatisfied with the company's performance. Customer satisfaction is an important measure of the range of products and services that a company provides to meet customer expectations (Ewieda et al. 2021). Thus, customer satisfaction will help to ensure customer loyalty and to move to serve supporters for higher quality, better offers or more advantages (Ewieda et al. 2021).

As the customers will purchase products every day, it means that the new data will exist every day according to the number of customers that purchase products. Therefore, the person in charge of the company need to ensure that the data will be updated into the database frequently and the number of data added into the system is tally with the number of customers that purchase with the company's product.

Besides that, as nowadays most of the company will use system to save all of the data which it can avoid the data from missing and at the same time company can avoid from waste money to build a space for all of the data. When the company have employees that can handle the database well, they can use database system to handle the database of the company.

The data for this study is limited to fashion industry. Therefore, it is suggested to expand the study to other industry such as banking industry, retailing industry and others. For further research it is also suggested to focus on business to business (B2B) customers and other methodology of analysis to ensure the quality and reliability of the data.

5 Conclusion

This research consists of three independent variables which are customer's satisfaction, market segmentation and individual customer and the last one is customer's preference. Based on the results showed that only customer's satisfaction has significant influence towards dependent variable. As for correlations coefficients, all the independent variables recorded have positive correlations towards dependent variable. Therefore, the most powerful benefit that can influence the benefit of database marketing is customer's satisfaction. Thus, by keep improve the performance of customers satisfaction can lead the company to improve its database marketing as it will be easier for the company to keep track on their customers purchase behavior and preferences especially in fashion industry.

There are several recommendations and suggestions for the company to improve their database marketing such as educate employees about database marketing in terms of the importance, usage and benefit, keep update the data in database marketing because it will the company to measure its performance and at the same time



predict their customers performance. The other recommendation to used expertise in managing the database marketing which can avoid from untrue data from customers that can lead to wrong marketing strategies and to ensure the privacy and security of the customers' data.

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Certification Mark for Sabah Handicrafts



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Abstract Craft customers, particularly tourists visiting Sabah, are perplexed because they cannot make the proper decision on craft selection because the government does not guarantee the authenticity of craft objects offered in the local market. Sabah currently lacks on monitoring authority that can ensure the authenticity of native artisan items. To address this issue, a certification marks needs to be proposed to aid, safeguard and promote the growth of handicrafts in Sabah. This certification mark may be registered for through the Malaysian Intellectual Property Corporation (MyIPO) under the Trademark component. Among the objectives of this proposed Handicraft Certification are: to assist customers identify genuine local handicraft products (Sabah) through the marking “Authentic Sabah Crafts”. Secondly, to protect the interests of craftsmen and entrepreneurs in the state of Sabah. Thirdly, ensuring the reputation and quality of Sabah crafts are at a satisfactory level. The evaluation criteria for obtaining this certification are divided into five criteria, namely, motifs, patterns, colors, materials and processes in Sabah handicrafts produced by locals. This certification will help local craftsmen to further increase their knowledge of intellectual property protection and its potential that can be applied to their products. With that, the craftsmen will be more sensitive to their rights as guardians of the ancestral heritage and defend the quality of crafts in Sabah.

Keywords Handicraft · Handicraft industry · Certification mark · Sabah

1 Introduction

Handicraft producing is an important part of the tourism industry all over the world, serving a dual purpose: first, to help improve the local economy, and second, to

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allow visitors to take a memento of their visit with them, ultimately to encourage a return visit or to promote the locale to other tourists as a technique of word-of-mouth publicizing (Mustafa 2011). The handicraft industry is significant and has been recognised globally as a medium for poverty alleviation in terms of income and employment creation. This sector is also considered as a means of preserving and promoting cultural and creative practises, since traditional crafts are passed down from generation to generation using various techniques and abilities. Many countries' cultural legacy is preserved through their handicrafts (Wang 2018; Yang et al. 2018).

2 Protecting Handicraft Industry in Sabah

Handicraft activities and promotion is being monitored by Perbadanan Kemajuan Kraftangan Malaysia as a governing body at the federal level, or also known as Kraftangan Malaysia. This organization was established under Act 222, Perbadanan Kemajuan Kraftangan Malaysia Act 1979. Kraftangan Malaysia role is to develop, activate, restore traditional skills and craftsmanship through the use of modern production, management and marketing methods to improve product quality. for local and overseas markets (Standard Kraftangan Malaysia 2020). The definition of handicraft according to Kraftangan Malaysia is an artistic product that has a cultural appeal as a result of a process that depends solely or in part on hand skills or with the help of manual tools/machines. To this extent, Sabah, does not have a monitoring body that can monitor the authenticity of local craft products in Sabah.

On the other hand, Lembaga Kebudayaan Sabah as the state governing body, does not have a monitoring body that can monitor the authenticity of local craft products in Sabah. However, the entity "Handicrafts" are mentioned in the Sabah State Cultural Board Enactment (Amendment) 2010, Section 24 (c) which states the functions of the Board as "to assist in, and encourage the development of local ethnic handicrafts" provide a clear picture of the Board's role in protecting handicrafts locally produced by ethnicities in Sabah.

While the value of the handicraft industry has long been recognised, this sector has faced a number of challenges, including industrialization and globalisation (Braun and Clarke 2006), as a result of which handicrafters were unable to compete with well-organized industrial units and were forced to sell their goods at lower prices. Industrialization has altered consumer lifestyles and requirements, and as a result, handmade items are gradually losing market share.

As commercial items became more advanced, consumers of handicraft products declined, causing artists to quit their businesses and relocate to cities to earn a living. As a result, fewer younger generations are participating in the practise, and many old craftsmanship skills and methods have disappeared (Mohtar 2008). In terms of marketing and social advantages, handicraft items in Sabah frequently face competition from counterfeit items perceived to be authentic from Sabah, which are now offered in the craft market. As a result, crafts declined and lost their role in society, whereas manufactured crafts objects thrived due to their superior material durability

and economic benefits. This heritage must be discovered and conserved in an era of globalisation and fast economic development; else, the handicrafts sector would cease to be visible. As a result, these proposed certification on Sabah handicrafts were beneficial.

Therefore the objective of research on handicraft certification is to develop guidelines that helps in:

1. recognizing product that reflects the identity of Sabah.
2. encouraging crafters to produce crafts that could meet the current market demand and trend.
3. initiating branding for local retail tourism industry.
4. encouraging tourist to buy product produce by the locals.
5. reducing the influx of crafts from outside Sabah coming to Sabah and sold as “Sabah image”.

In examining these criteria, we are focusing on two types of Sabah handicrafts, namely woven and weaving.

2.1 Woven

Woven is the process of weaving two sets of threads at right angles to create a rough or fabric-shaped surface. The first set of yarns that determine the length and width of the fabric is called the loosened yarn. The second set of yarns used to weave a wide pattern of fabric called feed yarn. Weaving is the oldest handicraft in the world believed to have started 20 000 years ago.

2.2 Weaving

Bamboo weaving such as baskets, stalks, nyiru and bubuh. Weaving is the process of scoring or crossing materials from plants to form a strong and usable clump. Suitable plant materials used for weaving other than bamboo are rattan, roots, blades, pandan, mengkuang and there are also some other dried plant materials. This section elaborates on the different research methods used throughout the project and participating respondents.

To safeguard traditional handicrafts, certification measures must be put in place to preserve the viability of heritage by sustaining continued practise, the preservation of the heritage production process, and the transmission of knowledge and skills through education to future generations.

3 Literature Review

Certification Mark has been around since 1949 (Taylor 1958). According to literal interpretation, by Taylor, two components are required for a mark to be classified as a certification mark: (1) the mark must attest the existence or absence of certain product or service qualities; and (2) the mark must be used on the products or services of one or more people other than the mark's owner. Certification mark is seen as a viable option for a business to show excellent product quality (Hakenes and Peitz 2009). Previous research has looked at the impact of certification mechanisms on demand for higher-quality foods, such as fruits and baby food, in developing countries (e.g., Masters and Sanogo 2002; Birol et al. 2015). However, to the best of our knowledge, this is the first research in which branding/labeling and certification are being used especially in Malaysia.

Certification marks guaranteed that items were created using traditional materials and processes, while also maintaining the distinct characteristics, composition, and colour of the wares. A research on "Protection of Handicrafts in Light of Jordanian Intellectual Property Laws" highlighted that the certification system authorized the systematisation of handicrafts and goods of national heritage, which were identified by a specifically designed emblem. There are 72 approved, historically established traditional handicrafts and over 2,700 recognised national heritage objects made by 600 accredited artisans (Madi 2015).

Similarly, in Sabah, handicraft industry is a major source of income for rural communities. However, observers of the handicraft sectors, Persatuan Pengusaha Kraf Sabah (PPKS) a newly formed registered NGO, predict the number of small businesses of handicraft production is likely to decline in the future. Handicraft producers in Sabah often struggling with counterfeit products considered genuine from Sabah, which are sold in the craft market at present (Anne Antah, personal communication 2020). Therefore, by implementing the branding certification will be the precise approach. This certification mark may be registered for through the Malaysian Intellectual Property Corporation (MyIPO) under the Trademark component and new branding approach will help to sustain and retain the authenticity of the handicraft product. Furthermore, this will help to boost and promote the handicraft sector.

4 Research Methodology

Handicraft producer's area has been recognized through the lists provided by the Sabah Tourism Board subsidiary, Kadaiku. A qualitative approach of data collection method will be applied. There are a variety of methods of data collection in qualitative research, including observations, textual or visual analysis (eg from books or videos) and interviews (individual or group). However, the most common methods used, are interviews and focus groups (Freitas et al. 1998).

The main purpose of focus group research is to draw upon respondents' attitudes, feelings, experiences, and reactions in a way in which would not be feasible using other methods, for example observation, one-to-one interviewing, or questionnaire surveys.

For this research, the methods utilised were focus group discussions. Below are the explanations of how qualitative analysis each activity conducted with respondents:

4.1 Literature Review Analysis

A literature analysis on the handicraft certification was conducted in order to get some insight into this industry in the context of the Malaysian environment. The scope of this search comprises definitions, present industry sub-sectors/areas of study, and foreign instances of industry segmentation of its sub-sectors. The findings of the literature review were utilised as a guide to determine the scope of the study and analysis.

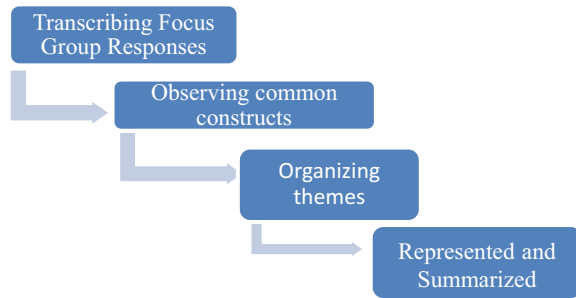
4.2 Brainstorming with Industrial Players

Experts from the handicraft industry (government and non-government agency) were selected for additional conversation and engagement. In this discussion brainstorming were applied to develop on the Focus Group questions,. The brainstorming were attended by the development panel members who discussed the different characteristics of selected handicrafts (which in this study is woven and weaving crafts), steps and areas. The facts obtained during the literature review were also discussed and presented to the panel members.

4.3 Focus Group Discussion

Gibbs (1997) stated that focus group discussions are a common qualitative approach for getting a comprehensive understanding of social issues. To begin with the session, a brief introduction of the approach being explained for first-time users. The discussion is to find out about the process of producing the weaving or woven handicrafts. Members of the focus group were also asked to accept the perspectives of others, since some may have opposing views or ideas, which is a good thing in this discussion group. Each and every participants in the focus group be given an equal opportunity to participate. During talks the reporteure shall keep confidential on everything you say in this discussion.

Fig. 1 A representation of the steps in the data analysis



4.4 Transcribe of Verbal Data

Once the above flow completed transcription will be done. The audiotapes from the focus group session were examined and evaluated in order to assess the various respondents's and language use. Durin the transcription of the verbal data, the researcher observed common constructs (words) used by the respondents in describing the process of producing the woven and weaving handicrafts. The key characteristic being examined was the commonality of dominant, frequently occurring constructs including synonyms as alternative forms of expression. The steps in the analysis process are illustrated in Fig. 1. A good qualitative analysis will help researcher gain a better grasp of the concepts that are essential to their target audience (Stringer 1984). In the transcription process, the researcher was able to get acquainted with the interview information.

The outcome of focus group uncovered types of motives of woven and weaving handicrafts. Based on the focus group discussions, the chained pattern and the dispersed pattern are the most often used weaving patterns. The woven process, on the other hand, contains Striped Pattern, Round Shape, Oval Shape, and Chained Pattern. Third, in terms of the colour component, the colours that are being depicted for the weaving process are mostly linked with people who wore the weaving fabrics; traditional colours: Yellow (Sarip descendants), Green (Datu descendants), Red (Courage), White (Purity), and Orange. Woven process fabrics utilise traditional colours such as black (using smoke and broom on bamboo/bamboo); red (using Noni root latex on rattan); and other colours mostly from Dylon Permanent Fabric Dye. Fourthly, material or fabric used for weaving are mainly from Gold thread, Silk thread, Nylon/ Polyster, Cotton, Rose thread, Wool which easily available in the market, whereas woven materials such as Rattan, Bamboo tumbotuan, Bamboo tulu, Bamboo poring, Bamboo poos, and Salingkawang. The majority of the material for woven items is readily available in the local forest as their primary source. Finally, the weaving process is completed with the use of fodder (weaving tools), Belira, and paddle board and wood; and using wood -based weaving equipment namely Babaal Menagol Anсад and Livoon.

Table 1 Themes commonly associated with handicraft making in Sabah

Items	Weaving	Woven
Motives	<ul style="list-style-type: none"> • Unsud • Daun ubi • Bunga manggis • Agapas • Kalingowan • Anunan • Tuara • Tikar-tikar • Sumping Kundur • Pinang Apat/Pinagapat • Cincin Sulaiman • Buah Delima • Apir • Apir-Apir bercantum • Tali-Tali • Lipan-lipan • Linsu • Kinayupu • Baklali • Bunga Emas • Sinugi • Bagadat • Siku • Bunga Berantai • Benurunsi • Binongkok • Binorokidung/Rinugading • Binugang • Binutuan • Inansal • Inompuling • Inugarang • Inumpizos • Kinadamazam • Kiambang Kiapu • Kinulit • Lijawan • Linimut • Linopung • Linopung do kisorod • Livato • Miniyamban • Mitotorungak • Monsimuung • Pinodkimo • Sinikuvan • Sinopung • Sinubung • Sinusuk rabung • Tinikou Sada • Tiningulun • Tinolutug Tinubou • Tinukad 	<ul style="list-style-type: none"> • Nurugan • Nenteruludan • Nolihan • Tina tapai • Lampun • Binusak lampun • Binulinsi • Binulan • Ensiu • Kinakatam • Inulos Mondou • Inumbir • Iningkakat • Inalik Sandai • Kinikuo • Kinikipas • Linampinak • Liliku • Minangulop • Minangkiip • Matahari • Minanganyam • Nahalian • Nahulalan • Nantuapan • Nahantisan • Nambuyunan • Naturangon di Laing • Notong Ngulu • Nilikar Amatu • Nilapan • Nilampong • Pinansit • Pinungoh langsung • Pinaluaf • Pinungoh Nandayunan • Pinungoh Nihilinduk • AR-AR • Sinapimpin • Sinawot • Simulayau Nandikar • Tinipalang • Sinusu • Sinalari • Sinatur • Tinahung • Tinalantar • Tinalaruo • Tiningaulun • Vinakait • Vinangkawot • Vinalang • Simulayau Pait

(continued)

Table 1 (continued)

Items	Weaving	Woven
Patterns	<ul style="list-style-type: none"> • Chained Pattern (Corak berantai) • Scattered Pattern (Corak bertabur) 	<ul style="list-style-type: none"> • Chained Pattern (Corak Berantai) • Striped Pattern (Corak Berjalur) • Round Shape (Bentuk Bulat) • Oval Shape (Bentuk Bujur)
Colours	Traditional colors: <ul style="list-style-type: none"> • Yellow (Descendants of Sarip) • Green (Descendant of Datu) • Red (Courage) • White (Purity) • Orange 	Traditional colors: <ul style="list-style-type: none"> • Black color (using smoke and broom on bamboo/bamboo) • Red color: Noni root latex is used for rattan) • Other colors: Dylon
Materials	<ul style="list-style-type: none"> • Gold thread • Silk thread • Nylon/ Polyester • Cotton • Rose thread • Wool 	<ul style="list-style-type: none"> • Rattan • Bamboo tumbotuan • Bamboo tulu • Bamboo poring • Bamboo poos • Salingkawang
Processes	- Using fodder (tools for weaving), Belira, paddle board and wood - Weaving will be made using wood -based weaving equipment namely Babaal Menagol Anсад and Livoon	Nyiru - For the manufacture of nyiru, the skin and the contents of the bamboo will be separated. After being woven and tied using rattan, the nyiru will be dried Sirung - it will be woven using bamboo and tied using rattan. The process is the same for the inside but using bamboo filling and then join the two parts using a rattan Kelarai -made of bamboo will be woven and will be connected using scissors, pliers and ice skewers. To tie each weave, rattan and interlocking will be used

The researcher was able to become acquainted with the interview information and immerse herself in the data acquired throughout the transcribing process. The researcher observed an array of similar constructions (words) used by respondents in characterising the handicrafts making. The essential characteristics being examined was the dominant commonality, including synonyms as alternate ways of expression, was the primary attribute that being investigated. The researcher extracted and recognised recurring themes from that content. A theme is an important assertion that reflects a certain recurring reaction produced through transcription (Braun and Clarke 2006, 2014).

In this study, themes commonly associated with handicraft making in Sabah were on motives, patterns, colours, materials and processes.

5 Proposed Evaluation Criteria for Certification

From the findings, the themes appeared from the qualitative study will be used as the basis for certification handicraft in Sabah. The handicraft will be measured based on criteria in Fig. 2, and criteria from Table 2, whereby the sum of accumulated marks for each handicraft product will be based on the five evaluation criteria met. For handicraft products that attained high points between 80–100 points, certification of 100% Authentic Sabah craft will be awarded (See Table 3: Evaluation Criteria Table).

Method of calculation and evaluation for handicrafters categorization of handicraft products for each factor (weightage) is according to the scoring scheme as in Table 3. Marks in percentage for each factor:

Feature 1: Motive (calculation of product criteria refer to Table 2) Percentage (weightage) for each parameter is 20%.

Feature 2: Pattern 10% Form 10% (Percentage (weightage) for each parameter is 10%, which brings the total of 20%.

Feature 3: Colours (50% of the colours must be from the traditional colors of Sabah) total of 20%.

Feature 4: Materials (whether from natural resources or imported sources) total of 20%.

Feature 5: Process (referring to how the handicraft being made; by hand skills or machine assistance).

If the product produced by the handicrafters does not achieve a minimum score of 80/100 points, but the product meets all the criteria of authenticity, then the handicrafters is only eligible to be evaluated in terms of handicrafters classification as 100% as Sabah Craft.

Unfortunately, the main challenge of certification is that handicrafters must bear the financial burden. It can be costly, and there are numerous obstacles for individuals or small handicrafter organisations who want to be recognised but lack the necessary funds or training. The protection of national handicrafters as well as the protection

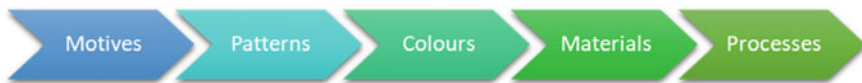


Fig. 2 Five evaluation criteria for certification

Table 2 Features and Description of 100% authentic Sabah Craft categorization

Category	Features and description
100% Authentic Sabah Crafts	<ul style="list-style-type: none"> • Markers (stickers or tags) • Genuine crafts from Traditional Knowledge and Sabah Traditional Cultural Statement • Using natural resources in Sabah

Table 3 Evaluation Criteria

No	Evaluation criteria	Definition of features and description	Assessment (%)
01	Motive		20%
02	Pattern	Pattern	20%
		Form	
03	Colours	50% from the traditional colors of Sabah	20%
04	Materials	Natural resource	20%
		Import source	
05	Process	Hand skills	20%
		Machine Assistance	
Total			100%

of national handcrafters is the subject of this research. Protecting traditional crafts, carrying out steps to ensure the sustainability of heritage by providing continuous training, and preserving heritage manufacturing methods.

6 Conclusion

The leading objective of this study was to implement certification for Sabah Handicraft. The themes that appear from this study were constructed by synthesizing the frequency of occurrence of the common terms and sorting them into categories, the work also provided material on which future studies can be built. That is, themes that commonly associated with handicraft making in Sabah were on motives, patterns, colours, materials and processes. As these assessments and policy decisions are formulated, it is potentially possible to use the thematic issues developed through the qualitative approach, and presented here as a certification guideline for the future of handicraft industry in Sabah. Additionally, the work presented from this study can also be regarded as a preliminary tool to guide further work in future study based on questionnaire and interview methods.

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Commercial Marketing and Entrepreneurial Talent Training of the Music Industry Based on 5G Technology



Tonghui Sang  and Cik. Kanit Sripaoraya 

Abstract Through the analysis of the current situation and economic value of the development of the music culture industry based on 5G technology, the use of case studies, data analysis and comparative analysis and other research methods were used. The research shows that the music culture industry has developed rapidly in recent years, and the overall scale of the industry has increased rapidly. In 2020, the total revenue of the global recorded music industry was 21.5 billion USD (United States dollar), a year-on-year increase of 7.7%. It is predicted that by 2023, the economic volume of 5G technology penetration will exceed 4.8% of global GDP. From 2019 to 2028, global wireless media will generate a cumulative revenue volume of about 3 trillion USD. Original music ecology has been increasingly improved, and the music culture industry and other industries have achieved confluent development. The development path is to create original music factories through the mode of shared economy. Music education resources have been further integrated. It has become a trend to cultivate excellent compound music talents. Increasing the protection of the copyright of video music works has become the key to discovering and inheriting national music cultural resources.

Keywords 5G technology · Music culture industry · Entrepreneurship · AI & VR new technology · Compound talents in the music industry

With the rapid development of the global market economy and the application of 5G technology, the music culture industry is also facing many problems such as the lack of perfection of the video music copyright protection mechanism, the lack of innovation in the marketing model of music products, and the less optimistic ecological environment of music education (Chalmers et al. 2019; Haynes and Marshall 2018; Williams 2009; Coulson 2012; Scott 2012). The adoption of regional culture

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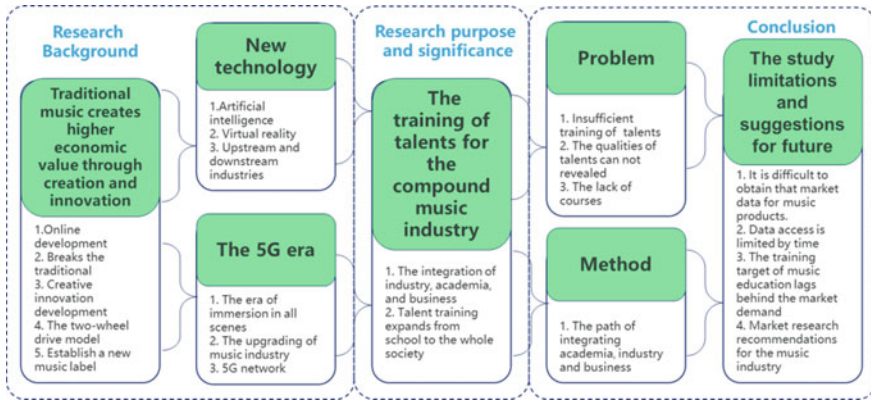


Fig. 1 The research structure of the commercial marketing and entrepreneurial talent training of the music industry based on 5G technology

and music industry communication and communication has become a new mode of development, so that both the mode and speed of cultural communication have undergone an actual shift under Internet information technology (Coulson 2012; Kokkola 2013). At the same time, the music industry is also facing reforms that industrial forms, in which industrial forms, consumption forms, and modes of transmission are gradually integrated into industries such as digital information and media to achieve a digital music dominated mode of development (Edmondson 2008; Wilhelm and Knight 2021; Schoeb and Zosso 2012). Therefore, under the conditions of modern market economy and technological development, the music industry must continuously draw on the advantages of other industries and integrate them, so that the development of the music industry can form diversified innovations and meet the needs of the public.

The commercial marketing and entrepreneurial talent training of the music industry based on 5G technology will be studied in this paper. The research structure is shown in Fig. 1.

1 Traditional Music Creates Higher Economic Value Through Creation and Innovation

According to the year-end report of the live entertainment industry trade publication Pollstar, affected by the global epidemic, the global live music industry will lose more than 30 billion USD in 2020, including 9.7 billion USD in box office sales. It is expected that the industry’s box office in 2020 will reach a record 12.2 billion USD. But after the industry was completely closed in March, Box office lost 9.7 billion USD. Faced with such a dilemma, the global music industry is actively seeking innovative development.

1.1 The Global Music Live Performance Industry Seeks Online Development

Live Nation's U.S. headquarters attaches great importance to the music and performance business. Not only does the company have a film and television business department, an artist management department, but even an "EDM department" specializing in the field of technology has been opened in the UK branch, which operated and managed several Club and open-air theatre at the same time. In 2019, Live Nation's US headquarters also announced a plan to participate in all performances and events in 29 amphitheatres in the United States in 2020 (Holmstrom 2019). However, epidemic situation led to the cancellation of 97% of the theatrical performances in the United States in 2020 according to the "Americans For The Arts" report.

This will inevitably deal a heavy blow to the US headquarters of the international performance giant Live Nation, not only in almost all music festivals and sports. The events have been shelved, and they have to take pains to deal with the prosecution for failing to provide customers with full refunds in time. According to a recent financial report released by Live Nation Entertainment, as of the third quarter of September 30th 2020, the company's revenue was 154 million USD, down 95% from last year's 3 billion USD (Grzegorek 2010; Negus 2019). Since Live Nation's US headquarters suspended all offline performances in March 2020, the music industry has been suffering. Despite efforts to drastically cut expenditures, operations in the third quarter of 2020 lost hundreds of millions of dollars year-on-year. The foreign epidemic continues to obliterate the most profitable performance season for music festival sales staff, which is sighing. However, Fuji Tailai always seems to be the law of everything. The foreign live broadcast industry is undergoing unprecedented disruptive changes-Live Nation's US headquarters has not stopped online music performance activities (Rivera and Croes 2019; Ghazzawi et al. 2014). Even at the three-day "Wireless Connect" music festival in July 2020, an amazing virtual scene was built for Ravers and his family members at home through the highly forward-looking MelodyVR technology.

Studies have shown that offline music performances are forced to be suspended, reminding people that it is outdated to earn income through traditional methods. Live Nation's U.S. headquarters is no longer looking forward to it, and instead actively explores new ways. The word "Live" in its name has also changed from "live broadcast" to "live experience-like live broadcast", which stands out in the music scene and become a leader in the industry. In 2020, the unexpected epidemic also brought unexpected changes to electronic music and the entire music industry, but it is not known whether the future is bright or dark. Some are just as big as every country and small as everyone is trying to restore the music scene.

1.2 Tencent Music Breaks the Traditional Music Development Model

The latest news released by “Rolling Stone” magazine pointed out that tencent Music will break the traditional music development model and seek new development in the new era (Lippmann and Aldrich 2016; Hamelman 2019), and Tencent Music is very effective. Tencent Music Entertainment Group has broken the traditional music development model by renewing its long-term strategic partnership licensing agreement with Warner Music. At the same time, the two sides will jointly set up a brand-new music factory. In Rolling Stone magazine’s view, Tencent’s music is showing increasing strength in the global music industry (Clauss et al. 2019; Lo et al. 2018).

According to the data analysis in Fig. 2, in 2020, the total revenue of Tencent Music Entertainment Group increased by 14.6% year-on-year to 29.15 billion CNY (ChiNa Yuan).

Tencent Music Entertainment Group released its financial report for the second quarter of 2020. Total revenue increased by 17.5% year-on-year to 6.93 billion CNY, of which online music subscription revenue increased by 64.7% year-on-year to 1.31 billion CNY, and net profit was 953 million CNY. The net profit is 1.15 billion CNY. The number of paid online music users reached 47.1 million and hit a record high, with a year-on-year growth rate of 51.9% continuing to accelerate. Total revenue in

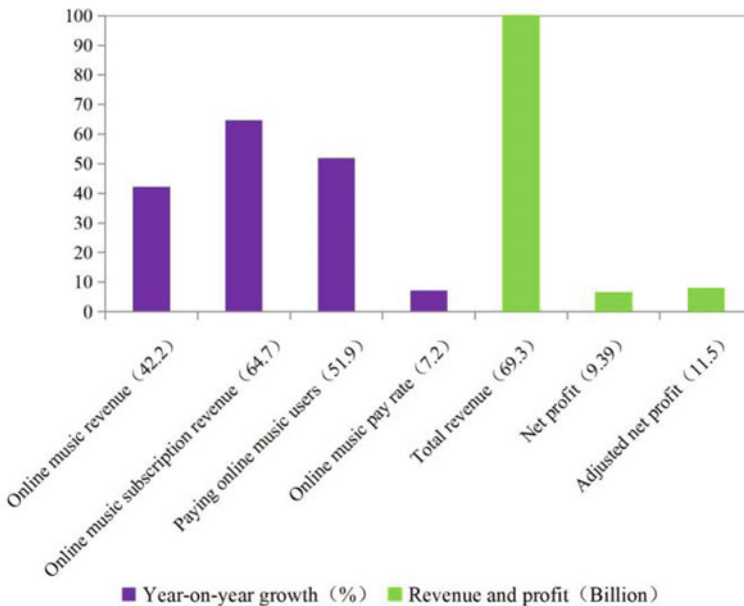


Fig. 2 Total revenue of Tencent Music Entertainment Group in 2020

the fourth quarter increased by 1.43% year-on-year to 8.34 billion CNY, of which online music subscription revenue increased by 41.9% year-on-year to 1.58 billion CNY, and advertising services increased by more than 100% in the fourth quarter of 2020. Online music subscribers accounted for 56 million, up 40.4% year-on-year, with a net growth of 4.3 million and a rate of 9% higher than 8% in the third quarter and 6.2% in the same period in 2019. All year round, it has maintained its consistent stable and high growth trend, showing brilliant performance.

The US Goldman Sachs group has been reporting on the global music industry since about 2016, and has always maintained a good attitude towards Tencent Music (Lartey 2020; Keenan 2016). Goldman Sachs had data that said that by 2030, there will be 1.150 billion subscribers to streaming music, while China-based Tencent Music Entertainment Group is rising to become the third largest music platform in the world in 2018, accounting for 11% of global music paying users, and is expected to increase to 23% by 2030.

1.3 Tencent Music Opens the Road of Creative Innovation Development

In terms of innovative business, Tencent Music has vigorously promoted the ecological layout in the long audio field and achieved important milestone results by synergizing with existing music products and launching independent long audio products. In the fourth quarter of 2020, the number of long audio albums increased by 370% year-on-year, and the long audio MAU penetration rate increased from 5.5% in the same period last year to 14.8%. The average daily usage time of long audio users continued to increase. At the same time, Tencent Music has built an innovative performance ecology combining online and offline as a new engine of growth. The innovative performance brand TME live has held more than 50 online concerts since online. Among them, 25 concerts were held in the fourth quarter, including well-known musicians and performance IP such as A-mei, mayday, Stefanie Sun, Billie Eilish and Tomorrowland. Thanks to the increasing brand awareness, TME live continues to attract well-known brand sponsorship, which further lays an effective foundation for its commercialization prospects.

1.4 The Two-Wheel Drive Model Creates Higher Economic Value for Tencent Music

Tencent music has built a diverse ecosystem and a whole new value chain for the digital music industry: On the consumer side, to help artists realize more creative content value transformation; and on the communications side, it helps artists connect more directly with consumers; on the content side, in addition to helping the header

content create incremental value, it also helps more long tail music content connect with the market audience (Astapov and Liu 2020).

The two-wheel-drive model of “online music + social entertainment” has strengthened Tencent Music Entertainment Group’s ability to withstand stress under the major examination of the epidemic. According to the 2020 Q1 financial report data, Tencent Music’s total revenue increased by 10% year-on-year to 6.31 billion CNY (891 million USD), and online music subscription revenue increased by 70.0% year-on-year, following the 48.3% and fourth in the third quarter of 2019. The quarter’s 60.1% followed a further increase; while online music paid subscribers reached 42.7 million, a year-on-year increase of 50.4%. And this pioneering two-wheel drive model has become a reference sample for overseas counterparts.

In summary, the digital music payment model established by Tencent Music Entertainment Group has gradually become one of the profitable weapons of the music industry and has played an important role in promoting the solution of the long-term piracy problem in the music industry. In the strategy of promoting music payment, large record companies have once again seen the economic prospects of expanding distribution. On the basis of the two round drive model, the Tencent Music Entertainment Group successfully emergence, and further focuses on long-term value drive and innovation, not only to continuously improve the traditional business, but also to layout the new business based on traditional business extensions, explore many blue sea areas such as long audio, music dissemination, and TME live, and solve the all industry chain landscape and adhere to long-term sustainable development strategies, Creating new future value growth points for the group.

1.5 Establish a New Music Label Through “Content Co-creation”

As early as January 2018, Tencent Music established a joint venture with Sony Music, which is also the world’s three major record companies, to establish an international electronic music label Liquid State (Melnik 2019). It brings together the content creation and production expertise of the world’s top record companies, as well as the powerful marketing and digital services of the world’s leading digital music platform. Liquid contributes to the incubation of Asian electronic musicians and the development of global music distribution cooperation through the collision of Eastern and Western music cultures. At present, Liquid has signed a contract to cooperate with the world’s top 100 DJ R3HAB and Alan Walker, and has created and incubated a newcomer of CORSAK electronic music. Its song “Su” has achieved hundreds of millions of plays.







Tencent music, with its leading concept of content operation, has been associated with the three major global record companies: global music, Sony Music, and Warner Music. Also established a long and solid collaboration with record companies such as YG entertainment, SM Entertainment, JYP entertainment Korea’s three

major music entertainment companies, and the top Chinese record companies such as Jyweill music, Trusting music, and Emperor Entertainment. Users are provided with libraries of more than 40 million first edition music traces (Jia et al. 2018). However, following a multi-year strategic collaboration with the Universal Music Group, Tencent Music Entertainment Group announced a formal strategic collaboration with KOBALT music, cooking vinyl, genie music, and GMM Grammy to engage in film/TV cooperation with mango TV. The high-quality content of the top manufacturers, record companies and video platforms worldwide will be comprehensively put on the platform of vacating music to flag QQ music, cool dog music, cool me music, and universal K song. At the same time, the Tencent Music Entertainment Group will also open the value co creation and cooperation model of comprehensive innovation with the related five major brands, and rejoin global music to build a music factory, as shown in Table 1.

With its leading content operation concept, Tencent Music has already cooperated with the world's three major record companies, Universal Music, Sony Music and Warner Music. It has also established a long-term and stable relationship with the three major music entertainment companies of YG Entertainment, SM Entertainment, and JYP Entertainment in South Korea, as well as top Chinese record companies such as Jewel Music, Believe Music, and Emperor Entertainment. A total of more than hundreds of music labels and record companies have established long-term and stable Partnership. Provide users with more than 40 million genuine music libraries (Jia et al. 2018). After renewing its multi-year strategic cooperation with Universal Music Group, Tencent Music Entertainment Group announced that it has officially reached strategic cooperation with Kobalt Music, Cooking Vinyl, Genie Music, GMM Grammy, etc., and reached a film and television music cooperation with Mango TV. High-quality content from the world's top labels, record companies and video platforms will be fully launched on Tencent Music's QQ Music, Kugou Music, Kuwo Music, National K Song and other platforms. At the same time, Tencent Music Entertainment Group will start a comprehensive and innovative value co-creation cooperation model with the five major labels, and once again team up with Universal Music to build a music label, as shown in Table 1.

Research shows that 2020 is the first year Tencent's music content symbiosis. Tencent Music Entertainment Group has also attracted industry attention by reaching a consensus with five major global record companies and building a music factory. In addition to continuing to unleash the multi-value of music through a mutually beneficial and in-depth strategic partnership, a new music factory will be jointly established, which will unleash the new productivity of music content and further promote the huge growth potential of digital music commercialization to create a new paradigm for future cooperation between music platforms and record companies in an innovative mode. Tencent Music has opened a new pattern of global music industry value co-creation, which promotes further transformation and upgrading of music development, and continuously improves the development of industry chain, accelerating the release of "new productivity" in music market.

Table 1 Tencent music entertainment group’s strategic cooperation with five global brands

 TENCENT MUSIC ENTERTAINMENT			
Cooperative label	Brand name	Industry characteristics	Business Scope
	Kobalt music	Achieve cooperation in cultivating pop music talents and be the leader of pop music superstars	Kobalt is an Internet company that provides distribution and copyright tracking and protection services for musicians. It has now penetrated into the production, distribution and marketing processes of the music industry, and users can freely choose the services they need. Kobalt's business volume has grown at a rate of 40% per year, and its business covers the music behind the scenes.
	cooking vinyl	Achieve cooperation matters that attract the world's best musicians.	The Cooking Vinyl record company was founded in 1986 by Martin Goldschmidt in the UK. Over the years, it has been the base for many acclaimed bands and artists. Currently, Cooking Vinyl has branches in more than 40 countries around the world.
	genie music	Achieve immersive music service cooperation	Genie Music Corp, a music subsidiary of KT Corporation, Korea's largest telecommunications service provider. Genie Music will implement three major strategies to create an immersive content ecosystem: cooperate with Korean pop music production companies to create a new market; improve 5G-based immersive music services; and diversify VP business models that target global Korean pop fans change.
	gmm grammy	Achieve cooperation to attract the best entertainment talents	GMM Grammy Entertainment PCL is the largest international record company occupying more than 60% of the Thai market. The company's total market value: 10.08 billion THB (Thai Baht).
	芒果 TV	Achieve a cooperation with youth producers of film, television and music	Mango TV is a new media audio-visual comprehensive communication service platform that integrates network features and TV features with the core of audio-visual interaction, and realizes "multi-screen integration" single broadcast, multi-screen, and self-made new media.

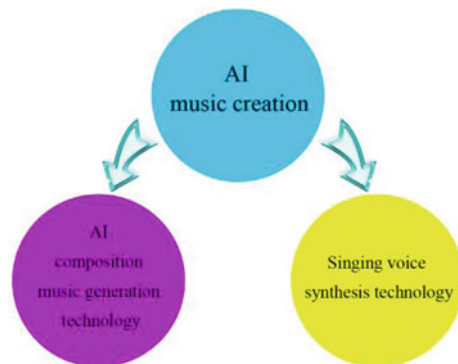
2 New Technology Brings More Immersive Artistic Enjoyment

The rapid development of artificial intelligence (AI) in recent years undoubtedly also directly affects the development of the music industry. In today's Internet era, music is within reach for us. Music, movies, videos and many others can be downloaded for free, so you no longer need to buy records, tapes, videos (Mulder et al. 2020). The emergence of artificial intelligence first explores the music creation mode itself, which builds the core power of the entire music industry, and has a certain impact on the horizontal and vertical music industry chain and different levels. This impact is mainly manifested in the promotion of "personalization" of digital music dissemination through streaming media, the help of music education and training methods, and the upgrade of music science and technology equipment such as audio equipment and instrument manufacturing. This has impacted the music industry considerably. Today, although music copyright management is getting more stringent, it has never been rid of the inexpensive nature. Simply changing the way music is made and upgrading the way copyright is managed will not be able to revitalize the music industry at all. We must rely on brand new channel quality change. From this point of view, virtual reality (VR) technology may become the best carrier for the music industry in the future, because it can make music from simple listening enjoyment to more realistic and diverse content, making it better developed.

2.1 Artificial Intelligence Explores New Modes of Music Creation

Artificial intelligence participates in music creation, including two main modes, AI music generation technology and singing voice synthesis technology, as shown in Fig. 3. With the rapid development and application of artificial intelligence, the deep

Fig. 3 The main technologies used in AI music creation



learning and neural network research of AI music creation has gradually matured, and a large number of related platforms have been put on the market (Schulte-Holthaus 2018). Internet music companies and AI music creation startup companies are quickly entering the music industry.

AI composition is a process in which a machine gradually “learns” music creation in the deep learning of a multilayer neural network. In 1974, the emergence of the radar system should be the real beginning of a composition system with AI. It may be different from AI in the current sense, but it uses the part of AI that can be used to make the machine weigh according to the rules of melody and harmony generation, and choose the appropriate proportion of notes and harmony. Since then, with the continuous in-depth research on music generation systems, the SNOBOL system that can complete automatic bass harmony generation and the CHORAL system that can be used to generate Bach style harmony have emerged. In 1993, there appeared landmark learning models using neural networks, MUSACT system and HARMONET system (López de Mántaras 2016). They are characterized by the use of a combination of neural networks and “limited satisfaction technology” to generate Baroque harmony based on the melody. These systems are the ancestors of modern AI composition systems. Nowadays, development of AI composing systems mostly starts with the open source of Google’s Agnta. Magenta is an artificial intelligence developed by Google to learn using the TensorFlow machine engine, which is designed to develop AI technology to create music and other art forms (Sapci and Sapci 2019; Bernardo et al. 2020). Since then, overseas AI music generation platforms have emerged. At present, overseas mature AI music generation platforms include Amper, Jukedeck, Musical, ai, Humtap, AIVA, etc.

2.2 Virtual Reality (VR) Technology is Transforming the Music Industry

With the maturity of technology applications, virtual reality has long become a hot spot in various industrial fields nowadays. Virtual reality hardware equipment, virtual reality video, games, house inspections, dressing and other applications are all developing rapidly. Natural virtual reality music will not be left behind. The current transformation of the music industry mainly focuses on music videos, concerts, and live broadcasts.

As early as November 2014, the virtual reality company Jaun made Paul McCartney’s concert into virtual reality (Alazab et al. 2020). In December of the same year, Next GR and Coldplay collaborated to produce a virtual reality version of the latter’s concert (Alazab et al. 2020). At the CES show in the United States in January 2016, Universal Music announced that it has reached a cooperation with iHeartMedia, an American radio company, and the two parties will use virtual reality technology in their concerts. Apple also collaborated with U2 Band and Vrse Studios to create a virtual reality music video “Song For Someone”. This means that Apple

has opened the VR era in the music field. Modern Sky Music Company held the 2016 Strawberry Music Festival press conference in Beijing and set the theme of this year as “The world is virtual, you are the reality”. As music consumers, we can most directly feel the changes brought about by virtual reality technology to the music industry. The economic benefits generated by the virtualized music industry such as MV, concerts, and live broadcasts have proved the tremendous role of virtual reality technology.

2.3 Related Upstream and Downstream Industries are Profitable

Virtual reality music will not only change the way of music appreciation, it will also change the way of music production, and even significantly reduce costs. For example, the upstream of the traditional MV industry is determined by the level of development of technical lighting, stage layout, and even shooting equipment. Driven by VR generation technology, this industry structure will be recombined, and it will even break the space–time structure and create a new era of content. In addition, traditional concerts can be watched live by tens of thousands of people at most, while virtual reality concerts may be visited by millions or tens of millions of people to experience the concert or the live performance of the concert. Even if the price is lowered, the income will increase obviously. For those engaged in the music industry, such a temptation is obviously hard to refuse.

2.3.1 The Development Status of the Global Recorded Music Industry

According to IFPI data, the total revenue of the global recorded music industry from 2010 to 2020 has shown a trend of first decline and then increase. In the past two years, the total revenue of global recorded music has been increasing year by year. In 2020, the total revenue of the global recorded music industry will be 21.5 billion USD, a year-on-year increase of 7.7%, as shown in Fig. 4.

According to IFPI data, from 2010 to 2020, the proportion of physical records and downloads and other digital music in the global recorded music industry has decreased year by year, while the share of streaming media has increased year by year. In 2019, the share of streaming media has increased to 55.9%, far surpassing physical records. The synchronization weight basically remained at around 2%, and the performance copyright fluctuated slightly. In 2020, the growth rate will continue to reach 60.7%, indicating that streaming media has more room for development under the influence of the epidemic, as shown in Fig. 5.

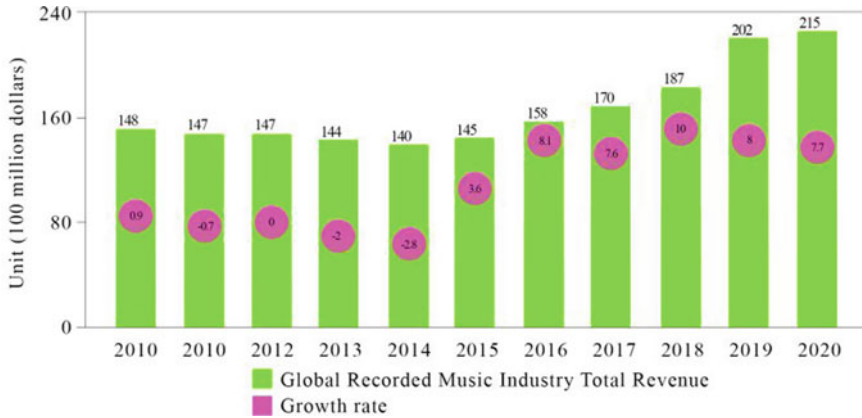


Fig. 4 2010–2020 total revenue of the global recorded music industry

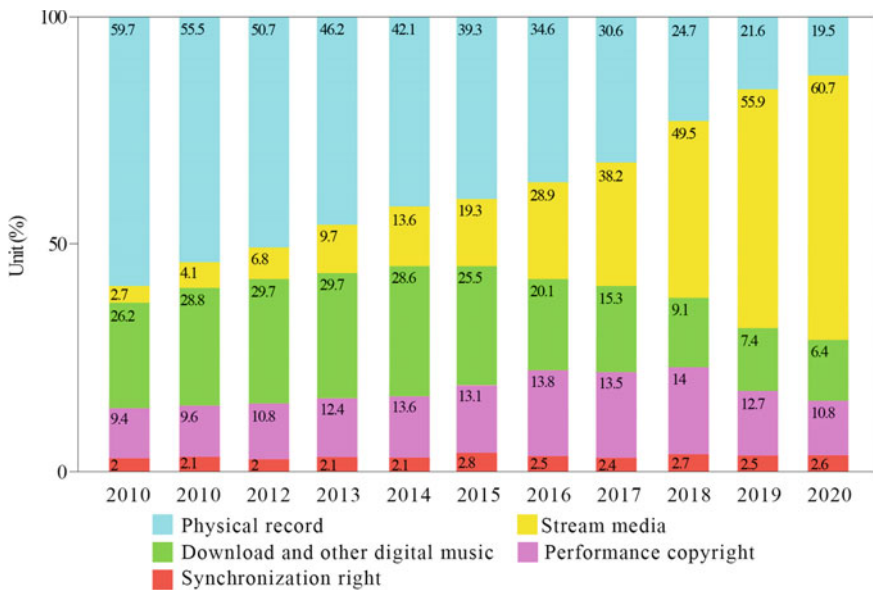


Fig. 5 The distribution of the global recorded music industry structure from 2010 to 2020

2.3.2 Trends of the Global Recorded Music Industry

The development trend of the global recorded music industry shows that the United States still leads the market. The overall share accounts for more than 1/3 of the world’s total output value of recorded music, an increase of 7.6% over last year. Japan is the best country in terms of physical music protection and development.

Japan's total output value of recorded music is second only to the United States. Britain and France are firmly behind. Canada surpassed Australia with a growth rate of 12.8%, ranking sixth (Table 2).

3 The 5G Era Brings High-Quality Upgrades to Music Application Scenarios and Application Forms

On September 25, 2020, China Audio-Visual and Digital Publishing Association officially issued 5G Digital Music Ultra-High-Definition Quality Group Standard "Technical Requirements for Ultra-High-Definition Quality of 5G Digital Music", which was developed by China Mobile Gucco Music and jointly formulated by Tencent Music, Label Extension Research Institute, Science and Technology University Telecom, Guo-Guang Interconnection, Hai Butterfly Music and other relevant industry organizations. With the introduction of the new standard, the technical requirements of digital music sound quality in 5G era are put forward from the aspects of audio format, technical parameters, production process and adapting environment, so as to promote the innovation and development of the digital music industry of billions of dollars and continuously meet the users 'experience needs for high-quality music.

3.1 5G Pushes Digital Music into the Era of Immersion in All Scenes

With the implementation of 5G commercial and 5G Ultra-High-Definition sound quality standard, the digital music industry will enter the Ultra-High-Definition era and usher in a new period of rapid development (Wang et al. 2020). Migu music is the leading pan-music service platform and one of the pioneers in the digital music industry. Relying on the 5G pioneering advantage and revolving around the innovation in technology, content and service of digital music, Migu Music is the first to offer a variety of ultra-high-definition sound quality experience services based on 5G environment, including many new 5G listening methods such as up-to-beep sound quality, up-to-3D sound effect and auroral sound effect, which creates a full-scene immersion music experience for users.

Relevant data indicate that over 50,000 songs with sound quality from Migu Music APP cover the new and old songs of mainstream singers such as Jay Chou, Chen Yixun and Cai Yilin. Music fans can not only enjoy the sound quality service of "studio master tape level", but also choose 6 unique sound effects such as clear human voice and music hall to wander in the music ocean. Migu music also joined hands with the Sichuan Symphony Orchestra and National Grand Theatre to launch a 3D feature sound effects classical music column, making elegant music popular

Table 2 Development trends of the global recorded music industry

Rank	Country	Transaction value USD = 6.7258CNY		Market share					Global ratio
		USD (millions)	CNY (millions)	Physical industry	Digital industry	Performance right	Synchronization right		
1	United States	5318.21	35,769.22	18%	70%	8%	4%	34%	
2	Japan	2745.99	18,468.98	73%	20%	6%	1%	18%	
3	United Kingdom	1251.14	8414.917	32%	47%	19%	2%	8%	
4	Germany	1212.00	8151.67	52%	32%	16%	1%	8%	
5	France	849.59	5714.172	38%	30%	29%	3%	5%	
6	Canada	367.98	2474.96	27%	63%	9%	0%	2%	
7	Australia	357.26	2402.859	23%	64%	11%	2%	2%	
8	South Korea	330.17	2220.657	35%	59%	5%	05	2%	
9	Italy	263.77	1774.064	41%	34%	22%	3%	2%	
10	Netherlands	243.36	1636.791	28%	43%	29%	1%	2%	
11	Brazil	229.84	1545.858	14%	49%	37%	0%	1%	
12	China	202.24	1360.226	4%	96%	0%	0%	0%	

through 5G. Migu Music has been working to promote the healthy development and construction of the digital music industry ecology. Migu Music will continue to take advantage of its platform in the future, and will combine all parties in the industry to lead the high-quality music service with high standards, bringing the digital music industry to a greater vitality in the 5G era.

3.2 5G Technology Accelerates the Upgrading of the Digital Music Industry

From the perspective of the hundreds of billions of industry opportunities brought by 5G or the current standardized development of digital music, the industry is in urgent need of a unified standard (Wang and Du 2021). In this context, at the end of 2019, under the guidance of the China Audiovisual and Digital Publishing Association and the Music Industry Promotion Committee of the China Audio-visual Association, and led by Migu Music, the joint industry organization initiated the ultra-high-definition sound quality technology for digital music in the 5G environment. The required R&D. According to the technical experts of Migu Music, the entire standard development and demonstration process lasted nearly a year. The expert group restructured and clarified the concept of ultra-high-definition sound quality by combing through the digital music sound quality format, parameters, and industry application conditions, and distinguished from the technical level. The normal sound quality and ultra-high-definition sound quality services clearly put forward the hardware parameter recommendations for the general sound quality experience, adaptive sound quality experience, and ultimate sound quality experience supported by different devices.

The actual situation of the implementation and development of the standard shows that the three parties have obtained great benefits in the industry chain. The digital music platform downstream of the industry chain will gradually standardize sound quality services, establish unified standards in definition of definition, audio format, and experience design, and provide users with standardized digital music ultra-high-definition sound quality services; music content producers in the upstream of the industry chain will follow the standard. The implementation of production and the application of uniform technical requirements can reduce production costs. Upstream music content producers devote more resources and energy to upgrading production capabilities to prepare music products with ultra-high-definition sound quality; hardware manufacturers in the industry chain can adopt reasonable ultra-high-definition audio decoding solutions for different audio, headphones and other carrier devices, to further reduce R&D costs and enhance product competitiveness.

Research has shown that, as the industry's first introduction of an ultra-high-definition sound quality standard, it is of great significance for standardizing digital music sound quality indicators and promoting the development of digital music. Through the establishment and implementation of unified standards and specifications, effective quality management of ultra-high-definition content and services in

the existing industry will be carried out. This management behavior is conducive to helping the upstream and downstream of the digital music industry to clarify the sound quality development trend of the 5G era, is conducive to improving the capabilities of content production, hardware adaptation, and platform services, and is conducive to orderly upgrading the industry and building an ecological environment.

3.3 Market Scale of 5G Network

According to Intel’s 5G Entertainment Economy Report, global wireless media will generate a cumulative revenue of about 3 trillion USD from 2019 to 2028, with 5G networks accounting for nearly half of the revenue (about 1.3 trillion USD), and 5G network entertainment content contributing 80% of global wireless media revenue in 2028, as shown in Fig. 6.

5G will increase the income level of mobile media, mobile advertising, home broadband, television and augmented reality (AR), virtual reality (VR) and other media sectors, and enhance the experience through a variety of new immersive and interactive technologies (Vatavu et al. 2020). Fully release the potential of AR/VR and new media. From 2019 to 2028, the average monthly traffic of 5G users will increase significantly from 11.7 GB to 84.4 GB. By then, video traffic will account for 90% of it. AR/VR will provide content producers with a brand-new channel to reach consumers, which will share a large amount of new traffic and grow rapidly. By 2028, revenue from immersive media such as AR/VR and new media that have not yet emerged will reach 67 billion USD, which is equivalent to the total revenue of video, music, and games in the global mobile media market in 2017, as shown in Fig. 7.

In terms of industry digital applications, according to GSMA Intelligence estimates, 5G will spawn more industry applications, improve industry efficiency, and

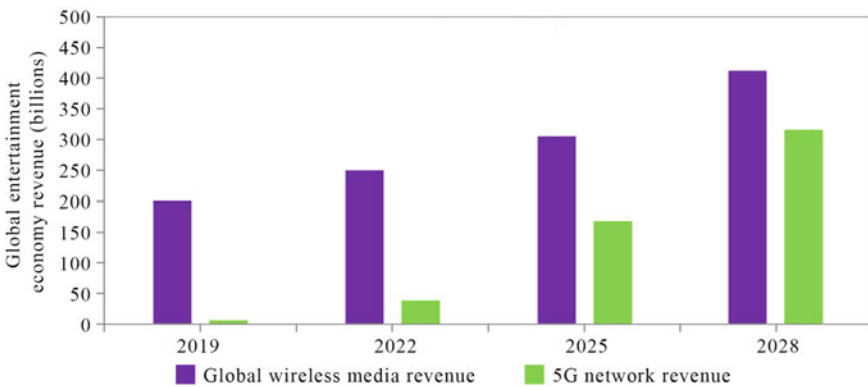


Fig. 6 The global 5G network will generate 1.3 trillion USD in revenue

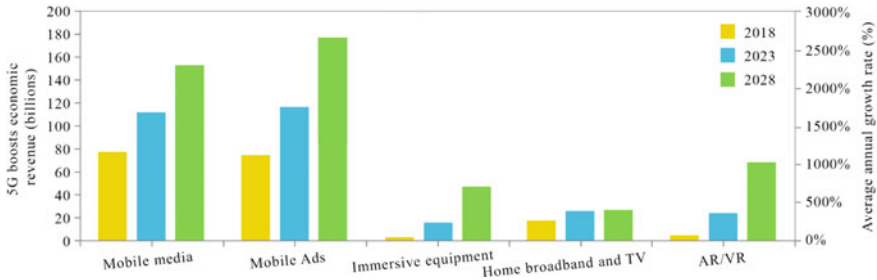


Fig. 7 Estimated income of each media

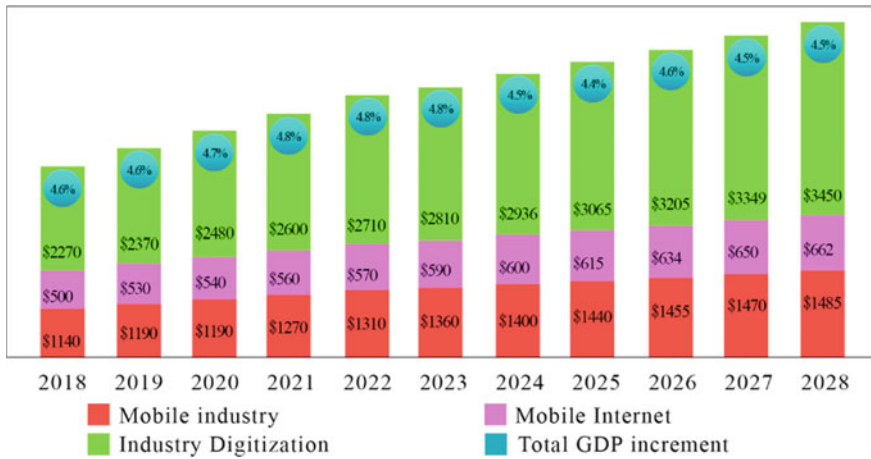


Fig. 8 5G will drive the digitization of the industry and drive global GDP growth

reduce operating costs. By 2023, the amount of 5G technology penetration of the economy will exceed 4.8% of global GDP, as shown in Fig. 8.

4 The Integration of Industry, Academia, and Business will Expand the Training of Talents for the Compound Music Industry from Schools to the Entire Society

4.1 Insufficient Training of Compound Music Talents

Nowadays, music industry parks and first-line companies related to the development of the music industry need a lot of talents who understand the operation of the music market (Jain 2020). The music market needs talents with spirit and spirit. This kind of

entrepreneur has an impact on personal growth, social relations and family life, and personal growth being the most influence (Gholami and Al Tahoo 2021). Therefore, the development of the music industry focuses on the following points:

First, original music. The development of the music industry must have original music. If the music is not original, then the music has no source, and the later development of music has no vitality;

Second, the protection of music copyright. If music original works are not protected by music copyright, then original musicians will not be protected, original works cannot make money for musicians, and there will be no creative enthusiasm. If the life of original musicians cannot be guaranteed, then what about creative enthusiasm?

Third, the cultivation of music talents. It is a general trend to cultivate music talents with compound and practical skills. The focus is to cultivate musicians' music expertise and the ability to operate the music industry.

Studies have shown that music majors should consider finding jobs in the future when learning music knowledge. What teachers need to consider is how the students taught will allow them to survive in society. The current situation is that students have learned a lot of knowledge in school, but if this knowledge cannot be accepted by the society and cannot be well connected with the current development trend of the music industry, then the music knowledge learned by students is not enough to allow them to gain a foothold in society. What the music industry needs is talents who are versatile and practical in music, and a large number of such talents are needed. A qualified music producer needs to be familiar with the music production process, the process of entering the recording studio, and the process of music from original creation to arrangement to final production to publication and distribution.

4.2 The Basic Qualities of Compound Music Talents Need to be Revealed after Training

Music educators who graduate from music academy will encounter a lot of difficulties when they work in primary and secondary schools, but they will still adapt quickly to Haynes and Marshall (2018). Conversely, these people may be more difficult to adapt to when they are transported to music industries, such as record companies. The music industry does need talent, but the current situation is that there is no particularly suitable talent. Music industry talents are those who focus on music and art management, recording and performance broker, which are different from those who perform and compose in general music academies, because the former is especially deficient, such as music creative talents, music producers, recorders, music performance brokers and copyright brokers. The analysis of the above phenomenon shows that the reason for the problem is that there are no more high-quality talents entering the music industry. The reasons for this problem are manifested in the following aspects:

In the first place, the academic curriculum is not in line with the professional qualities required by the music industry. The concept of the school curriculum and the operability of professional skills are far from the professional qualities required by the music industry. Most of the students who graduated from the Conservatory of Music have gone to work in theaters and performance venues. Professionally speaking, they are stage supervisors, but in essence they are only doing basic reminders and pick-ups, and have not really entered the creativity, production and marketing of the music industry. jobs.

In the next place, the talents recruited by music industry companies are not up to the requirements. Music industry companies also need to teach the candidates verbally and hands-on work experience. This phenomenon has a great relationship with the physical innovation of undergraduate education, including the innovation of courses, and the courses set up. Students are completely blank in knowledge fields such as copyright, broadcasting rights, reproduction rights, and information networks. The school does not offer corresponding courses, and students do not accept systematic learning in this area.

In the end, the courses taught by colleges are different from the current situation of the music industry. After graduation, students go to the music industry, music companies, music companies, performance companies, students also feel unable to play out. After hiring students, music companies need to re-shape and cultivate them according to their position and role in the industry, which will greatly affect the development of the music industry.

4.3 The Lack of Courses in the Training of Compound Music Talents

Undergraduate education has big problems when enrolling students. When enrolling students, it failed to better match the students' music ability with the music major (Dellyana and Simatupang 2014). Some students have entered majors that do not match his music ability. This is because there is a problem with the enrollment settings and the requirements for talent selection. This is a deep problem and needs to be improved.

It should recruit students who are gifted and talented in music singing and performance into music majors suitable for their development. For example, recording majors include sound engineering majors, music planning and creative majors, performing arts majors, and music management majors. On the contrary, how can a person who has no agility and accumulation in music play a very important role in each industry chain in music? What he needs is a good aesthetic, a concept of music, and a judgment of music, in order to explore the works, communicate with the songwriter and the singer, so that the effect of the music performance will be better. Or as a good music DJ, he can also recommend music to everyone.

To sum up, the solution to the problem is to change the course setting and talent selection in enrollment. Talents also need different exam questions, and the exam should have a different focus. In the setting of courses, a lot of practical courses should be added. Let students enter a certain part of the record company, and continue to let them enter these parts of the music industry. In this way, their theoretical study and practical training will be very good. The dual tutor system implemented by graduate students is a good way of education. One is the guidance from the college education system, and the other is the guidance of experts in the music industry from a more industrial perspective.

4.4 The Cultivation of Interdisciplinary Music Talents Adheres to the Path of Integrating Academia, Industry and Business

The music industry is a rapidly changing industry. It is not a constant state, but a very volatile and even universal growth period, especially in the Internet age (Rieple 2004). If students study in a long-term school, then they will not be integrated into the music industry. It will be difficult for students to find a job after graduation. It is also difficult for them to start an industrial business. It is evidenced that approximately 90% of startups businesses fail (Aminova and Marchi 2021). Because the music industry has developed quite differently from what he learned. To achieve a good combination of academia, industry and business, we need to pay attention to the following principles.

The first principle should be the fit and betrayal of culture and industry.

The knowledge structure of talents in the music industry is cultural and at the same time industrial. It is not enough to be able to play, pull, play, sing and other musical skills, but also to have the ability to operate the music industry. Only by organically combining “cultural” and “industrial” can the cultivation of compound talents be realized. In fact, it is more difficult to cultivate compound talents than pure art talents. Teachers need to understand the complex culture, and understand movies, television, drama, dance, and even art and design in addition to music. You also need to know more about humanities and social sciences, including management, economics, law, and so on. Teachers also need to understand the fields of psychology, sociology, anthropology, folklore, etc., and all aspects can be combined to be considered as compound teachers and to train compound students.

The second principle that should be mastered is the utility and value of creation and creativity.

Creative talents refer to those engaged in the field of music creation. Creative talent is the person who implements creativity throughout the whole process of music activities. Creative talent is not engaged in creative work personally. He may not understand composition, performance or performance, but he should know that he should understand, be familiar with generally, and have the ability to control these

parts. He needs to understand creativity, which is really about creating new meaning in the process.

The third principle is harmony and collision between spirit and art.

The music industry is a market-oriented, spiritual and artistic activity. Talents trained need to know the market and make a contribution in this respect, but they cannot avoid elegant and melodic artistic creation and its position in the industry. The main theme of education is the dominant development of art and culture. But it is not the main melody art, nor the elegant art, but the popular art that really occupies the market share. Popular and popular art does not pursue its spirituality, nor its aesthetics. In fact, it has certain spirituality and aesthetics, but also has a higher entertainment to meet the needs of the public. This kind of control cannot be obtained in four years of undergraduate teaching.

Research shows that in today's cultural industry development, in fact, popular and entertainment occupy the mainstream of the market. It is almost impossible for undergraduate education to train students for industrial applications. Only a very few students can do it. In fact, colleges and universities have taken various measures, for example, first, since the third grade, they began to classify and cultivate, some specializing in theory, doing Industrial Research on art management or art theory, and some specializing in practical and applied activities. After graduation, provide short-term, in-depth and effective training to students so that they can adapt to the needs of the market. We will vigorously expand the training of MFA postgraduates, that is, professional degree postgraduates. In order to train effective music industry talents, colleges and universities need to be conscious of what kind of training principles should be mastered, what kind of guidance should be grasped, and adjust the course setup and training program with a target.

5 The Study Limitations and Suggestions for Future

5.1 It Is Difficult to Obtain that Market Data for Music Products

There are many famous data analysis companies in the world. Such as Gesellschaft für Konsumforschung (GfK), BLOOMBERG PROFESSIONAL(R), McKinsey American, IMS Health, Synovate, Ipsos, Nielsen etc. However, not many companies use music market data as the subject of investigation. It has become very difficult to obtain music industry data and Internet music market data.

5.2 Data Access Is Limited by Time

The way to obtain market data in the music industry is limited by time. Normally, the previous year's data will be released next year. Sometimes data needs to be released every 2 or 3 years. Because getting the latest music industry market data becomes very precious.

5.3 The Training Target of Music Education Lags Behind the Market Demand

Music education is academic. Subject to restrictions on teaching conditions, faculty, teaching methods, etc. This factor leads to a certain gap between the students it trains and the needs of the music market.

5.4 Market Research Recommendations for the Music Industry

First of all, the international community should focus more on the music industry. Increase economic investment and contribute to the development of the digital media market in the music industry. Secondly, in the reform of the music education system, universities should note that the cultivation of music compound talents is the current demand direction of the music industry market. Music compound talents who understand computer technology, marketing, and industrial planning will be favored. Finally, an initiative is issued to all music majors. Students should carry forward their own spirit of hard struggle and mobilize their own subjective initiative. Students should master some knowledge and skills in the university study stage.

6 Conclusion

In recent years, the music culture industry has developed rapidly, and the overall scale of the industry has grown rapidly. In 2020, the total revenue of the global recording music industry was 215 billion USD, an increase of 7.7% year-on-year. It is predicted that by 2023, 5G technology will penetrate more than 4.8% of global GDP. Global wireless media will generate a cumulative revenue of about 3 trillion USD between 2019 and 2028. The results show that the original music ecology is improving day by day. The construction of music industry cluster areas will strengthen the deep integration and development with the local real economy, and the number of enterprises, construction scale and development quality of music industry base parks

will be further improved. With the rapid development of the music industry, music enterprises have an urgent need for their own growth, and the demand for docking and integrating with capital is increasing. The increasing integration of music and technology has brought fundamental changes to the profit model. Through capital intervention, enterprises will bring more endogenous and spillover. Long-term value of high-quality content, technological innovation and music + investment. Music industry practitioners and entrepreneurs will become younger and more high-quality.

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User-Generated Content and Its Impact on Brand Attitude and Purchase Intentions



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Abstract The study aims to know the Impact of User-Generated Contents on Brand Attitude and Purchase intentions among the Customers. The study was used primary and secondary data used. The data attained from research papers, magazines, articles, and textbooks related to Attitude towards the Brands, Purchase Intensions, and User Generated Contents. The Primary data accumulated from the customers aware of the User Generated Contents The study used a simple convenience sampling technique. Overall, 600 well-structured questionnaires were dispensed, out of which 557 questionnaires were appropriately filled and returned. These 557 responses are suitable and used for the final study. The study created that customers are gathering information at the time of pre-buying behavior through online platforms. The study also initiated that the reviews Practices make known of buying decision online among the customers. The study also established a considerable impact of User Generated Content on Attitude towards Brands and Purchase intentions online among the Customers in Chennai city.

Keywords Brand attitude · Purchase intensions · e-WoM · User generated contents

1 Introduction

Social Media (SM) is popular among young customers. SM makes accessible interactive information among the users and presents admirable possibilities for sellers and promoters to develop consumers. SM has an intrinsic marketing program, whether customers understand the advantages of SM buying plan and how anticipated benefits can promote their shopping practice on SM (Ryu and Park 2020). The presence of social media has identified an extraordinary target in business communication and

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connecting with their demographic companies. SM has virtually transformed our communication models and behavior into the Internet, thus forming a new mechanism to apply and dispense information (Manap 2008). Social Media users contribute in narratives and activities on an expanding diversity of Social Networking sites concerning all execute of goods, services, and skills to be concerned with the brand, merchandise, or merely the occasion to build an individual brand. (Johnson Dretsch and Kirmani 2014) The User-Generated Contents (UGC) influence in the different outlines of videos, pictures, manuscripts, and stories conceives “Additional value” of the firm (Agrawal et al. 2015). It is classically obtained from co-creation. Based on knowledge, companies and similar businesses are approved to accept different marketing methods to increase their selling scheme and dynamic environment while supporting clients to fasten in new co-creation social media (Fournier and Lee 2009). UGC pointed to more exclusive purchase intention related to revealed commercial and brand posts (Mayrhofer et al. 2020). The experts recommended promoters sponsor social media consumers to encourage their commodities; it turns into the extent that the influence of content remaining produced by definite customers (Mir and Rehman 2013). It consequently places a higher degree of confidence, predominantly due to the examination and related content being viewed as a fair and immediate principle of information. The consumers with an occasion to interlock with brands in terms not previously reasonable before the happiness, any of which critically influence the market rate and buying conclusions (Severin 2013). UGC brand custom pieces believed co-creation models; it can straight or not directly instigate purchaser buying intent and produce an extra benefit to the firm (See-To and Ho 2014). (Manap 2008) e-WoM and UGC usually practiced compatible bases of work perfectly similar to a familiar WoM.

2 Literature Review

e-WoM

e-WoM is a development of mouth theory that clinches a diversity of electronic communication mechanisms. Electronic word-of-mouth is universal with the accelerated expansion of social media and smartphone acceptance (King et al. 2014; Cobanoglu 2018). (Jalilvand et al. 2011) The authors defined it as the progression of customers sharing information and thoughts about merchandise and services to others. e-WoM takes consign during various online media, i.e., email, blogs, forums, chat rooms, virtual communities, immediate communication programs. It is elucidated well by academics and practitioners that e-WoM marketing is a relevant marketing approach (Kim et al. 2011). (Munnukka et al. 2015) Consumers recognize e-WoM as one of the prominent valuable knowledge specialists as it consists of comparable feelings and actions instead of company-generated knowledge. The impact of e-WoM on consumers’ behavioral purposes is examined in numerous studies. (Sandu 2015; Jinnah et al. 2011) e-WoM has a personal influence

on buying decisions. e-WoM from distinction, quantity, authority, and cause trustworthiness dimensions (Mir and Rehman 2013). Consumers understood no preference in their sharing and posts, thus delivering the information more reliable and truthful. Separately, (Sharif et al. 2016) exemplify comparable outcomes on cause trustworthiness as obtaining a determination of reliability of UGC orientation and comprise features namely skill and the dependability of the commercial, a significant influencing delegate. The instigator proposes that seeing online comments encourages customers more positive in their buying conclusion building. (Sadeh et al. 2011; Hasanov 2015) The influence of website excellence on purchase intention. (David 2000) The extra significance, affirming that if consumers presume the website, also required to faith the customer's inspections and intelligence, the article is precise and non-biased. (Choi and Scott 2013) Propose e-WoM keeps the position on SM, assurance, and information encouragement professional probability and its powerful connection based on the received social capital. Additionally, the public will decide the SM substance to make trust-based innovative significance, convenience, performance, security, or opportunity previous to opening the SM content with colleagues required to obtain equivalent privileges.

2.1 Quantity of e-WoM

With the end objective of the exploration, the amount of e-WoM will be deciphered as quantity assessments, posts, and outlines items. (Fan 2013) The built-up seeing on the web perceptions and the all outnumber of posted remarks get better clients' confirmation and belief on the material through particular item or administration. (Thadani 2012) The express character of reports legitimately impacts the purchaser's buy choice, giving a comparable position. (Fan 2013) e-WoM upgrades the apparent validity of clients and suggests the number of surveys illustrate clients' consideration and begins putting clients' trust. (Mir and Rehman 2013) The number of posts, pictures, and articles positively affect shoppers' believability and estimation of item content that different clients create on YouTube. The consumers other than prescribed that more examinations should be offered identifying with different SNSs stages.

2.2 Quality of e-WoM

The variety of data to clients examine that data is appropriate, convenient, precise, and comprehensive (Fournier and Lee 2009; Fan 2013) The communicated perceptible and authoritative summaries with particular unfriendly attention subject to certifiable knowledge about the thing could in like custom construct customer sureness.

2.3 User-Generated Contents

“Any form contented creature created online by proposal users.” UGC is quickly picking up power divisions of buying choices (Moens 2014). (Severin 2013) UGC offers a vibrant new reporting open entryway for publicists to correlate to their picture and accumulate confidence in connection with clients. It is in the like manner communicated that the effect of UGC makes new sorts of critical worth and benefit (Gangi 2009). The impressions of UGC on client’s confidences are inspected in a substantial amount of studies. The customers rely entirely upon and confidence in the object created by customers on the Internet. The outcome of UGC on customers is vital as customers’ faith diminished from their ganders at more than they do some other features of promoting correspondence (Severin 2013). (Cheong 2008) expressed the requirement for study on the validity of optimistic and pessimistic UGC.

2.4 Influence of social Media and Purchase Intensions

The considerable bit of examination of Internet-based life impact upon buying choices as it fused 20,000 European buyers across 30 item zones and over 100 brands in 2013 and 2014 (Bughin 2015). The investigation revealed a more meaningful impact than late presumed, with buyers changing by 66% of the item classes and approximating the staying third. It was also found that distinctive item classifications experience diverse web-based life impacts, and every particular type has its gathering of influencers with negligible cover. The exploration also featured that few powerful influencers represented many suggestions in every classification and were uniquely recognizable in certain item zones like shoes and apparel.

2.5 Influence of UGC on Brand Attitude

Numerous analysts characterize a brand as “an enduring universal assessment of individuals, articles, promotions or issues” (Solomon et al. 2017). Again, Mitchell and Olson characterized brand demeanor as a “buyer’s general assessment of a brand. (MacKenzie 1989) Attitude on advertising quarreled to be connected entirely to purchasing purpose. Brand attitude is the available evaluation of the brand, which fuses conditions, for instance, brand affirmation, brand picture, and brand-based assessments of properties and favorable circumstances (Coulter et al. 2012). (Belch and Belch 2003) Included that characters are likewise suitable to advertisers as they present a summarizing of a shopper’s appraisal of the product/administration/brand.

Brand perspectives, and correspondingly shaped, both affect the last objective of building a buy expectation between shoppers (Sicilia et al. 2006). At the same time, the firm makes inspirational perspectives created fulfilled or conventional media in the promoting, seemingly because of the bountiful degrees of firm control over this specific kind of substance age and conveyance (Coulter et al. 2012; Mangold 2009). (Mangold 2009) UGC has impressively expanded the arrangements and instruments utilized for buyer correspondence, expanding customer-to-shopper discussions' effect on commercial centers. The degrees of control firm's work over conventional Media is unparalleled when it gets to UGC via web-based networking media. In this way, it may be presumed that this wellspring of substance can be both positive and negative, which shows that UGC can either make an optimistic or pessimistic depiction of a brand changing the consumer's approach towards it. (Coulter et al. 2012) Suggested that UGC in such web-based social networking must be rehearsed in digression with ordinary or firm created content, as both apply a key effect on a brand's prosperity.

2.6 Culture

The data handling and assessment while likewise impacting every individual's self-translation and gathering recognizable proof. Moreover, it similarly affects the instrument of psychological generalizing. It prompts the characterization and evaluation of self and other people as far as character characteristics and likeness, molding trust, validity, mentalities, and practices of people and individuals from various societies pick various messages and channels to impart (Markus and Kitayama 1991). Furthermore, a few earlier examinations distinguished contrasts in social connections and trust forerunners among societies (Kim et al. 2011; Pavlou and Chai 2002; Smith et al. 2007). The general social settings of nations and even locales, such as low-setting and high-setting societies, impact the individual activities, choices, and connection inside the community and thus on the web. (Kim et al. 2011) In the comparative investigation of thought processes to join the online interpersonal organization Facebook, the Korean understudies were "looking for social help" and "looking for data." In contrast, understudies in the US joined Facebook for "diversion" and "convenience. (King et al. 2014) distinguished SNSs; there was a beneficial outcome of the social character of manliness on misleading conduct. (Money et al. 1998) The e-WoM inspirations and use designs in different societies. Yet, existing discoveries affirm a fundamental job of culture in the recurrence and power of customary WoM. Specifically, independence will probably encourage the spread of positive WoM to out-gatherings, manliness heightens WoM sharing inside gatherings, and vulnerability shirking is adversely connected with in-bunch WoM. (Liu et al. 2001), Clients in "high vulnerability shirking" societies end up being less inclined to take part in negative WoM or grumble.

2.7 *Word-of-Mouth Theory*

Word-of-mouth (WOM) is a passage within two unique consumers at the micro-level. Word-of-mouth studies at the micro-level serve to differentiate between WOM supply and demand based on the theory that one of the individuals net source and the other is a net beneficiary of word-of-mouth. However, word-of-mouth episodes, suggestions, opinions, messages, and influence are likely to pass both ways. eWOM constitutes an indispensable information transfer; the plentiful impact of the information collected may range from person to person (Cheung et al. Jun. 2008). Electronic word of mouth (eWOM) is exchange of information by assorted consumers who utilize the same choice of products (S. et Al 2016).

3 Methodology

The study was developed following objectives

- To Study the Searching of Information at the time Pre-Purchase Behavior through online among the Salaried Employee in Chennai city
- To examine the Review Practices familiarize of buying decisions through the Online in Chennai city
- To evaluate the Impact of User-Generated Contents on Attitude towards Brand and Purchase intention.

3.1 *Statement of Hypothesis*

- There is no Searching of Information at the time Pre-Purchase Behavior through online among the Salaried Customers in Chennai city
- The Review Practices do not familiarize of buying decisions through the Online in Chennai city
- There is no Impact of User Generated Content on Attitude towards Brand and Purchase Intentions online among the Salaried Employees in Chennai city.

3.2 *Sample Design*

The paper concentrated on measuring the Impact of User-Generated Content on Brand Attitude and Purchase intentions among the Customers in Chennai City. Primary and secondary data were used. The secondary data acquired research-based papers, magazines, articles, and textbooks related to Attitude on Brands, Purchase Intentions, and User Generated Contents. The Primary data accumulated from the

customers who are aware of the User Generated Contents in Chennai city. A simple convenience sampling method is used for the study. Overall, 600 well-structured questionnaires were distributed, out of which 557 questionnaires are appropriately filled and returned. These 557 responses are valid for the final study. The data was coded adequately in SPSS software version 21 and analyzed the information accurately. The study used simple frequency distribution, a one-sample t-test, and multiple regression analysis.

4 Results and Discussion

Table 1 exhibits the demographic profile of salaried customer’s perceptions about the User Generated Contents. The majority, 54.2% of the salaried employees, are male category and 30.9% of the salaried customers in the age group of up to 30 years. In addition, the study results indicate that 39.3% of the salaried customer’s educational background is under-graduates, and 30.5% of the salaried employee’s annual income is up to Rs.3.00 lakhs.

Table 1 Personal Profile (*n* = 557)

Personal profile	Frequency	%
Gender		
Male	302	54.2
Female	255	45.8
Age (in years)		
Up to 30	172	30.9
31–40	145	26.0
41–50	126	22.6
Above 50	114	20.5
Marital Status		
Married	298	53.5
Single	259	46.5
Educational qualification		
UG	219	39.3
PG	154	27.6
Professional	184	33.0
Annual Income(in Lakhs)		
< Rs.3.00	170	30.5
3.00–5.00	137	24.6
5.01–7.50	148	26.6
Above Rs.7.50	102	18.3

Table 2 Results of t-test for Searching of Information at the time Pre-Purchase Behavior through online among the Salaried Employee in Chennai city (n = 557)

	M &SD	t	df	p
Searching of Information at the time Pre-Purchase Behavior	3.73(1.585)	10.799	556	< 0.001**

Table 3 Results of t-test for the Review Practices familiarize of buying decisions through the Online (n = 557)

	Mean	SD	t-value	df	p
Reviews Practices familiarize of buying decision through online	4.16	1.291	21.274	556	< 0.001**

Null Hypothesis (H₀):1

There is no Searching of Information at the time Pre-purchase Behavior through online among the Salaried Employees

Table 2 depicts the results of the t-test for Searching of Information at the time Pre-Purchase Behavior online among the Salaried Employee in Chennai city. The study reported that the mean (3.73), SD (1.585), t- value (10.799), df(556), and p = < 0.001. The p-value of Searching for Information Pre-Purchase Behavior online among the Salaried Employees is < 0.001. Consequently, the null hypothesis (H₀) refused and confirmed that the salaried employees searched the information at the time of pre-purchase behavior through an online platform.

Null Hypothesis (H₀):2

The Review Practices do not familiarize of buying decisions through the Online.

Table 3 exhibits results of the t-test for the Review Practices familiarize with buying decisions Online. The calculated t-value and p-value for the Review Practices familiarize with purchase decisions through the Online is 4.16 & < 0.001. Therefore the null hypothesis refused and finalized that the Reviews Practices familiarized buying decisions online among the salaried employees in Chennai city.

Impact of UGC (user-generated content) on attitude towards brand and purchase intention

The Regression Analysis tests were employed to scrutinize the impact of User Generated Contents on Attitude towards the Brands and Purchase intentions through the Online among the Salaried Employees. The study used both the Independent variable (IV) and Dependant variable (DV). The model's dependent variable is User Generated Content and Independent variables, namely Attitude towards brands and Purchase intentions of products online among the salaried employees in Chennai city.

Hypothesis (H₀): 3

There is no Impact of User Generated Content on Attitude towards Brand and Purchase Intensions online among the Salaried Customers in Chennai city

Table 4 Impact of user-generated contents on attitude of brands and purchase intentions

Coefficients		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.635	0.136		12.048	< 0.001**
	Attitude towards Brands	0.302	0.045	0.285	6.711	< 0.001**
	Purchase Intentions	0.366	0.038	0.410	9.654	< 0.001**

a. Dependent Variable: User Generated Contents

The result of the Multiple Regression Analysis is shown below:

R: 0.630.

R²: 0.397.

F & p-value: 182.355 (<0.001**).

The present model r-value is 0.630; it decides the relationship between the actual and the predicted values. The predicted values are attained as the linear grouping of Attitude towards Brands (X₁) and Purchase Intentions (X₂), the R-value of the Model is 0.630 specifies that strong association with the IV(Independent variable), namely attitude towards the brand, and Purchase Intention is reasonably stable and optimistic.

The R² computes the GOF (Fit of the Mode) of the estimation SRP in expressions of the percentage of disparity in the DV (Dependent variable) elucidated by the fixed sample regression equation. The model F & p-value is 182.355 & < 0.001; the p-value is < 0.01, the study concluded that the proposed Model is Fit. Therefore, the R2 is 0.397; means 39.7% variations of attitude towards the Brands and Purchase Intentions towards the User Generated Contents (Table 4).

The equation of the model:

$$Y = 1.635 + 0.302(X_1) + 0.366(X_2)$$

The study concluded a significant impact of User Generated Content on Attitude towards Brands and Purchase Intentions online among the Salaried Employees in Chennai city. Model results indicate the coefficient of X₁ is 0.302 characterizes the partial result of Attitude toward Brand on User Generated Contents. The model results are a positive indication that such effect is optimistic that User-Generated Content would raise by 0.302 for each unit raise in Attitude on Brand, and it is significant at 1%. The X₂ is 0.366; signifies the partial outcome of Purchase Intention on User Generated Content. It indicates the positive indication implies that such effect is optimistic that User Generated Contents would rise by 0.366 for each unit increase in Purchase Intentions, and it is significant at 1%.

5 Conclusion and Further Research Directions

The study examines the impact of user-generated content on the Brand Attitude and Purchase intentions among the customers in Chennai city. The study results reveal that social media networking sites play a significant role in reviewing online product purchases. The reviews and comments online are a trustworthy source that is comprehensible and reliable on reviews that influence their faith and self-assurance about the different products and lead to procuring the product. The study originated that customers are searching for information at the time of pre-purchase behavior through an online platform. The study also initiated that the reviews Practices familiarized buying decisions online among the customers in Chennai city. The study also established a significant impact of User Generated Content on Attitude towards Brands and Purchase Intentions online among the customers in Chennai city.

The same study can be conducted in other areas of the selected city or can be conducted in any other areas of the Madras city & other places of Tamil Naidu by having more sample size; the study can be conducted in another part of the state, can be carried out in neighbor states. By having the same variables, the study can be conducted in India and other Industries also.

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An Empirical Investigation into the Perceived Value and Customer Adoption of Online Shopping: Palestine as a Case Study



Fadi Herzallah  and Nabeel Al Qirim 

Abstract Increased online shopping worldwide, even during the COVID-19 pandemic, has increased the need for more research to understand factors influencing its adoption and use by customers. The current research aims to investigate the influence of perceived value on customer intention to use online shopping in Palestine. A 200-Palestinian online shopper survey has been implemented. A theoretical framework has also been developed where perceived value is measured using four dimensions: social, functional, emotional, and epistemic. To analyze the collated data, the structural equation modeling is suitably conducted. The results show that all perceived value dimensions have positively influenced customer's intention to use online shopping. Largely, the current work shows that emotional value is the most significant dimension.

Keywords Perceived value · Online shopping · Social value · Functional value · Emotional value · Epistemic value

1 Introduction

Online shopping has grown rapidly worldwide and changed the facets of business patterns previously known by customers. Online shopping is the process of directly purchasing services and goods from a seller via the Internet without any mediator (Jayasubramanian et al. 2015). As put by the world bank Group (2019), the percentage of internet users in Palestine has grown from 1.1% in 2000 to around 64.4% in 2018, a compounded annual growth rate of 25.37%. In line with global trends, Palestinian

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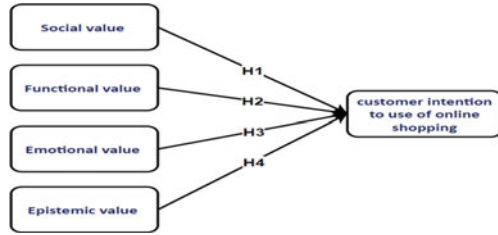
customers increasingly prefer to purchase products from different international e-commerce websites. However, due to local financial constraints and accessibility, only a small portion of the population can purchase products and services online (Abudaka and Taha 2020). The highest Internet adoption in Palestine is considered a good indicator for increased online shopping adoption. However, the results show that the growth of online shopping remains low in Palestine (Herzallah and Ayyash 2021).

Different research studies have addressed the consumer's choices and decisions in the marketing literature (Zeithaml 1988; Kerin et al. 1992; Chen and Dubinsky 2003). Accordingly, the main and key hypothesis in studying the behavior of the consumer is the concept of value maximization (Kim et al. 2007). Value is regarded as a significant predictor of the behavior of the consumer (Chen and Dubinsky 2003; Woodruff 1997). Thus, perceived value is considered an important factor influencing customer's behaviors in online shopping. Furthermore, perceived value is considered a fundamental factor for a business organization as an effective source of competitive advantage. Past studies have overlooked the viewpoint of the customer perceived value in the context of online shopping through it is of central significance to research work in the marketing environment (Chang and Wang 2011; Cheng et al. 2009). Additionally, understanding how consumers leverage Internet features to make informed online purchasing decisions assists directors in planning more useful and applicable marketing strategies (Chang and Wang 2011; Wu and Lin 2006). In Palestine, the issue of the customer perceived value in the context of online shopping has not been tackled by previous research yet. Therefore, the current work focuses on exploring the effect of perceived value dimensions on customer's intention in using online shopping.

2 Theoretical Foundations and Hypotheses Development

Creating more value for customers strongly requires using online shopping featured with more applicable ordering systems and easy and appropriate systems of information collection online (Cheng et al. 2009; Eng and Jin Kim 2006). Smith and Colgate (Smith and Colgate 2007) maintain that value perception is viewed as a wide-ranging concept comprising numerous dimensions. The conceptualization of value is a key and central element to these studies as recommended by Sheth et al. (1991). Accordingly, a 5-consumption value theory of an offering has been put forth, namely: social, functional, epistemic, emotional, and conditional values affecting the choice behavior of the customer. However, the conditional value has been excluded in the current work for it is not considered a dimension of value in line with the studies of Cheng et al. (2009); Smith and Colgate 2007; Sweeney and Soutar 2001). Figure 1 shows the recommended model for the current work.

Fig. 1 Proposed research model



2.1 Social Value

Social value is defined as the perceived value and benefit gained from an alternative associated with one or additional particular social groups as put by Sheth et al. (1991). Vijayasarathy (Vijayasarathy 2002) has stated that though this current study agrees to take that the medium decreases direct socialization opportunities, it has not conveyed several characteristics of human interactions such as conflict, jealousy, blabbermouth, factionalism (Weiser 2001). Thus, this current work argues that social values can be delivered to users via the Internet. In research work related to the adoption of the information systems, it is imperative to traditionally conceptualize social aspects like social norms, specifically pressure and tension caused by others to adopt new technology in real-life situations (Venkatesh et al. 2003). In detail, attaining social value using social commerce has not taken any consideration, and further research is strongly required to deliver a much broad understanding of intentions to adopt and use a new technology (Alshibly 2015; Celuch et al. 2007). Therefore, this study hypnotizes that:

H1: There is a positive relationship between social value and the customer’s intention to use online shopping.

2.2 Functional Value

Functional value is defined as the perceived value and benefit gained from an alternative’s capability for utilitarian or functional performance (Sheth et al. 1991). Anderson and Srinivasan (Anderson and Srinivasan 2003) have shown that in comparison with traditional backgrounds, e-commerce is apparent to be more appropriate and easy to access. Also, e-commerce is viewed as more time-saving due to the least effort required to complete a purchase transaction as indicated by research (Bellman et al. 1999). It adds that several internet-based activities such as no geographical boundaries, quick completion of any transaction, and the available scope of information are essentially effective and thus a strongly improved value in terms of functional capabilities shall be offered (Cheng et al. 2009). These internet-based activities positively affect the intention of the customer to use the internet for shopping purposes (Pavlou 2003). Therefore, this study hypothesizes that:

H2: There is a positive relationship between functional value and customer's intention to use online shopping.

2.3 *Emotional Value*

Emotional value is defined as the perceived value and benefit gained from an alternative's ability to constructively produce positive feelings, emotions, or effective states (Cheng et al. 2009; Sheth et al. 1991). Past studies and pieces of research show that when consumers think of a pleasing shopping experience done on electronic commerce websites, their willingness and preparedness to revisit the shopping website are largely increased (Hu and Chuang 2012). Website shopping systems characterized by responsiveness enable customers and easiness of use attain their products more consistently and appropriately. Furthermore, consumers are furnished with a more exciting and encouraging shopping experience if websites ship products quickly to their final destinations, offer suitable return procedures and tools, present information on several goods and products (Overby and Lee 2006; Kim et al. 2013). Therefore, as soon as the more practical and hedonic value is perceived by consumers during the shipping process, the consumers can strongly prefer shopping websites for upcoming transactions of purchases, thus recommending it to other family members, workmates, and classmates (Tsao et al. 2016). Therefore, this study hypothesizes that:

H3: There is a positive relationship between emotional value and customer's intention to use online shopping.

2.4 *Epistemic Value*

Epistemic value is defined as "the perceived value and benefit gained from an alternative's ability to add innovation, produce a sense of curiosity, and fulfill desires for novel knowledge (Sheth et al. 1991). A certain group of customers makes use of shopping for getting more inspiration and new ideas, i.e. up-to-date trends in art and fashion and new personal properties in the market. In detail, the ability of shopping to add a sense of curiosity, fulfill desires for novel knowledge, provide innovation, and keep pace with the latest trends and fashions is known as epistemic value (Davis and Hodges 2012). Thus, the novelty of the website will add curiosity (Sheth et al. 1991) and hence, encouraging persons to perform a shopping transaction (Kim et al. 2013). In an online shopping domain, search activities related to various service offerings and products are simplified by the Internet which is considered an appropriate information channel for possible e-shoppers (Rowley and Slack 2001). In the long run, customers are strongly motivated to purchase online by boosted and developed selection options (Wolfenbarger and Gilly 2000). The previous arguments show that it is rational to suppose that the epistemic value is an integral part of the

internet (Cheng et al. 2009) and thus e-commerce websites lead and help to adopt the use of online shopping. Therefore, this study hypothesizes that:

H4: There is a positive relationship between epistemic value and customer’s intention to use online shopping.

3 Research Methodology

3.1 Measurement Constructs, Data Collection, Sampling

The survey intends to explore the influence of perceived value dimensions on customer’s intention to use online shopping. To measure the study’s constructs, the survey is designed by using a 5-point Likert scale specified by the levels of “strongly agree” and “strongly disagree”. To verify the validity and reliability of the study, the items below every construct shall describe the generalized concepts (Ayyash et al. 2020). Consequently, standard measures were adopted where possible from current studies and then adapted to meet the study’s objectives as shown in Table 1. The survey questions were translated into the Arabic language to increase the response

Table 1 Scale items of the selected constructs

Constructs	Reference	Items
Social value (SV)	(Sweeney and Soutar 2001)	The use of online shopping assists in feeling satisfied
		The use of online shopping leads to a good impression on others
		The use of online shopping increases the way I am perceived
		The use of online shopping provides its owner with social acceptance
Functional Value (FV)	(Cheng et al. 2009)	Online shopping is a trustworthy tool for collating information collection about the products and services/order placement
		Online shopping is an applicable tool for collating information related to products and services/order placement
		Online shopping is a suitable tool for collating information related to products and services/order placement
		Online shopping offers well-timed services for collating information related to the products and services/order placement

(continued)

Table 1 (continued)

Constructs	Reference	Items
Emotional Value (EV)	(Cheng et al. 2009)	Information collection about the products and services and order placement through online shopping is interesting
		Information collection about the products and services and order placement through online shopping is a pleasing thing
		I am comfortable while using online shopping for collating information related to the products and services/ order placement
		I am positive while using online shopping for collating information related to the products and services/ order placement
		Information collection related to the products and services/order placement through online shopping is a pleasing action
Epistemic Value (EPV)	(Cheng et al. 2009)	I collect the information about products and services and make an order through online shopping to acquire several searching techniques
		I collect the information about products and services and make an order through online shopping to acquire novel related information
		My life becomes different while collating the information related to products and services and creating an order through online shopping
		I enjoy reading related material while collecting information/ making an order through online shopping
Purchase intention (PI)	(Cheng et al. 2009)	I expect that I will shop on this website in the upcoming period
		I anticipate shopping on this website in the upcoming period
		I will encourage others to buy through this website

rate. To further increase issues of validity and reliability, the survey instrument was examined by three validators. Accordingly, their views were considered in rewriting the survey questionnaire. For the sampling process, simple random sampling was used where users experiencing online shopping were requested to participate in the adopted survey. A rule of thumb for sample size was developed and presented as a one

to five ratios (Leguina 2015; Hair et al. 2014). Therefore, the questionnaire utilized in this study consisted of 20 measurement objects, requiring a minimum collection of 100 (20 × 5) functional questionnaires. However, with the 237 responses received, 200 usable responses were obtained. Accordingly, 200 web-based surveys were suitable for further analysis. Finally, the sample size of this study was sufficient to meet the study’s aims. The SEM approach through smart PLS 3 software was used to analyze the collected data.

4 Data Analysis and Results

To make the required data analysis in this study, the SPSS version 22 and Smart PLS version 3 were employed. The SPSS was utilized to attain the descriptive statistics of the sample while the Smart PLS was utilized to explore the causal structure’s latent variable. Firstly, the measurement model was assessed to verify that the constructs had sufficient psychometric validity and reliability. Secondly, the proposed structural model was run to test the hypotheses of the research. The next sub-sections give insight into the detailed statistical analysis results.

4.1 Descriptive Statistics of the Latent Constructs

On a 5-point Likert scale, the entire 5 latent variables’ mean values range from 3.13 to 3.44 with a standard deviation ranging from 0.80 to 1.05. However, all the variables’ mean values were above the midpoint of 2.50. The epistemic value ranked the highest with a mean value of 3.44, while the functional value ranked the lowest with a mean value of 3.13. The dispersion values incorporated into the standard deviation show that the highest value is shown by epistemic value at 1.05, and the lowest value is shown by the emotional value at 0.80. Table 2 shows the result attained from the descriptive analysis.

Table 2 Descriptive analysis results

Construct	No of items	Mean	Std. deviation
Social Value (SV)	4	3.25	0.81
Functional Value (FV)	5	3.13	0.91
Emotional Value (EV)	4	3.19	0.80
Epistemic Value (EPV)	4	3.44	1.05
Purchase Intention (PI)	3	3.38	0.97

4.2 Evaluation of the Measurement Model

Verifying the survey of the measurement model is considered one of the PLS key procedures. The formative and reflective constructs were used to verify the measurement model’s survey. Validity and Reliability were adopted as two primary criteria to test the measures’ goodness. Validity is the test of how well a given instrument is to measure a particular concept for which it was meant to be measured (Sekaran and Bougie 2016). Reliability is the test of the consistency of a particular suggested instrument to measure a specific aspect for which it was designed. The current study used the following procedures, namely: convergent validity, and discriminant validity to assess the measurement model. Table 3 and Fig. 2 illustrated that 20 reflective indicators were employed to test the measurement model. Factor loading of PLS ranging from 0.892 to 0.659 is considered satisfactory as their values are higher than the threshold value of 0.60 (Henseler et al. 2009).

Table 3 shows that the Average Variance Extracted was used to test each construct’s convergent validity. Convergent validity is defined as the degree of the positive correlation of the measure with alternative measures of the same construct (Hair et al. 2014). Thus, this study has adopted 0.5 as the acceptable least value of AVE as strongly recommended by previous studies (Hair et al. 2014; Ramayah et al. 2016). The results show that purchase intention (PI) has attained the highest value for AVE (0.750). However, social value (SV) has attained the lowest acceptable value (0.558). In a word, concerning their convergent validity, the entire values had been at acceptable levels. Another important thing is the use of the composite reliability CR as an internal consistency criterion. In detail, this criterion helps in measuring the degree to which the indicators of the construct underlie the latent examined or measured variable. The aforementioned study suggested that the value of CR should exceed 0.70 (Hair et al. 2021). For this study, all CR’s values of the tested constructs have

Fig. 2 Measurement model

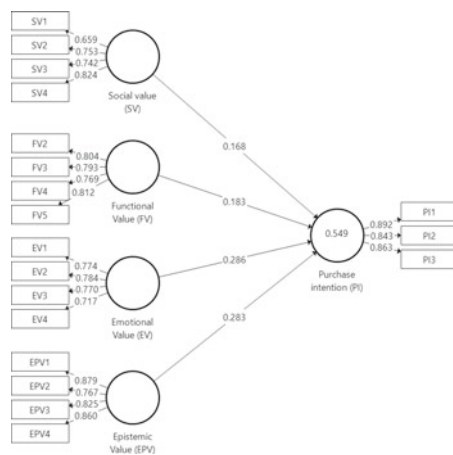


Table 3 Results of measurement model

Construct	Items	Factor loading	CR	AVE	Convergent Validity
Social value (SV)	SV1	0.659	0.834	0.558	Yes
	SV2	0.753			
	SV3	0.742			
	SV4	0.824			
Functional Value (FV)	FV1	Deleted	0.873	0.632	Yes
	FV2	0.804			
	FV3	0.793			
	FV4	0.769			
	FV5	0.812			
Emotional Value (EV)	EV1	0.774	0.847	0.580	Yes
	EV2	0.784			
	EV3	0.770			
	EV4	0.717			
Epistemic Value (EPV)	EPV1	0.879	0.901	0.696	Yes
	EPV2	0.767			
	EPV3	0.825			
	EPV4	0.860			
Purchase intention (PI)	PI1	0.892	0.900	0.750	Yes
	PI2	0.843			
	PI3	0.863			

exceeded the suggested value ranging from (0.834) for social value (SV) and (0.901) for epistemic value (EPV).

What is more, the criterion of Fornell and Larcker (Fornell and Larcker 1981) and Henseler, Ringle (Henseler et al. 2015) was applied in this study to assess the examined constructs’ discriminant validity. A certain construct with the extracted variance’s average square root, which is higher than the correlation values of the entire variables, has such a discriminant validity (Hair et al. 2014). In light of the criterion of Fornell and Larker, Table 4 shows that the results are suggestive of each construct’s suitable discriminant validity as each construct’s squared correlation is lower than the extracted average variance. Besides, the Heterotrait-Monotrait Ratio (HTMT) is a correlation estimate among constructs, matching the disattenuated construct score creation using a value of 0.9 as the threshold. Table 5 concluded that there is no evidence of a lack of discriminant validity, as the entire constructs meet the criteria.

In light of their statistical significance and parameter estimates, the findings related to the five constructs (Emotional Value, Epistemic Value, Functional Value, Purchase intention, Social value) were regarded as valid measures of their respective constructs. The entire findings show that the study’s measurement model indicated appropriate

Table 4 Assessment of discriminant validity (Fornell and Larcker 1981)

	Emotional Value (EV)	Epistemic Value (EPV)	Functional Value (FV)	Purchase intention (PI)	Social value (SV)
Emotional Value (EV)	0.762				
Epistemic Value (EPV)	0.604	0.834			
Functional Value (FV)	0.588	0.516	0.795		
Purchase Intention (PI)	0.639	0.631	0.562	0.866	
Social Value (SV)	0.444	0.481	0.387	0.502	0.747

Table 5 Assessment of discriminant validity (HTMT) (Henseler et al. 2015)

	Emotional value (EV)	Epistemic value (EPV)	Functional value (FV)	Purchase intention (PI)	Social value (SV)
Emotional value (EV)					
Epistemic value (EPV)	0.745				
Functional value (FV)	0.750	0.619			
Purchase intention (PI)	0.794	0.738	0.682		
Social value (SV)	0.506	0.549	0.436	0.576	

empirical support for its reliability, convergent validity, and discriminant validity, respectively.

4.3 Structural Model Evaluation

The effect's relationships among the investigated constructs were signified by the structural model adopted in this study. Therefore, the structural model's evaluation process indicated that the hypotheses of the research underlined the hypothesized effects or relationships amongst these constructs. Concerning these hypnotized relationships, the seven research hypotheses adopted in the study were tested by using the path coefficient (β) criteria. The path coefficient has been used to standardize the values between -1 and $+1$. The path coefficients' value, which is close to $+1$, proposes that the relationship between every two constructs is strongly positive

and vice versa for negative values (Hair et al. 2014). Using the value of the path coefficient to evaluate the relationships' significance level shows that the t-value is higher than a particular critical value, indicating that the coefficient is significant at a certain error probability. For instance, t-value >1.96 represents a significance level with a p-value <0.05.

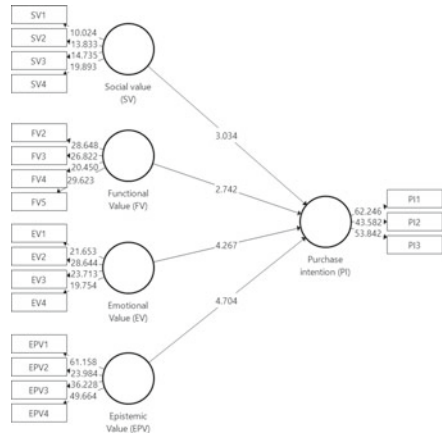
Hair Jr, Hult (Hair et al. 2014) assert that the main evaluation criteria for the structural model's goodness lie in the measures used to assess the determination coefficient and the significance level of the path coefficients (beta values), as the higher the adjusted value is, the greater the ability of the exogenous variable is elucidated by endogenous variables to consider the structural equation an improved equation. Figure 2 shows that the Purchase intention (PI) variable value is 0.549 which means that 55% of the Purchase intention (PI) variance is elucidated by variables of (Emotional Value, Epistemic Value, Functional Value, and Social Value), while the rest is elucidated by other variables outside the research model. The model's hypotheses were tested by performing bootstrapping on 5000 samples. The direct effects were tested to assess the direct hypotheses.

Table 6 and Fig. 3 indicated that the entire results attained from the direct research hypotheses' test were acceptable. Precisely, the results related to the first hypothesis (H1) indicate that the social value affects purchase intention significantly. The previous results are based on shreds of evidence drawn from survey data with the result ($\beta = 0.168$, $t = 2.962$, P-value = 0.003). For the second hypothesis (H2), the functional value's positive and significant effect on purchase intention was confirmed by the results ($\beta = 0.183$, $t = 2.760$, P-value = 0.006) as well. Similarly, the third hypothesis (H3), which states that purchase intention was positively influenced by the emotional value, was confirmed by the data of the current survey with values ($\beta = 0.286$, $t = 4.277$, P-value = 0.000). Relating to the fourth hypothesis (H4), indicating purchase intention was positively influenced by epistemic value, was supported by the data of used survey with values ($\beta = 0.283$, $t = 4.609$, P-value = 0.000).

Table 6 Results related to direct effects using path model (Bootstrapping Results)

H	Hypothesis	Original sample (O)	T statistics (O /STDEVI)	P values	Results
H1	Social value (SV) -> Purchase intention (PI)	0.168	2.962	0.003	Positive and significant
H2	Functional Value (FV) -> Purchase intention (PI)	0.183	2.760	0.006	Positive and significant
H3	Emotional Value (EV) -> Purchase intention (PI)	0.286	4.277	0.000	Positive and significant
H4	Epistemic Value (EPV) -> Purchase intention (PI)	0.283	4.609	0.000	Positive and significant

Fig. 3 Structural model



5 Discussion

This research investigated the perceived value’s role on online shopping acceptance from the perspective of online shopping customers. The findings of the Smart PLS analysis in Table 5 confirmed all posited hypotheses in the current study, thus suggesting the importance of our model as a valuable tool for examining intention to use. Firstly, the social value and intention to use relationship has been supported (H1) ($\beta = 0.168$, P-value < 0.01). This result is in line with the results of Kim et al. (2013). In the course of the practice of social interaction with e-commerce websites, the users can recognize social value, namely: the acknowledgment from others and this increases their approval toward these websites and make their purchase intention stronger (Gan and Wang 2017). In the same vein, as users attain more social values from online shopping, they can develop more purchase intention and satisfaction. Second, the relationship between functional value and intention to use was supported (H2) ($\beta = 0.183$, P-value < 0.01). This result is in proportion to the results of Cheng et al. (2009). That is attributes such as reliable, satisfactory, and timely service through online shopping associated with perceived functional value grow into significant factors and create a better effect on customer intention to use. Third, the emotional value and intention to use relationship has been supported (H3) ($\beta = 0.286$, P-value < 0.01). This result is in accordance with the results of Li et al. (2012). The perceived emotional value’s strength affecting the purchase intention indicates that the subjective aspect associated with preference and health are significant to the consumer when doing online shopping. Fourth, the epistemic value and intention to use relationship has also been supported (H4) ($\beta = 0.283$, P-value < 0.01). This result is consistent with the study of Cheng et al. (2009). Generally, “Online shopping consists of a wide-ranging experience from the browsing to after-sales service” (Tsao et al. 2016). Having categories of the organized product and a detailed and precise layout for consumers makes it possible to easily generate orders and develop pleasure by discovering new products.

6 Conclusion

Concisely, this study aimed at investigating the perceived value's effect and its dimensions on intention to use online shopping in Palestine. To achieve the study aims, a quantitative method using an online questionnaire was conducted. Data analysis was also carried out and the results indicated that the entire hypotheses were supported. The dimension of the perceived emotional value strongly influenced the intention to use online shopping in Palestine. Therefore, customer intention to use was enhanced by effective aspects. At the level of the theoretical influence, the current work presented evidence of the scales' validity of perceived value and intention to use online shopping in the context of the state of Palestinian. This helps in conducting additional research work in this country, along with elsewhere especially in other Arab developing countries. This study has several limitations as the empirical evidence was collected from online shopping customers in Palestine. Future research can increase the sampling area to have more generalized results. Finally, our results contribute to the fact that the dimensions of the perceived value, i.e. social value, functional value, epistemic value, and emotional value are significant for the Palestinian online shopping customer context. Future work for this study includes studying the impact of trust dimensions on the behavioral intention towards online shopping. The findings in this research have helped in understanding the online shopping behavior in Palestine and this could result in providing important data to improve governmental procedures and policies. Further, the practitioners can use these findings to fine-tune the customer-based issues and concerns and improve customer's purchase intentions.

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Evaluating Factor Influencing Consumer Purchasing Intention Toward Online Shop on Social Media



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Abstract This study mainly aimed to examine the factors which influence consumer purchase intention. The factors include social media influencers, Cash on Delivery (COD) payment system and consumer satisfaction. The survey was conducted on university students as online consumers of fashion products in Semarang city, Central Java, Indonesia. Purposive sampling method was used to select the samples. There were 100 questionnaires distributed online, but only 87 questionnaires were filled out by respondents. The analytical method applied for analyzing the data was Structural Equation Modeling (SEM) using SmartPLS software. The results show that influencers on social media have a significant effect on consumer satisfaction, but it does not significantly affect purchase intention. COD has a significant direct effect on consumer satisfaction, but the moderating effect is not significant. Consumer satisfaction has a direct effect on purchase intention.

Keywords Social media influencer · Cash on delivery · Customer satisfaction · Consumer purchase intention

1 Introduction

The rapid development of online shops which sell a large variety of products makes the competition in online business even much higher. There are many techniques may be applied by business actors to sell their products online such as through popular social media for instances Facebook, Instagram and Twitter, to advertise and to sell their products. Advertising is a powerful marketing communication tool, since it can quickly and widely spread to the public and is naturally persuasive (Alalwan 2018). Thus, it is necessary to have such a good creativity for making an advertisement which is able to attract the consumers' attention. Accordingly, we need a creative

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strategy. One of the strategies is by using a figure whose good charisma and the ability to attract the hearts of many people. Such figures are now popularly being called “social media influencers”. Influencers can give testimonials about product benefits, endorse a product, and act as a spokesperson for the advertised product (Blackwell 2006). In addition, their appearances in the advertisements will subtly influence the consumers, and associate the advertised brand with their personality (Wong et al. 2020).

Several previous studies have analyzed the effect of advertising using influencers on online purchase intention. Influencers on social media can increase consumer purchase intention in Indonesia (Hermenda et al. 2019). Influencers on social media Instagram can increase the consumers’ purchase intention in Germany (Weismueller et al. 2020). Moreover, Furthermore, social media celebrity influencers on Facebook are able to increase consumers’ intention of purchase in India (Trivedi and Sama 2020). The results of another study show that influencers on social media Facebook cannot directly increase the purchase intention of consumers in Norway (Johansen et al. 2017).

Online stores have been growing promptly both through marketplace and social media platforms. In contrast to online stores in the marketplace, the development of online stores on social media increases the potential for crime in the form of fraud. There are many incidents occur such as consumers have made payments (bank transfers) for the goods purchased online on social media, but the goods ordered are not as advertised at all or even not sent by the seller. This has encouraged the improvement of online transaction payment system by Cash on Delivery (COD) method. This COD payment system allows customers to order products without having to pay in advance; instead, they will pay when the product ordered has been received (Halaweh 2017). Such COD payment systems are increasingly demanded because consumers feel more secured, their identity privacy can be maintained and they can even test the product quality before making payments.

The statistics of e-Commerce in 2020 released by the Central Statistics Agency (local term: BPS) show that 73% of approximately 17 thousand e-commerce businesses in Indonesia recorded use cash payment method or it is widely known as Cash On Delivery or COD. This probably occurs due to the fact that many Indonesian people are not yet bankable. In addition, the current data shows that only 29% of Indonesians have bank accounts in 2019. Thus, the habit of using cash persists while doing online transactions.

This study was conducted to examine the factors which influence the intention of online purchases (online purchase intention). The object of this research is students from various strata, both in public and private universities in Semarang City, Central Java Province, Indonesia, who are consumers of online shops for fashion products. This study is different from previous researches; mainly as such studies conducted in countries that already use electronic payment systems. In Indonesia and other developing countries, electronic payment systems have not yet been massively used. Furthermore, this study included the COD payment system variable which is still the main choice for consumers in Indonesia to purchase products online, specifically on social media.

2 Purpose and Structure of the Study

The main purpose of this study is to examine the effect of influencers on social media, the Cash on Delivery (COD) payment system and consumer satisfaction on purchase intention. This study is divided into three main parts, i.e.:

1. Introduction which covers the background of problems and phenomena of online business in Indonesia
2. Literature review and research method which include the theory used as the basis of this research (Social Media Marketing, Payment Method, Consumer Satisfaction, Consumer Purchase Intention) and the hypothesis to be tested.

Analysis of the results, discussion and contribution of this study for the managerial aspects of online shops, particularly in social media.

3 Literature Review

3.1 *Social Media Influencer and Consumer Satisfaction*

Social media marketing is a form of marketing in which technologies of social media, channels and software are used to create value for customers and to satisfy their wants and needs (Tuten 2020). Marketing through social media generally has similar goal as that of common marketing. The only and main difference is that this marketing is specifically conducted on social media platforms (Blackwell 2006). Such marketing includes all web-based software and services that enable users to gather online and then to communicate, to discuss, to exchange and to participate in various forms of digital social interaction. There are many types of social media depending on their primary focus. The results of previous studies indicate that social media influencers have a significant positive effect on consumer satisfaction. The presence of influencers on social media can increase consumer satisfaction with online products (Abdullahi and Otori 2020; Han 2020; Lee and Ha 2020). Thus, the first hypothesis proposed in this study is:

H1: Social media influencers have a positive effect on consumer satisfaction.

3.2 *Payment Method and Consumer Satisfaction*

Most consumers choose payment methods not only based on convenience, but also more importantly on security. Online shoppers expect websites to protect their personal data, to provide secure payments, and to maintain the privacy of online communications (Steinhoff et al. 2019). Consumers will consider certain criteria to evaluate the usability and ease in operating certain websites, including searching

information, internet subscriptions, and payment methods (El-Adly 2019). Consequently, making the payment procedure easier is significantly urgent for online retailers in order to maintain their customers and to improve the level of consumer satisfaction. Various payment tools have been introduced for e-commerce-based purchases including credit and debit cards, mobile payments, electronic checks, and electronic wallets. However, in Indonesia, payment by Cash on Delivery (COD) is still considered a high priority for online shopping alternatives. Studies from various backgrounds have shown that security is the main factor that discourages customers from using electronic payment methods. The results of previous studies indicate that the Cash On Delivery (COD) payment system or method has a significant positive effect on consumer satisfaction (Karunarathna 2020; Katta and Patro 2017; Vezzoli et al. 2017). Thus, the second and third hypotheses proposed in this study are:

H2: Cash on Delivery (COD) has a positive effect on consumer satisfaction.

H3: COD moderates the effect of social media influencers on consumer satisfaction.

3.3 Social Media Influencer and Consumer Purchase Intention

Marketing through social media often uses influencers to advertise their products. Influencers can provide testimonials about the benefits of the products, endorse a product, and act as a spokesperson for the advertised products. The appearance of influencers in advertisements can subtly affect the consumers, and can associate the advertised brand with their personality. The results of previous studies show that influencers on social media can increase consumer purchase intentions in Indonesia. Influencers on social media, especially Instagram, can increase consumer purchase intentions in Germany. Furthermore, celebrity influencers of social media Facebook can increase consumer purchase intentions in India (Trivedi and Sama 2020). In accordance, the fourth hypothesis proposed in this study is:

H4: Social media influencers have a positive effect on purchase intention.

3.4 Consumer Satisfaction and Consumer Purchase Intention

Customer satisfaction is considered as the result of a comparison between consumption, expectations and experience and this customer satisfaction is usually achieved in the final result (Prasetyo et al. 2021). Customer satisfaction plays an important role in online shopping, because it affects the consumers' decision whether to continue shopping online or not. Many researchers have investigated customer satisfaction in online transaction environments (Sai Vijay et al. 2019). Customer satisfaction in

online business is a key factor for profitability (Katta and Patro 2017). Furthermore, satisfied customers are more likely to repurchase more in the future than those dissatisfied ones (Chicu et al. 2019). Therefore, customer satisfaction plays an important role in the assessment concerning to make online shoppers do repurchases. End-user experience has grown to be an important factor in internet-based businesses since end-users often pay for most new services and products. Characteristics of new products such as quality, perceived ease of use, attractiveness, aesthetics and value for money must exceed the customers' expectations on the products. Therefore, assessing customer satisfaction becomes highly important, mainly for high-tech products and services. To improve business performance and to increase the intention of consumer satisfaction, online retailers must have a deep understanding of the factors which influence consumer satisfaction. The results of previous studies indicate that consumer satisfaction has a positive effect on purchase intentions (Chi 2018; Goh et al. 2016; Khan et al. 2015). Thus, the fifth hypothesis proposed in this study is:

H5: Consumer satisfaction has a positive effect on purchase intention.

4 Research Method

This study was completed by conducting a survey on diploma, undergraduate and postgraduate students from both public (state owned) and private universities in Semarang city, Central Java province, Indonesia. The method used for selecting the samples was purposive sampling with the criteria of students who were consumers of fashion products at online shops on social media and had bought the products using COD payment system. There were 100 questionnaires distributed online. However, only 87 questionnaires were filled out by respondents. Respondents were asked to fill out a questionnaire related to influencers on social media, COD payment system, perceived satisfaction and purchase intention. The items of the questionnaire distributed were obtained from:

1. Social Media Influencer (SMI) consists of 5 items sourced and modified from (Baranow 2019).
2. Cash On Delivery (COD) consists of 8 items sourced and modified from (Halaweh 2017)
3. Consumer Satisfaction (CS) consists of 4 items sourced and modified from (Katta and Patro 2017)
4. Consumer Purchase Intention (CPI) consists of 3 items sourced and modified from (Filieri et al. 2018).

The analysis was conducted using regression method applying software of SEM SmartPLS Version 3.2.9. computer program.

5 Results of the Research

5.1 Characteristics of the Respondents

The results showed that the number of female respondents (56.3%) was greater than that of male respondents (43.7%). Most respondents were under 30 years of age (74.8%) compared to the age of 31–40 years and 41–50 years, which was 12.6% each. Furthermore, the education level of most respondents is undergraduate (51.7%), Diploma (33.3%) and postgraduate (14.9%). In addition, from the status of the university it showed that students from private universities are bigger (67.8%) than those from public or state universities (32.2%).

Table 1 Outer loadings

	COD	CS	Moderating effect 1	PI	SMI
COD1	0.774				
COD2	0.884				
COD3	0.879				
COD4	0.881				
COD5	0.775				
COD6	0.801				
COD7	0.861				
COD8	0.801				
CS1		0.773			
CS2		0.898			
CS3		0.866			
CS4		0.835			
CPI1				0.799	
CPI2				0.912	
CPI3				0.837	
SMI * COD			1.143		
SMI1					0.748
SMI2					0.873
SMI3					0.810
SMI4					0.780
SMI5					0.813

Table 2 Construct reliability and validity

	Cronbach’s Alpha	ρA	Composite reliability	Average variance extracted (AVE)
COD	0.937	0.939	0.948	0.695
CS	0.864	0.868	0.908	0.712
Moderating effect 1	1.000	1.000	1.000	1.000
CPI	0.808	0.817	0.887	0.724
SMI	0.864	0.865	0.902	0.649

5.2 Outer Model Evaluation

The results of the analysis conducted using SEM SmartPLS Version 3.2.9 computer program are presented in the tables as follow:

Table 1 above shows that all outer loading values are above 0.70. This means that all variables meet the convergent validity.

Table 2 explains that the Average Variance Extracted (AVE) value is >0.50. This also indicates the existence of construct validity. The values of Cronbach Alpha, ρA and Composite Reliability are all above 0.70. Accordingly, the variables all meet the construct reliability.

5.3 Inner Model Evaluation

The results of inner model evaluation are described as follows:

Table 3 shows that all VIF values are less than 5. In conclusion, there is not any multi-collinearity between the constructs.

Table 4 indicates that the value of SRMR is <0,008. Thus, the model is considered to be fit. Seen from the value of NFI i.e., 0.752 this model is identified as marginal fit because the value is below 0.90.

Table 5 elaborates the value of R Square i.e., 0.328 (CS). This means that the variation of Customer Satisfaction (CS) can be achieved by Social Media Influencer (SMI) and Cash on Delivery (COD) variables of 32.8%, while the 67.2% is obtained

Table 3 Collinearity statistic (VIF)

	COD	CS	Moderating effect 1	PI	SMI
COD		1.335			
CS				1.230	
Moderating effect 1		1.081			
CPI					
SMI		1.306		1.230	

Table 4 Model fit

	Saturated model	Estimated model
SRMR	0.075	0.076
d_ULS	1.197	1.229
d_G	0.742	0.745
Chi-Square	328.676	329.558
NFI	0.752	0.752

Table 5 R square

	R square	R square adjusted
CS	0.351	0.328
CPI	0.216	0.198

by other variables. In addition, R Square value of 0.198 (PI) indicates that the variation of Customer Purchase Intention (CPI) can be explained by Social Media Influencer (SMI) and Customer Satisfaction (CS) variables as much as 19.8%, while most 80.2% is affected by other variables.

5.4 Hypothesis Testing

Hypotheses or significance testing can be described in these following figure and table.

Based on Fig. 1 and Table 6, it can be concluded that:

1. SMI has a significant effect on CS (P value of $0,005 < 0,05$); thus, H1 is accepted.
2. COD has a significant effect on CS (P value of $0,000 < 0,05$); so, H2 is accepted.
3. The moderating effect of COD on the correlation of SMI to CS is not significant (P value of $0,298 > 0,05$) which means H3 is rejected.
4. SMI has no a significant effect on CPI (P value of $0,164 > 0,05$) meaning that H4 is rejected.
5. CS has a significant effect on CPI (P value of $0,002 < 0,05$) indicating that H5 is accepted.

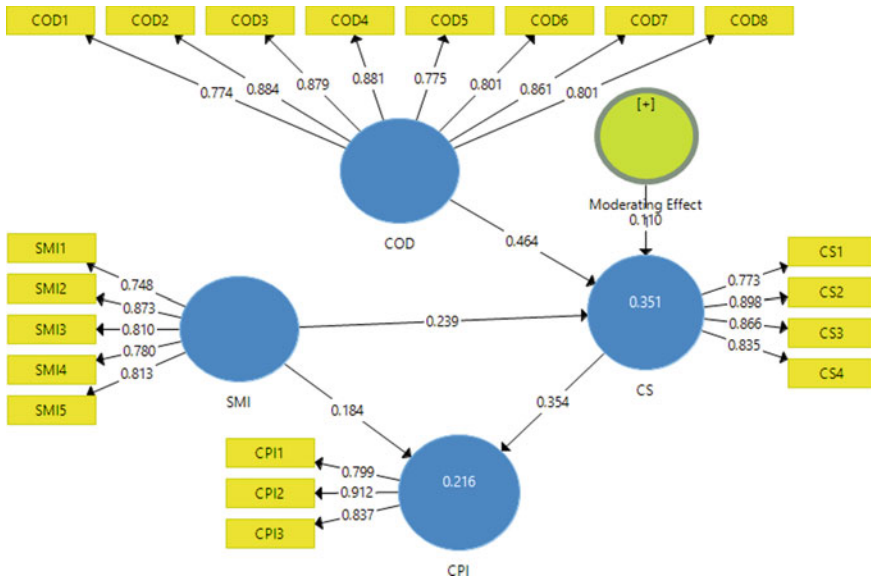


Fig. 1 Results of data analyses

Table 6 Path coefficients

	Original Sample (O)	T Statistics (O/STDEV)	P Values	Hypothesis
SMI -> CS	0.239	2.816	0.005	H1: Supported
COD -> CS	0.464	4.928	0.000	H2: Supported
Moderating Effect 1 -> CS	0.110	1.041	0.298	H2: Not Supported
SMI -> CPI	0.184	1.394	0.164	H2: Not Supported
CS -> CPI	0.354	3.076	0.002	H5: Supported

6 Discussion

The results of the analysis conducted in this study indicate that influencers can increase consumer satisfaction for online products sold on social media. The appearance of influencers in the advertisements of online products can significantly influence the consumers. Accordingly, consumers will associate their personality with the advertised products or brands. Influencers may provide testimonials about the

benefits of the products, support a product and act as a spokesperson for the advertised products so that the consumers feel satisfied and interested in buying it. The results of this study are in accordance with previous studies which show that social media influencers have a significant positive effect on consumer satisfaction.

Cash on Delivery (COD) payment system or method can increase customer satisfaction. The facility of this COD payment system allows customers to order products without having to pay first. Instead, they will pay when the ordered products have been received. COD payment systems are increasingly demanded as the consumers feel much more secured. Besides, this system can maintain the customers' identity privacy and the customers can also check the product quality before making payments. The results of this study strengthen the previous studies stating that the existence of COD payment system can increase consumer satisfaction with online products. Nevertheless, COD cannot moderate the influence of social media influencers on customer satisfaction.

Social media influencers cannot directly increase online purchase intentions on social media, consumer satisfaction does affect it instead. The results of this study, however, are not in line with previous studies indicating that social media influencers have a significant positive effect on consumers' purchase intentions.

Consumer satisfaction can increase consumers' purchase intentions to buy products online. Accordingly, it can be stated that consumer satisfaction plays an important role in online shopping, because it affects consumers' decisions to continue online shopping or not. Many researchers have investigated customer satisfaction in the online environment. The results of this study confirm previous researches which show that customer satisfaction has a significant positive effect on consumers' purchase intention.

7 Conclusion

This study concluded that influencers can significantly increase customer satisfaction for fashion products sold in online shops on social media, but it can't directly enhance consumer purchase intention. In addition, COD directly increase customer satisfaction.

Nevertheless, it cannot moderately increase customer satisfaction. Moreover, customer satisfaction can enhance the purchase intention of fashion products sold in online shops on social media.

7.1 A Subsection Sample

This study contributes to the following managerial aspects:

1. The Online fashion product sellers on social media need to use influencers so that consumers feel satisfied and it will eventually increase purchase intentions. The use of influencers on social media such as celebrities or famous sportsmen is expected to influence online consumers to be interested in buying products offered on social media (such as Facebook, Instagram, etc.).
2. The online sellers of fashion products on social media need to continue using the Cash on Delivery (COD) payment system in addition to electronic payments so that the consumers feel comfortable and satisfied in buying products online. This is due to the fact that most consumers of online products in Indonesia, especially on social media, still rely on COD as a secure payment system compared to that of electronic payment systems.

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Investigating the Influencing Factors of Behavior Intention in Café Visit Context



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Abstract Attending a café has become a way of life in modern culture. Café shops have evolved into not just a place to relax but also a place to work. Cafe owners in Indonesia reacted quickly to this new phenomenon by building a slew of unique cafes across the country. This study aims to see how electronic word of mouth, services-cape, corporate image, and affordability affect café behavior intentions. The setting is a well-known Indonesian café. This investigation uses a purposive sampling strategy. There are 159 people in the sample. We use an online survey via a google form link to collect data. The data analysis is using SEM. Unless the hypothesis related to affordability, our findings demonstrated support for all of our hypotheses. The affordability does not significantly moderate the association between corporate image and behavior intention. The two antecedents of corporate image, namely E-WOM and service-cape, positively affect the company image. The company image itself significantly affects behavioral intention. The impact of E-WOM on behavioral intention and services-cape on behavioral intention is also mediated by corporate image. Our interesting findings proved that affordability does not include an essential aspect in visiting café decision-making.

Keywords Electronic word of mouth · Service-cape · Corporate image · Affordability · Behavior intention

1 Introduction

Visiting coffee shops is a common phenomenon in the urban geography of consumption. Spending time in coffee shops are daily rituals in specific urban neighborhoods

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and influence people's routines (Waxman 2006). Customers visit coffee shops for various reasons other than to satisfy their hunger or quench their thirst. There's the possibility to get away from a demanding office, a location to get away for some reflective work, an opportunity to meet with pleasant coffee shop personnel at an exceedingly lonely moment, or a place to do business and achieve agreements (Ferreira 2019). Coffee shops are a crucial component of the vast gathering spaces that make up cities (Topik 2009).

During the café visit, consumers can evaluate the design scape to understand the meaning of the café service-scape. The café visitor can give descriptions such as how is the café (Hall and Williams 2008). Waxman (2006) has comprehensively assessed social spaces from an architect's perspective, especially coffee shops. According to Proshansky et al. (1983), customers' experience with the cafe is unique and directly related to their knowledge during the visit. Waxman (2006) The top five design considerations included cleanliness, appealing aroma, adequate lighting, comfortable furniture, and a view to the outside. Lukito et al. (2018) stated that modern cafés must achieve middle-class cleanliness and interior design standards to compete with other cafe brands. New cafés currently offer a modern design aesthetic, free wi-fi, charging stations for smartphones and laptops, and comfortable seats for social interaction.

Aside from the extensive network, the coffee shop has risen to third place, which assists people in getting through the day, and they differ from the traditional meeting places in our modern society, such as home or work. Public spaces host individuals' regular, voluntary, informal, and eagerly anticipated gatherings (Oldenburg 1999). Coffee shops have evolved into gathering places where people could meet, chat freely, and socialize with others in their neighborhood, regardless of rank or social status (Sennet 1974; Oldenburg 1999; Pendergrast 1999). These third locations serve as conductors in society, allowing people to communicate and share information and ideas (Waxman 2006). The activities, users, venues, and spatial conditions that support them, on the other hand, are pretty diverse. Coffee shops, for example, have a strong influence on luring new inhabitants while also contributing to the gentrification of inner-city social areas (Bell 2007).

The previous discussion motivates us to investigate the influencing factors which determine consumers to attend café. According to the preliminary study conducted with 31 respondents, respondents chose a café based on some criteria such as comfortable space, low price, and wi-fi access. The café setting in our study is Antologi Café, which is the first collaborative café in Yogyakarta, Indonesia. The city is a Special Region of tourism city in Indonesia. The brand of the café is Antologi Collaborative Space. This café is the first collaborative space in Yogyakarta. Antologi is a coworking space, event space, and café. This coworking space is dedicated to startups, entrepreneurs, creative makers, and local communities. It has dozens of outlets in Indonesia and aims to create a collaborative work environment where people can engage and develop new ideas. This café builds a strong workshop café image. In this study, we investigate how electronic word of mouth, service-scape, corporate image (which refers to café image), and affordability influence the behavioral intentions of the café.

2 Theoretical Framework

2.1 *Theory of Planned Behavior*

The underlying theory of our study refers to the Theory of Planned Behavior (Ajzen 1991). According to Ajzen (1991), the theory of planned behavior (TPB) is an extension of the theory of reasoned action (TRA), which proposed to accommodate the latter model's incapacity to cope with activities over which persons have only partial control. We consider the Theory of Reasoned Action due to the primary variable in our investigation, i.e., behavior intention. This behavioral intention results from a corporate image in our model, which refers to the café image. In comparison, TRA considering voluntary control. The amount to which an attempt to perform specific behavior will refer to voluntary control (Blackwell 2006). This theory is unable to explain unconscious behavior. In comparison, the TPB model demonstrates that the intention to perform particular behavior determines the individual performance of specific behavior (Ajzen 1991).

2.2 *Technology Acceptance Model*

This study also uses Technology Acceptance Model (TAM) to assess electronic communication technology adoption based on the notion of perceived usefulness and perceived ease of use (Davis 1989). Technology Acceptance Model has defined the connection between eWOM and corporate image. An individual's favorable attitude towards eWOM communication is motivated by reading other people's experiences and posting their own consumption experiences (Liang et al. 2013). Consumers dis/satisfaction with consumption experience will investigate the consumer motivations to engage with eWOM communication behavior (Davis 1989). Following the TAM, it provides background on the relationship between EWOM and corporate image.

2.3 *Electronic Word-Of-Mouth*

Electronic Word-of-Mouth serves the possibilities for potential customers to learn about the advantages and disadvantages of products or services offering through the internet before actual purchase (Duhan and Singh 2016). E-WOM is a current phenomenon, and its conceptualization is hard to grasp (Abălăesei 2014). Previous pieces of literature provide a varied classification of E-WOM. Cheng et al. (2010) suggested that Quality (high or poor), valence (positive, negative, or neutral), information side (one-sided or two-sided), and consistency (consistent or inconsistent) are among factors that E-WOM can consider.

2.4 Servicescape

Evaluation of service is quite a challenging issue in its non-physical nature (Reimer and Kühn 2005). Although many studies have investigated the influential factors of service-based experiences (Grace and O’Cass 2004), findings are still not precisely clear (Siu 2013). Servicescape consists of both substantive and communicative elements, such as civility, concern, and culture delivery. Servicescape is a platform that allows the service provider to construct pleasant customer experience assessments (Namasivayam and Lin 2008). Many academics provided various reasons for service-scape (Harris and Ezeh 2008). Bitner (1992) defined service-scape as the overall or total construct of environmental dimensions rather than a single component.

2.5 Corporate Image

Customers want to buy items and services from a company with an excellent reputation to avoid risk. According to Keller (1993), the corporate image refers to a distinctive association preserved in customer memory for a specific organization. According to Liu et al. (2014), an organization with an excellent corporate image is more likely to stand out in the marketplace because it can draw customers’ and trial users’ attention. Though customer satisfaction and loyalty have been tested in the food context, the corporate image tends to be snubbed (Park et al. 2004). However, such an omission may cause model misspecification problems and weak predictive power (Bagozzi 1980; Cronin Jr. and Taylor 1992). Corporate image is one of the most crucial strategic resources available to firms. It provides fertile ground for establishing a significant and long-term sustainable competitive advantage over market competitors (Boyd et al. 2010). Many research revealed that the corporate image encourages customer commitment and facilitates brand extensions (Hem et al. 2003; Casalo et al. 2007a; Cheng et al. 2011) stated a relationship between corporate image and behavior intention.

2.6 Affordability

The phrase “affordability” refers to the vocabulary of “perceived pricing,” which includes how the buyer sets the price and how consumers perceive the cost of goods or services. Pricing is related to buyers’ view of a product’s price as high, low, or fair. Perceived price will affect consumers’ willingness to buy (Ahmad 2011). The perceived price is whether the price of a product is high or cheap (Erevelles et al. 1999). Erickson et al. (1985) state that consumers should sacrifice the cost as a currency to get suitable products or services purchased. Teas et al. (2000)

argue offered price positively related to the perceived product quality and consumer satisfaction. A price is more readily observable than quality (Yoon et al. 2014).

Sahni (1994) adapted and operationalized the Theory of Planned Behavior's fundamental premise (Ajzen 2002). For predicting purchases of both affordable and expensive things, "perceived behavioral control" is being replaced by "perceived financial control." The findings demonstrated the need to take financial capabilities into account when making purchase predictions. Another interesting study by Notani (1997) sought to understand better the function of perceived affordability in forecasting purchase intentions.

2.7 Behavior Intention

Behavior intentions can be described as a stated likelihood to engage in a behavior (Oliver 2010; Lee et al. 2010). It refers to how far a person has formulated conscious plans to perform or not perform some specified future behavior (Warshaw et al. 1985). Specific intention behavior can be in several forms: intention to buy/rebuy, intention to use/reuse, intention to give word of mouth. Customers will construct intention to use after a customer's favorable product/service assessment (Byun and Jang 2018). Specifically, because the intention to use directly impacts actual use, various previous research has attempted to identify usage predictors (Hyun 2017). Word-of-mouth intentions refer to informal, person-to-person communication about a brand, a product, an organization, or a service between a perceived non-commercial communicator and a receiver (Harrison-Walker 2001). Consumers tend more to trust knowledge than commercial advertisements, so Intentions of word-of-mouth play a critical role in lowering the risk of selecting a new product/service (Yi and Gong 2008).

3 Hypothesis Development

3.1 The Relationship Between EWOM on Corporate Image

Before purchase, the consumer will consider product reviews on the internet and these reviews usually refer to communication by word of mouth. Therefore, electronic word of mouth critically affects consumers' product reviews and purchase intention (Bambauer-Sachse and Mangold 2011). Corporate image is critical for future profit and long-term cash flow, strategic alliance and acquisition decisions, stock price, long-term competitive advantage, and market performance (Yoo and Donthu 2001). The corporate image is the total of implications generated through consumer perceptions of a product (Keller 1993). Hence, the corporate image includes consumers' experiences and evaluations about the brand (Wang and Yang

2010). Polinsky et al. (1983) described excellent reputable firms would have more customers, enjoy customers word-of-mouth (WOM), acquire a more significant number of new customers, and lower turnover. Research by Cermak et al. (1994) linked trust to the profit context's higher image. Based on previous discussions, we propose the following hypothesis.

H1: E-WOM positively affects a corporate image

3.2 The Relationship Between Service-Scape on Corporate Image

Mehrabian and Russell (1974) has indicated that emotional responses may be triggered by physical and social stimulation. Based on the Mehrabian and Russell (1974) model, physical and social stimulants were incorporated independently and the service-scape in marketing research. Lin et al. (2012) investigated the effects of service-scape on emotional response. Lin (2004), on the other hand, underlined the importance of examining the impact of service-scape on cognitive rather than emotional evaluations. Moffitt et al. (2002) pointed out that image is a cognitive component, while Nguyen et al. (2001) expressed that a hotel's business image is closely related to its service-scape. Nguyen et al. (2001) stated that service-scape influences customers' overall image perceptions. Baker et al. (1994) noted that the store's setting is a deciding factor in the store's image. They discovered that the impact of environmental and social elements on store image is mediated by merchandise and service quality. According to Indah and Fatmawati (2020), by designing a store atmosphere, marketer attempts to create more specific emotional effects for consumers.

In comparison, Nguyen et al. (2002) found that the physical environment significantly affects a corporate image. Indah and Fatmawati (2020) supported this idea, which stated an exciting store environment would arouse the comfort and pleasure feelings of consumers during shopping. Based on Nguyen and Leblanc (2001) findings which proved that service-scape has a positive effect on a corporate image, we proposed the following hypothesis.

H2: Servicescape has a positive effect on corporate image

3.3 The Relationship Between Corporate Image on Behavior Intention

Customer loyalty is influenced in large part by the business image. They also looked at how customer satisfaction, quality service, and value affected its image and loyalty. It also found that customer satisfaction and received images have been more effective in service loyalty and satisfaction than the image that has been more influential

on service loyalty (Hu et al. 2009). In addition to research by Mano et al. (1993) showed that consumers are ready to pay more for higher-quality services. Thus brands with a good reputation can charge more for their products. Image is vital for any organization because it can influence customers' perception of the goods and services offered (Zeithaml et al. 1996). As a result, customers' buying behavior is influenced by image, emphasizing the necessity of maintaining a positive image. Researchers have identified several elements that affect the image. For example, Normann (1991) argued that an image has grown in the customer's mind through the combined influences of advertising, public relations, physical image, word-of-mouth, and the customer's actual experiences with the goods and services. As a result, we come up with the following hypothesis.

H3: Corporate image has a positive effect on behavior intention

3.4 The Moderating Effect of Affordability on the Corporate Image on Behavior Intention

Affordability is critical in making a valuation decision and deciding whether or not to buy (Voss et al. 1998). Dodds et al. (1991) proposed a relationship model of price, quality, and perceived value. Their findings show that pricing has a beneficial impact on people's perceptions of quality and value and their propensity to buy. When consumers' product knowledge is inadequate, they frequently perceive the price as a crucial extrinsic quality indication. Higher-quality products appear to be more expensive (Balestrini and Gamble 2006). According to certain studies, perceived price unfairness harms customers' purchasing intentions (Hardesty and Suter 2013). The economic variable that can influence behavior intention, in this case, is perceived affordability (perceived financial control) (Cheng et al. 2011). Cheng et al. (2011) stated that regardless of whether a product is pricey or affordable, the consumer's perceived capacity to afford it encourages the purchase of the product. We propose the following hypothesis based on our previous discussion.

H4: Affordability strengthens the link between corporate image towards behavior intention

3.5 The Mediating Effect of Corporate Image on EWOM to Behavior Intention

Hoyer et al. (2016) found that WOM was the most reliable and objective source of information on a company's reputation. Bharadwaj et al. (1993) stated that reputation is an essential proxy for more detailed evaluation when a purchase is high inexperience or credence attributes. Söderlund et al. (1999) find that consistently customer happiness improves its brand and protects it from high customer attrition. Image is an

essential variable in influencing marketing activities. Image is crucial for any organization because it can influence customers' perception of the goods and services offered (Zeithaml et al. 1996). As a result, the image impacts customers' buying behavior, highlighting the importance of maintaining a desirable image. Researchers have identified several factors that determine the image. For example, Normann (1991) argued that the combined effects of advertising, public relations, physical image, word-of-mouth, and the customer's actual experiences with the goods and services grow the image in the customer's mind. Based on the prior discussion, we suggest the following hypothesis.

H5: corporate image mediates the relationship between EWOM and behavior intention

3.6 The Mediating Effect of Corporate Image on Service-Scape to Behavior Intention

According to Durna (Bataineh 2015), service-scape can assist firms in projecting a positive image and improving their services. The primary reason for this is that service-scape components assist people in comprehending the corporate environment. In other words, while evaluating services can be difficult due to their intangible nature, service-scape aspects may help customers assess their surroundings (Walls et al. 2011). Through customers' experiences and their image of these experiences, customers obtain more information about products, businesses, or regions to make comparisons between other competitors, thereby avoiding unexpected risks (Durna 2015).

In general, customers want to buy products and services from a company with an excellent corporate image to avoid risks. According to Keller (1993), the term "corporate image" refers to the distinctive connotations that a corporation has in the minds of its customers. Corporate image is one of the most vital strategic resources available to businesses. It provides fertile ground for developing a significant and long-term competitive advantage over competitors (Bergh et al. 2010). Many kinds of research revealed that a good image encourages customer commitment and facilitates brand extensions (Casaló Ariño et al. 2007b). Corporate image enhances customers' understanding of a company's degree of quality, which reduces reluctance during the purchasing decision (Bataineh 2015). Hence, we propose the following hypothesis.

H6: corporate image mediates the relationship between servicescape and behavior intention

The relationship among variables in the previous discussion was figure out in the following research model. The model relates the antecedents of corporate image, i.e., E-WOM and service-scape, corporate image, and the consequence, i.e., behavior intention. We also consider the moderating effect of affordability on the relationship of corporate image on behavior intention.

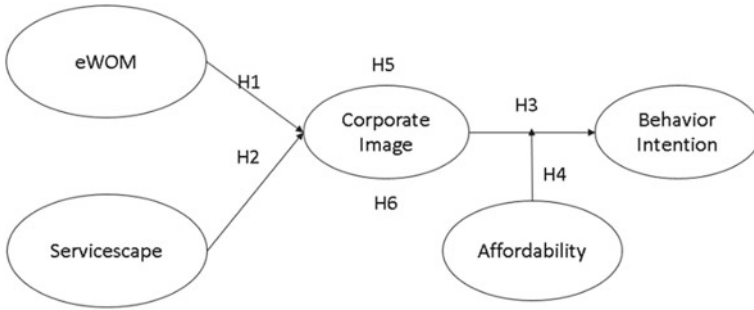


Fig. 1 Research model

4 Method

We conducted a causal survey study to get the data for the hypothesis testing of our research. The research setting is Antologi café, a viral local café that has tens of outlets in Indonesia. Sample selection uses purposive sampling with the following criteria: they have visited Antologi café, they have seen its social media account before their visit and read the review of the café from its customers’ experiences.

We develop a questionnaire to measure all variables in the research model. The variables in this study include electronic word of mouth (11 items), service-scape (7 items), corporate image (4 items), affordability (6 items), and behavior intention (4 items). Details of measurements showed in Table 2. All variable measures use a Likert scale on a scale of 1 to 5, from the lowest “strongly disagree” to the highest “strongly agree.” We use an online questionnaire to collect the data. Our study’s final usable sample consists of 159 people. SEM with AMOS software is used to test hypotheses (Fig. 1).

5 Results

5.1 Respondents Characteristics

The description of respondents’ characteristics showed in Table 1. Most of the café visitors age is between 18–32 years old. Males outnumbered females among those who came to the café for the first time. Surprisingly, the majority of visitors come to work. They are students living on less than 2.500.000 rupiahs each month.

Table 1 Classification of respondent

Classification	Sub Classification	Total	Percentage
Age	18–22	48	30.18%
	23–27	86	54.08%
	28–32	23	14.46%
	33–37	2	1.25%
	Total	159	100.00%
Gender	Male	103	64.78%
	Female	56	35.22%
	Total	159	100.00%
Visit	1	100	62.89%
	2	31	19.50%
	3	9	5.66%
	≥4	19	11.95%
	Total	159	100.00%
Objective	Work	90	56.60%
	Relax	69	43.40%
	Total	159	100.00%
Occupation	Students	108	67.92%
	Freelance	33	20.75%
	Employee	3	1.89%
	Police	0	0.00%
	Businessman	15	9.43%
	Housewives	0	0.00%
	Total	159	100.00%
Expenditure	<Rp. 2.500.000	112	70.44%
	≥Rp. 2.500.000– <Rp. 5.000.000	44	27.67%
	Rp. 5.000.000–<Rp. 10.000.000	3	1.88%
	≥Rp. 10.000.000	0	0
	Total	159	100%

5.2 CFA Analysis and Reliability

Based on the Confirmatory Factor Analysis, we tested the validity and reliability of the indicators in the full SEM model. The valid and acceptable indicators are if the loading factor is greater than 0,50 or $> 0,60$ (Ghozali 2014). This model's reliability tests assess and reflect the construct, resulting in consistent measurements for each instrument item. Construct reliability based on Confirmatory Factor Analysis is used to measure items reliably. In the whole SEM model, we assessed the indicators'

Table 2 Results of testing confirmatory factor analysis and construct reliability

Construct and indicator	Standardized loading factor
Electronic Word of Mouth (CR = 0.864)	
1. Accurate recommendation (EWOM)	0,630
2. Trusted recommendation (EWOM_1)	0,703
3. Convincing recommendation (EWOM_2)	0,659
4. Honest Recommendation (EWOM_3)	0,679
5. Clear recommendation (EWOM_4)	0,514
6. Easy to understand review (EWOM_5)	0,545
7. Understand review (EWOM_6)	0,517
8. In line review (EWOM_8)	0,662
9. Actual comment (EWOM_9)	0,665
10. Reliable comment (EWOM_10)	0,646
11. Widely available comment (EWOM_11)	0,520
Servicescape (CR = 0.798)	
1. Ambient music (SER)	0,619
2. Scent room (SER_1)	0,649
3. Wall color (SER_2)	0,682
4. Furniture design (SER_3)	0,645
5. Understandable sign (SER_4)	0,510
6. Good lighting (SER_5)	0,529
7. Good facility (SER_6)	0,567
Affordability (CR = 0.769)	
1. Reasonable price (AFF)	0,800
2. Worth with quality (AFF_1)	0,839
3. Worth with price (AFF_2)	0,789
4. Worth with experience (AFF_3)	0,751
Corporate Image (CR = 0.873)	
1. Quality service (COR)	0,648

(continued)

Table 2 (continued)

Construct and indicator	Standardized loading factor
2. Architecture design (COR_1)	0,536
3. Prestisius place (COR_2)	0,514
4. Famous place (COR_3)	0,532
5. Cozy place (COR_4)	0,695
6. Cozy to work (COR_5)	0,652
Behavior Intention (CR = 0.857)	
1. Intended revisit (BEI)	0,645
2. Recommend to another consumer (BEI_1)	0,638
3. Main destination (BEI_2)	0,928
4. Loyal to the brand (BEI_3)	0,865

validity and reliability. A valid and acceptable indicator is when the loading factor is greater than 0,50 or greater than 0,60 (Ghozali 2014).

6 Result

Empirical model testing using Structural Equation Modeling. The model indicates Chi-square = 1122.796 with a probability value = 0.000 at the Degree of Freedom = 463; GFI = 0.705, AGFI = 0.705, CMIN/DF = 2.425 and TLI = 0.776, while the values on CFI = 0.705 and RMSEA = 0.097. The results on the model can be said to be fit. Based on statistical analysis, the results of this research model have met the predetermined criteria standards.

The framework showed in the context of a complete model analysis through regression weights. There are three hypotheses accepted, and 1 hypothesis rejected. In this the study, the corporate image on behavior intention has a tremendous value. However, affordability cannot moderate corporate image and behavior intention, which means that the higher or lower-level consumer is still loyal to the product. Meanwhile, electronic word of mouth has a positive influence on corporate image. Then service-scape positively influences corporate image (Fig. 2 and Table 3).

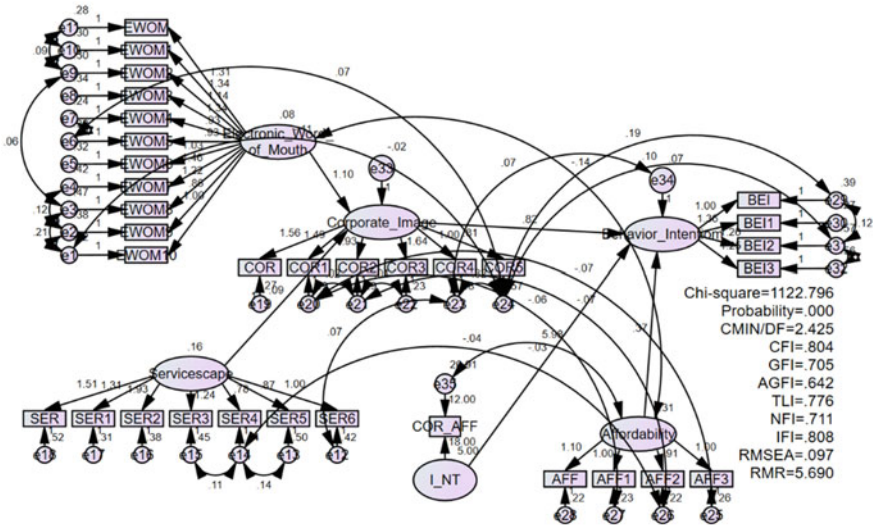


Fig. 2 Results of full model analysis

Table 3 Results of hypothesis testing

			Estimate	S.E.	C.R.	P	Description	
1	Corporate image	<	EWOM	1.220	0.312	3.908	***	Significant
2	Corporate image	<	Servicescape	0.119	0.039	3.076	0.002	Significant
3	Behavior intention	<	Affordability	0.368	0.068	5.389	***	Significant
4	Behavior intention	<	Corporate image	0.693	0.146	4.736	***	Significant
5	Behavior intention	<	Interac	-0.026	0.005	-5.424	***	Not significant

6.1 Test of Mediating Effects

In the next stage, we tested the effects of mediation of corporate image on the relationship of E-WOM on corporate image. Second, we tested the mediation effects of corporate image on the relationship of service-scape on behavior intention. Then, we compare the results of standardized direct effect and standardized indirect effect.

The meaning of its result giving some explanation that:

The relationship between EWOM and behavior intention is the mediating effect of corporate image. Based on Table 5, the direct value is 0.023. Table 5 showed that the impact of mediating EWOM on the influence of corporate image on behavior intention showed that the mediation effect value was 0.372, higher than the direct effect of 0.023.

The relationship between Servicescape and behavior intention is the mediating effect of corporate image. Based on Table 4 shows that the direct value is -0.002. Table 5 showed that the impact of mediating service-scape on the influence of corporate image on behavior intention showed that the mediation effect value was 0.291, higher than the direct effect of -0.002.

7 Discussion

In the following sub-section, we discuss the results of our study based on the statistical results in the data analysis process.

Table 4 Standardized direct effects

	Affordability	Servicescape	Electronic word of mouth
Corporate image	0.000	0.477	0.609
Behavior intention	0.000	-0.002	0.023

Table 5 Standardized indirect effects

	Affordability	Servicescape	Electronic word of mouth
Corporate image	0.000	0.000	0.000
Behavior intention	0.000	0.291	0.327

7.1 The Effect of EWOM on Corporate Image

The hypothesis testing result proved that electronic word of mouth positively affects the corporate image. Thus, we got support for hypothesis 1 because of the influence of each variable's relationship. This finding is similar to Polinsky et al. (1983). Firms with a strong reputation attract more consumers and benefit from positive word-of-mouth (WOM), resulting in increased new customer acquisition and lower attrition. Research by Cermak et al. (1994) linked trust to the profit context's higher image. Thus, referring to the hypothesis, the variable electronic word of mouth probably could influence the corporate image.

7.2 The Effect of Service-Scape on Corporate Image

Related to the hypothesis testing result, hypothesis 2 stated a positive and significant influence variable service-scape to the corporate image in Antologi. Hence, we accept hypothesis 2 because of the influences of each variable's relationship. This finding was similar to a study by Lin (2004) that emphasized the importance of investigating service-scape on cognitive evaluations rather than emotional ones. LeBlanc et al. (LeBlanc and Nguyen Jan. 1996) stated that service-scape influences customers' overall image perceptions. Thus, based on the hypothesis testing result and the previous study, the service-scape variable could affect the corporate image.

7.3 The Effect of Corporate Image on Behavior Intention

Concerning the hypothesis testing result, hypothesis 3 stated a positive and significant influence of corporate image on behavior intention in Antologi. Hence, we got support for hypothesis 3 because of each variable's relationship results. This hypothesis was related to the study's findings by Normann (1991). For example, argued that image has grown in the customer's mind through the combined effects of advertising, public relations, physical image, word-of-mouth, and the customer's actual experiences goods and services. Thus, based on the hypothesis testing result and the previous study, the corporate image variable could influence behavior intention.

7.4 The Moderating Effect of Affordability on the Corporate Image on Behavior Intention

According to the hypothesis testing result, hypothesis 4 stated that the affordability variable had a not significant moderating effect towards the relationship of variable

corporate image to behavior intention. Duman et al. (2005) identified price as an essential antecedent of the perceived value of tourism services in previous research. Therefore, a lower price for a given quality (i.e., perceived price is reasonable) in the acceptable price range leads to a higher perceived value and, consequently, a greater intention to purchase (Dodds et al. 1991). The result of this study has a different outcome than the previous study. Based on the regression weight test, the value C.R. is -5.424 and p-value ($***/0.001$). It means that affordability has no significant moderating effect of corporate image on behavior intention. It seems that customers who have a higher perspective on the corporate image can nullify affordability. Therefore, if consumers have behavior intention, they will likely buy Antologi Café's product devoid of the price. Cooper (1969) stated that the perceptions of the same price might vary across customers. It might be because of the perceived value that each customer felt towards the product (Dodds et al. 1991). Consequently, the result of hypothesis testing in this study and prior research has a different outcome.

7.5 The Mediating Effect of Corporate Image on EWOM to Behavior Intention

According to the fifth hypothesis testing results, the corporate image had a robust mediating effect on the association between electronic word of mouth and behavior intention. This result in line with Zeithaml's (1996) conclusions, which are considered an important variable is influencing marketing activities. Image is essential for any organization due to its ability to influence customers' perception of the goods and services offered. Another study was conducted by Wang et al. (2010), explaining that for that reason, the corporate image includes consumers' experience and evaluations related to the brand. Thus, according to the result of hypothesis testing and previous study, the corporate image variable significantly mediated the electronic word of mouth to lead to behavior intention.

7.6 The Mediating Effect of Corporate Image on Service-Scape to Behavior Intention

Hypothesis 6 explained that the corporate image variable had a significant mediating effect between service-scape and behavior intention regarding the hypothesis testing result. This study's outcome was similar to Keller's (1993) finding that corporate image refers to particular associations held in customer memory for a specific company. Image is vital for any organization because it can influence customers' perception of the goods and services offered (Boyd et al. 2010). Corporate image is considered one of the most important strategic resources that provide companies with the fertilized ground to build a solid and long-term sustainable competitive advantage

over competitors in the market. Thus, according to the result of hypothesis testing and previous study, the variable of the corporate image had significantly mediated the service-scape to lead the behavior intention.

8 Conclusions

Based on the analysis, hypothesis testing, and discussion, we draw the following conclusions. The first hypothesis testing results showed a significant impact of the effect of E-WOM on corporate image. This finding is in line with Polinsky et al. (1983). This outcome described that companies with solid reputations attract more consumers and benefit from positive word-of-mouth (WOM), resulting in increased new customer acquisition and lower churn. Research by Cermak et al. (1994) linked trust to the profit context's higher image. The second hypothesis, which stated that service-scape positively affects the corporate image, also got support. This finding supports the statement of LeBlanc et al. (1996), which indicated that service-scape plays an influential role in the overall image perceptions of customers. Our third hypothesis about the effects of corporate image on behavior intention also showed significant results. This result supports the finding of Hu et al. (2009), which stated that compared to an image with a more compelling sense of service loyalty, customer satisfaction and perceived image have been influential on service loyalty and satisfaction. The fourth hypothesis of our study, which proposed a moderating effect of affordability on the relationship of corporate image and behavioral intention, did not get any support. Thus, affordability did not significantly moderate the relationship between corporate image and behavioral intention. Thus, referring to the resulting hypothesis 4, it was stated, not support. The result is not in line with (Dodds et al. 1991). A higher perceived value is associated with a lower price for a given quality. As a result, the likelihood of making a purchase increase. However, in line with (Cooper 1969), it is stated that the perceptions of the same price might vary across customers. Our fifth and sixth hypotheses investigated the mediating effects of corporate image on the relationship of E-WOM and behavioral intention and service-scape and behavioral intention. Both hypotheses testing results showed significant results. The fifth hypothesis testing results supported (LeBlanc and Nguyen 1996) perceived corporate image on customer loyalty. In comparison, the sixth hypothesis testing results support the results of Durna et al. (2015). Servicescape can assist firms in projecting a positive image and providing superior service.

9 Limitations and Suggestions for Future Research

During the research process, some limitations are present and should be considered in future studies. First, the scale of service-scape and behavior intention may fit our research context; however, further development and adaptation may be needed

for future research. Second, the data of our study was limited to one café outlet in Yogyakarta. This limitation may limit the generalizability of our results. Hence, we suggest the future research use multi-outlet/café/store to increase the generalizability of the results. Third, the four antecedents of behavior intention we have examined seem not enough to predict. Thus, other possible determinants, such as satisfaction, customer perceived value, and excitement, may be essential factors to influence behavioral intention.

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The Impact of E-Ticketing on Behavioral Intention to Use and the Moderating Role of Information and Communication Technology Tools



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Abstract This study is an attempt to measure the most important factors affecting the behavioral intention to use e-ticketing, considering the mediating effect of (Information Communication Tools (ICT) on the relationship between the following independent variables (perceived convenience, perceived ease of use, facilitating conditions, Perceived Usefulness, information quality, perceived security, perceived privacy, customer technical support, and infrastructure) and dependent variable (behavioral intention to use). The result revealed that the following independent variables (perceived convenience, information quality, perceived privacy) don't have direct impact on the dependent variable (behavioral intention to use). While the following variables (perceived ease of use, facilitating condition, perceived usefulness, perceived security, and infrastructure) have direct positive impact on the dependent variable (behavioral intention to use). The analytic results showed that concerning the (ICT) tools, two categories of (ICT) were revealed, the (ICT) tools as a moderator for the first category (low skills) moderate the relationship between perceived convenience and behavioral intention to use, while for the second category (high skills) (ICT) tools moderate the relationship between (customer technical support, infrastructure) and behavioral intention to use. The study a survey scheme and data were collected using a structured questionnaire from a sample of (254) internet users. The analytical statistics were derived using AMOS® 20.0 software package.

Keywords E-ticketing strategies · Information and Communication Technology tools (ICT) · Behavioral intention to use

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1 Introduction

The past few years have witnessed a great development in internet technology and increased popularity among individuals and organizations, which has led the latter to pay more attention to the development of new methods of dealing with customers electronically and take care of them and maintain them, which requires developing websites and making them more effective and safer. Owning an ineffective website in terms of the services provided will definitely weaken the image of the organization and its position in the market.

It is therefore necessary to pay attention to the factors that enhance the customer's position and uses of the website. Individuals usually accept to visit websites that provide them with high quality services at low prices, and quick delivery of the required services.

Studies have shown that customer satisfaction occurs when the purchase process is economic and the experience of dealing with the website is a pleasant one, which may lead to a repeat visit (Ahn et al. 2007). Airlines are advanced users of ICT tools, and several airline functions rely heavily on ICT tools. The emergence of the Internet in the mid-1990s as well as the development of Intranets and Extranets forced airlines to refocus their strategies on technological innovations to enhance their competitiveness (Buhalis 2004).

E-tickets have had a share of this development, which is widely used by organizations and in various forms such as shopping coupons, tickets to a music or sports event, as well as booking airline tickets at any time and from anywhere. The Internet and websites that have changed everything in the business world over the past two decades have had an impact on the rapid expansion of electronic booking and payment systems around the world.

E-ticketing is easier, immediate, secure, informative, and systematic to sharpen the behavior intention of the customer. Organizations improve their information systems and service quality for e-ticketing to facilitate and motivate their customers to buy e-tickets (Shafique et al. 2019).

The acceptance of e-commerce by prospective online buyers is enhanced because of the usefulness and user-friendliness of the online buying system, joyful experience, computer adeptness, and exploratory mindset. Thus, the acceptance of online buying as a viable option to the traditional face-to-face encounters for the purchase of air and rail tickets brings various issues regarding customer's perception and attitude toward technology acceptance for e-ticketing (Panchamia and Doctor 2015).

Is the wide use of electronic tickets really an alternative to the purchase of traditional tickets? Can the latter offer a number of benefits to organizations? As a reduction in cost and an increase in operational efficiency, which may affect the consumer's desire to take purchasing decisions, is the use of electronic tickets expected to continue to increase over time?

Reviewing previous studies, it appears that most studies focused on some factors that may affect the decision to buy electronic tickets over the Internet. The most important factors reported by previous studies were ease of use, safety and risk in

the purchasing process in terms of financial personal issues. There is no study that took all these factors combined in terms of ease of use, saving in time and effort, providing the necessary facilities to deal with the website, in addition to the quality of information, account security, privacy, providing the necessary infrastructure, and technically supporting the customer. All these factors combined will be taken into consideration, to reveal their impact on the intention of buying tickets online, so this distinguishes our study from other studies and gives it more weight in knowing the most important factors affecting the intention to use, considering the effect of the moderating variable of the study (Information Communication Technology Tools: ICT Tools) through which we will highlight the extent to which this variable is able to modify the relationship between the independent and dependent variables.

The past studies revealed that many factors affect the intent-to-use e-ticketing system for flight booking. The decision-makers need to know what are the most powerful factors that lead the customer to use the e-ticketing system and to apply an advanced change to obtain the intention to purchase. Hence, the role of this study is to reveal the relationships between all independent variable on intention to use. This is because applying the e-ticketing system is considered an advanced way rather than face-to-face purchasing. This study is an attempt to understand the customers' behavioral intention to use e-ticketing system to book their flights instead of buying tickets ordinarily, i.e., face-to-face. Furthermore, it helps decision-makers solve any related problems and encourage new customers to use modern online services.

So, this study tries to determine the most effective factors that affect the customer's behavioral intention to use e-ticketing system. Furthermore, to know how (ICT) Tools will moderate the relationship between these two variables.

Therefore, we need to answer the following research questions:

- How does perceived convenience impact Behavioral Intention to Use?
- How does perceived ease of use impact Behavioral Intention to Use?
- How does Facilitating Conditions impact Behavioral Intention to Use?
- How does Perceived Usefulness impact Behavioral Intention to Use?
- How does Information Quality impact Behavioral Intention to Use?
- How does Perceived Security impact Behavioral Intention to Use?
- How does Perceived Privacy impact Behavioral Intention to Use?
- How does Customer Technical Support Impact Behavioral Intention to Use?
- How does Infrastructure impact Behavioral Intention to Use?
- How do ICT tools moderate the relationship model of e-ticketing strategies (Perceived Convenience, Perceived Ease of Use, Facilitating Conditions, Perceived Usefulness, Information quality, Perceived Security, Perceived Privacy, Customer Technical Support, Infrastructure) and Behavioral Intention to Use?

For that, this study aims to develop a new model for e-ticketing strategies and the customer's behavioral intention to use, by collecting the most effective factors from the literature, testing the model with the population of the study, using AMOS to analyze the collected data, using ICT as a moderator, and writing discussion, results and recommendations.

2 Theoretical Framework

The theoretical framework of the study is divided into three main sections:

2.1 *E-Ticketing Strategies*

The first section of the theoretical framework is divided into nine variables which are: perceived convenience, perceived ease of use, facilitating conditions, perceived usefulness, information quality, perceived security, perceived privacy, customer technical support, and infrastructure.

Perceived Convenience. It is an important aspect of the consumer's concern in terms of the time and effort needed to make the purchase of products, and some have explained that convenience is a way to create added value for consumers by reducing the time and effort spent to complete the purchase process, and the product may be considered appropriate if obtained by the consumer with the least possible psychological and physical pressure that the consumer can feel while completing the purchasing process especially when using modern methods. In the process of purchasing services, saving time compared to traditional systems affects the intention to buy to the consumer, according to a study (Prayoonphan and Xu 2019).

Time is also one of the most important factors affecting the process of online marketing, as browsing products electronically can reduce time and stress compared to traditional marketing. There are differences between consumers who deal with the Internet and those who are not connected to it, as the first category is interested in saving time and choice while the second group is concerned about the direction of security, privacy and on-time delivery. What distinguishes dealing with the Internet is the simplicity of the purchasing process, saving time and traffic jams (Vasić et al. 2019).

The definition of convenience will also be based on easy access to products and convenience in dealing, and ease of use depends on ease of learning, control, clarity, understanding, flexibility and easy access to skills to use the product, as it is measured by working more and faster and increasing efficiency and productivity in addition to making the task easier and more useful, and it is clear that the concept of comfort is based on dimensions that are based on reduced waiting and saving effort, and it is considered a key factor to motivate consumers to conduct their transactions and buy (Zhang et al. 2006).

Perceived Ease of Use. Experience in general is very important for performing any activity, especially if it is satisfactory, it becomes a catalyst for the involvement of individuals, especially those who use websites, which studies have shown that the ease of use of the site directs and motivates individuals to use it and increases the behavioral intention to use it (Kim and Lim 2001; Moon and Kim 2001).

Studies through the TAM (Technology Acceptance Model) model have shown that ease of use and perceived benefit lead to increased use of the website, although they have not proved to be sufficient factors to clarify the motivations of consumer use of the website. It can also be added that the playfulness factor can increase acceptance of use of the site (Ahn et al. 2007).

Facilitating Condition. This factor reflects the availability of the facilitated conditions available from the levels of performance, the effort expected by the consumer to complete his transactions online, the main expectations of the behavior of actual use lies in the intention of buying online and facilitating the conditions to complete it, and the results have shown that the actual use of sites at the lowest cost (LCC: Low Cost Carrier) for the purchase of airline tickets depends on three main factors: The intention to buy online, usually consumers in the use of the website, and the easy conditions available to consumers. It has also been shown that the factor of better conditions has an impact on online purchases and on the intention to use online purchases (Escobar-Rodríguez and Carvajal-Trujillo 2014).

It has also been defined as the degree to which individuals believe to be the regulatory and technical infrastructure to support the use of the system (Prayoonphan and Xu 2019).

According to (UTAUT: Unified Theory of Acceptance and Use of Technology), facilitating condition affects the behavior of use and has a link with behavioral intentions, and therefore stimulates the use of the electronic deposit and payment system (Prayoonphan and Xu 2019).

Perceived Usefulness. Website profiles, perceived usefulness and confidence factor are among the most important variables that determine the behavior of online consumer shopping, and the results have indicated that the attitudes of online shoppers in terms of perceived usefulness, security of websites site and leisure shopping orientation have all contributed to online shopping. The results indicated that Indian consumers' attitudes about online shopping are determined by the perceived usefulness and ease of use of websites (Khare et al. 2012).

Many studies have shown the relationship between web quality and user acceptance, most of which have shown that web quality and the quality of information available have a positive impact on users' views of perceived interest direction and ease of use of the site (Ahn et al. 2007).

In the past decades, ease of use and perceived usefulness have been very important in determining the extent to which individuals accept the use of information technology (Kim and Lim 2001; Moon and Kim 2001).

The perceived usefulness is measured by six items related to work more quickly, job performance, increased productivity and effectiveness, as well as making the task easier and useful (Zhang et al. 2006).

Perceived usefulness, and perceived ease of use are defined differently but in practice they may be inseparable to users. It is highly likely that at the high level of the construct, the respondents would think convenience means useful. But when we

operationalize the perceived convenience construct, the respondents should not be confused with perceived usefulness (Zhang et al. 2006).

Information Quality. The concept of information quality is related to (Relevance, Accuracy, Timeliness, Content, Format, Completeness, Understandability), it is the degree to which the user thinks that the information at the website holds the features of content, accuracy, format, and timeliness (Kuan et al. 2008). It means the value perceived by a customer (Chang et al. 2019). Hence, quality of information is essential for the decision to purchase at the website for the first time as well as for making purchases in the future (Kuan et al. 2008).

Offering high standards of information quality such as being (various, complete, detailed, accurate, timely, relevant, and reliable) will definitely afford consumers with convenience, and raise their ability to take decisions.

Information quality from the customer's perspective includes that the information on the website is, accurate, comprehensive, conform to a format, have content, be timely, and up to date (Escobar-Rodríguez and Carvajal-Trujillo 2014; Kim et al. 2008; Wen 2009).

Perceived Security. The perceived security that consumers notice in companies' websites is one of the aspects that consumers consider significant for online purchasing (Kim et al. 2011). It could be also described as the security components such as authentication, protection, verification, encryption, and non-repudiation (Kim et al. 2008). The security for providing personal information, and online purchase risk (Yang and Jun 2008).

Therefore, if consumers perceive that the website has security components such as a safe shopping guarantee, a security policy, and protection mechanisms such as encryption, protection, and authentication, they will trust the security during online purchasing (Escobar-Rodríguez and Carvajal-Trujillo 2014).

Guo et al. (2012) defined it as 'the ability of the website to protect consumers' personal data from any unauthorized disclosure of information during electronic transactions'.

Therefore, security will affect customers' decision to buy online services including e-ticketing (Qteishat et al. 2014; Santos 2003; Vasić et al. 2019; Yang and Jun 2008; Zhang et al. 2006).

Security and privacy were proposed to be more critical than information content and site design for determining purchase intention (Zhang et al. 2006). Data security is also affect consumer decision-making regarding e-ticketing (Qteishat et al. 2014).

Perceived Privacy. Privacy is one of the major elements that may hinder the development of e-commerce (Escobar-Rodríguez and Carvajal-Trujillo 2014; Yousafzai et al. 2003), it is critical for consumers that online companies should protect their privacy during online purchasing, since it expresses the possibility that the online company will guarantee that the confidential information of the consumers is protected against unauthorized disclosure or use (Kim et al. 2008).

Yousafzai et al. (2003) defined it as “the consumers’ perception regarding their ability to monitor and control the information about themselves.” the consumer may think that the online seller will give or sell this information to other entities, companies, and person. Accordingly consumers must know that online companies do have the required facilities to guard their privacy (Escobar-Rodríguez and Carvajal-Trujillo 2014; Kim et al. 2008).

Customer Technical Support. Customer technical support is considered one of the critical issues that are using in e-ticketing techniques because customer perceptions are playing an important role in service quality which is presenting to the customers. Decision-makers are taking customer perception into consideration when shaping the individuals’ roles and services to utilize e-ticketing services (Qteishat et al. 2014).

For that, the level of technical support provided to the customer is influencing by the customer perception and notes, especially when arising any problems in the ticketing service. Another study stated that the perceptions of the customer regarding customer service have a big effect on customer behavior because when the customer finds that the specific organization will provide him good and different support if he purchases his ticket from it, there will be a great chance to buy his ticket from this organization (Mensah et al. 2021).

Furthermore, Srivastava and Purohit (2021) stated that many airlines’ companies have lost many customers as a result of a failure to provide good customer support in e-ticketing services. Airlines companies found that e-ticketing is one of the good solutions in reducing costs and increasing efficiency in booking tickets, so they quickly adopted e-ticketing without putting in good services and protocols for customers and technical support.

Furthermore, several organizations have confirmed that using e-ticketing in their services often requires the expansion of the practices of the customer service that meet the specific needs of customers related to e-ticketing and e-service. Without meeting these needs, customers will see the e-ticketing services as cumbersome and will not be encouraged to use e-service to meet their needs (Jin et al. 2021; Kolsaker et al. 2004).

Infrastructure. Infrastructure support often refers to the extent of use and deployment of IT infrastructures to support the user’s activity. Infrastructure like computers, networks, servers, and databases which using to support e-ticketing operations is also playing a good role in developing customer satisfaction with these services (Panchamia and Doctor 2015).

As stated before, e-ticketing services were developed in a quick and weak way in the organization which was not initially integrated with other services, which made some problems in serving and supporting customers. In order to use e-ticketing services in an effective way and to solve customer problems, organizations should establish network infrastructure to support e-ticketing services and to create a comprehensive system that meets the customer needs and streamlines processes within the organization. Without this infrastructure support, organizations would not

be able to achieve cost reductions and enhanced customer satisfaction (Qteishat et al. 2014).

Infrastructure impacts customer and organizational outcomes together. The impact of e-ticketing infrastructure for the customer is the importance of availability and accuracy in service and enabling the customer to purchase his tickets by using an accurate system on other hand, the infrastructure can provide the organization the continuity and the ability to minimize risks and support the functionality of the processes. Thus, infrastructure support must be importantly considered when developing the services of e-ticketing processes (Jin et al. 2021; Mensah et al. 2021; Zambon et al. 2011).

2.2 *ICT Tools (The Moderator)*

Information and communication technology (ICT) is divided into two main sides: information technology and communications. The first side is referring to information technology which means any computed technology, like computers, any connected hardware, software, networks, any communication infrastructure and devices, the internet, and others. The second side is called communication which refers to the transmission of data from one computer to another, or from one device to another. As a result, any machine that aids data transfer qualifies as a communications device. Modems, cables, and ports, for example, are all communication equipment. Programs that allow data to be transmitted are referred to as communications software (Almakenzi et al. 2015; Alzaghal and Mukhtar 2017; Cheng et al. 2021).

Information and communication technologies (ICT) allow people to access information via telecommunications, so the term is similar to information technology but also refers to communication technologies like the internet, Mobiles, wireless networks, voice over internet protocol (VoIP), video conferencing, social networking, and other communication mediums. Modern information and communication technology has created a global community, allowing people to communicate with one another regardless of where they live. As a result, ICT is examined in relation to how current communication technologies impact society. The relevance of ICT, according to the European Commission, rests less in the technology itself than in its ability to provide access to information and communication for underserved communities (Alzaghal et al. 2020; Pratt 2021).

ICT has aided the formation and growth of new enterprises by providing a value proposition based on its use in areas such as online sales, outsourcing, and competition. Information and communication technology (ICT) are seen as instruments that help boost production and transparency in a variety of industries, including agriculture and tourism. As a result, effectively utilizing ICT has become a vital prerequisite for worldwide competitiveness, as it is critical in supporting and strengthening information sharing through new channels of communication rather than conventional ones. ICT tools are also thought to help boost production and transparency in a variety of industries, including agricultural and tourism. Because the low cost and

accessibility of IT products promote access to information outside national lines, the growth of ICT has led to substantial changes in society since the emergence of the internet (Alzahal and Mukhtar 2018; Pratt 2021).

As a result, effective use of ICT has become a core requirement for international competitiveness, as it is critical in supporting and enhancing information sharing using new channels of communication rather than traditional ones. As a result, ICT companies seek out technology professionals rather than business professionals (Mensah et al. 2021).

2.3 Behavioral Intention to Use

It is important to understand customers' purchase intentions because a customer's behavior can usually be predicted by his or her intention (Chang et al. 2019). "Theory of Reasoned Action (TRA), which suggests that social behavior is motivated by an individual's attitude toward carrying out that behavior, a function of one's beliefs about the outcome of performing that behavior and an evaluation of the value of each of those outcomes. According to TRA, behavior is determined directly by the intention to perform, because people, in general, behave as they intend to do, within the available context and time. Behavioral intentions to use, in turn, are determined by these attitudes toward using the system. Finally, behavioral intentions to use lead to actual system use" (Moon and Kim 2001).

"According to the Theory of Planned Behavior and its predecessor, the Theory of Reasoned Action, behavioral intention can be a strong predictor of actual behavior" (Koufaris 2002). Therefore, the significance of behavioral intention to use as a dependent variable in this study model.

3 Conceptual Model

Based on literature review and relating it to the structural model, the investigated constructs and their definition are summarized in Table 1 as follows:

Depending on the previous studies in literature and the previous constructs, the following hypotheses were proposed:

- H1 The Perceived Convenience has a direct impact on Behavioral Intention to Use.
- H2 The Perceived Ease of Use has a direct impact on Behavioral Intention to Use.
- H3 The Facilitating Conditions has a direct impact on Behavioral Intention to Use.
- H4 The Perceived Usefulness has a direct impact on Behavioral Intention to Use.
- H5 The Information Capability has a direct impact on Behavioral al Intention to Use.

Table 1 The literature-derived constructs and the operational definitions

Model	Constructs	Definitions
E-Ticketing Strategies	Perceived Convenience	According to customer perception of convenience, the advantage of online shopping is related to browsing benefits and the reduction of time spent on shopping (Szymanski and Hise 2000)
	Perceived Ease of Use	Easy to learn, expert's help, clear and understanding, easy to become skillful, mental effort, controllable, friendliness (Ahn et al. 2007)
	Facilitating Conditions	The degree to which an individual believes that organizational and technical infrastructure exists to support use of the system (Escobar-Rodríguez and Carvajal-Trujillo 2014)
	Perceived Usefulness	Quickness, better decision, job performance, save money, productivity, task quality, job easiness (Ahn et al. 2007)
	Information Quality	Relevance, Accuracy, Timeliness, Content, Format, Completeness, Understandability (Kuan et al. 2008)
	Perceived Security	The security for providing personal information, and online purchase risk. Security refers to freedom from risk or doubt during the service process and affects consumers' confidence in online transaction (Yang and Jun 2008; Zhang et al. 2006)
	Perceived Privacy	The probability that the online seller will ensure that the confidential information on the consumer acquired during the completion of the online transaction is protected against unauthorized disclosure or use (Kim et al. 2008)

(continued)

Table 1 (continued)

Model	Constructs	Definitions
	Customer Technical Support:	There are many success characteristics of the systems determining criteria in the assessment of system support to the customers like; reliability, response time and ease of terminal use; data accuracy, reliability, completeness, system flexibility and ease of use; and consistency of the user interface, quality of documentation and sometimes, quality and maintainability of the program code (Buhalis 2004; Sureshkumar and Palanivelu 2011)
	Infrastructure	Infrastructure support refers to the adequacy of the deployment of IT infrastructures like computers, networks, servers, and databases, to support the user's activity. Infrastructure support and facilitating conditions are important additions to Technology Acceptance Model for online shopping tasks (Bhattacharjee and Hikmet 2008; Panchamia and Doctor 2015)
(ICT) Tools		Information and communication technologies are important tools that are utilized in everyday life and can help SMEs grow by encouraging the establishment and development of new firms. In research on organizational and business success, ICT tools have been employed as a success factor (Alzaghal and Mukhtar 2018; Cheng et al. 2021)
Behavioral Intention to Use	Intention to Use	Continuance, regular use, frequency, prefer to use, recommendation (Ahn et al. 2007; Koufaris 2002; Palmer 2002)

- H6 The Perceived Security has a direct t impact on Behavioral Intention to Use
- H7 The Perceived Privacy has a direct impact on Behavioral Intention to Use.
- H8 The Customer Technical Support has a direct impact on Behavioral Intention to Use.
- H9 The Infrastructure has a direct impact on Behavioral Intention to Use.

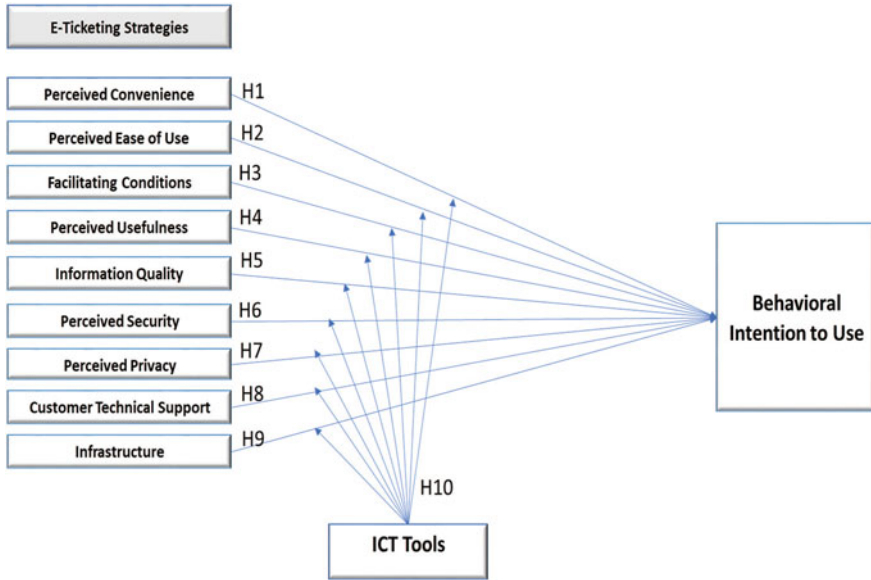


Fig. 1 The conceptual model

- H10 ICT tools moderates the relationship model of Perceived Convenience, Perceived Ease of Use, Facilitating Conditions, Perceived Usefulness, Information quality, Perceived Security, Perceived Privacy, Customer Technical Support, Infrastructure and Behavioral Intention to Use.

Depending on the summarized constructs shown in Table 1 and the previous hypotheses, the following Fig. 1 is showing the conceptual model for this study:

4 Research Methods

4.1 Development of Measurement Scales

To test the study hypotheses, the researchers addressed the variables through an extensive literature review. The main three constructs of this study are summarized in Table 2 below which illustrates the operationalization for each of the study constructs.

Table 2 Research construct operationalization

Constructs	Authors
E-Ticketing Strategies	
<p>a) Perceived Convenience</p> <ul style="list-style-type: none"> • E-ticketing saves time • E-ticketing offers the possibility of shopping 24/7 • E-ticketing is the smart way to spend time 	(Vasić et al. 2019)
<p>b) Perceived Ease of Use</p> <ul style="list-style-type: none"> • Learning about the E-ticketing Website is easy for me • It will be impossible to use the E-ticketing Web without expert help • My interaction with the E-ticketing Web is clear and understandable • It is easy for me to become skillful at using the E-ticketing Web • Using the E-ticketing Web requires a lot of mental effort • I find it easy to get the E-ticketing Web to do what I want it to do • I find this E-ticketing Website user friendly 	(Ahn et al. 2007)
<p>c) Facilitating Conditions</p> <ul style="list-style-type: none"> • I have the resources necessary to use E-ticketing websites • I have the knowledge necessary to use E-ticketing websites • I feel comfortable using E-ticketing websites 	(Escobar-Rodríguez and Carvajal-Trujillo 2014)
<p>d) Perceived Usefulness</p> <ul style="list-style-type: none"> • Using the E-ticketing Web enables me to accomplish tasks more quickly • Using the E-ticketing Web helps me to get better decision • Using the E-ticketing Web improves the performance of my tasks • Using the E-ticketing Web saves me money • Using the E-ticketing Web increases my task productivity • Using the E-ticketing Web improves my task quality • Using E-ticketing Web makes my job easier 	(Ahn et al. 2007)

(continued)

Table 2 (continued)

Constructs	Authors
<p>e) Information Quality</p> <ul style="list-style-type: none"> • E-ticketing websites provide accurate information I need in the purchase process • E-ticketing websites provide sufficient information needed in the purchase process • E-ticketing websites provide enough depth of information • The information provided by E-ticketing websites is helpful to me in the purchase process • The information in E-ticketing websites is clear to me • E-ticketing websites provide up-to-date information 	<p>(Escobar-Rodríguez and Carvajal-Trujillo 2014)</p>
<p>f) Perceived Security</p> <ul style="list-style-type: none"> • E-ticketing Websites check online customers' identity for security purposes • E-ticketing websites ensure that information about electronic transactions is protected from being altered or destroyed • I felt secure in providing personal information for purchasing airline tickets online • Airline companies have adequate website security features • Airline companies protect my privacy when purchasing tickets online • Airline companies' websites provide high protection on my credit card information 	<p>(Nithya and Kiruthika 2021; Qteishat et al. 2014)</p>
<p>g) Perceived Privacy</p> <ul style="list-style-type: none"> • I am concerned that E-ticketing websites collect too much personal information from me • I am concerned that E-ticketing websites will use my personal information for other purposes without my authorization • I am concerned that E-ticketing websites will share my personal information with other entities without my authorization • I am concerned that unauthorized persons (e.g., hackers) have access to my personal information • I am concerned about the privacy of my personal information during a transaction • I am concerned that E-ticketing websites will sell my personal information to others without my permission 	<p>(Escobar-Rodríguez and Carvajal-Trujillo 2014)</p>

(continued)

Table 2 (continued)

Constructs	Authors
<p>h) Customer Technical Support</p> <ul style="list-style-type: none"> • E-ticketing provides good personal sales assistance by e-mail or SMS • E-ticketing provides FAQ (frequently asked questions and answers) links to the relevant information • E-ticketing technical support terms and conditions of sales are easy to find through the web • E-ticketing provides an easy access to the company's policy for shipping and handling of their products • E-ticketing provides full details of pricing and taxes for product and service 	(Qteishat et al. 2014)
<p>i) Infrastructure</p> <ul style="list-style-type: none"> • E-ticketing infrastructure allows information to be readily accessible to you • E-ticketing Infrastructure helps new users with an easy access to all applications • E-ticketing Infrastructure can be integrated with other e-things • E-ticketing Infrastructure flexibly adjusts to new job demands • E-ticketing Infrastructure provides sufficient information • I'm satisfied with the accuracy that E-ticketing website provides 	(Qteishat et al. 2014)
(ICT) Tools	
<ul style="list-style-type: none"> • To what extent you are using websites and e-booking systems • To what extent you receive assistance from ICT specialists when using online purchasing system • To what extent your ICT infrastructure support using online purchasing • To what extent you are using market research and analysis tools (e.g., online focus groups, online surveys, statistical software, or secondary data such as searchable databases) • To what extent you are using ICT tools to communicate with companies and organizations • To what extent you are using ICT tools in order to collect business knowledge related to competitor's companies, offers, prices, and operating environment 	(Mkwizu and Sichone 2019 ; Pavel 2018 ; Silva 2017)

(continued)

Table 2 (continued)

Constructs	Authors
Behavioral Intention to Use	
<ul style="list-style-type: none"> • I will keep use this Website in the future • I will use this Web on a regular basis in the future • I will frequently use this Website in the future • I will use this site rather than other Websites for purchasing product • I will recommend others to use this Website 	(Ahn et al. 2007)

4.2 Research Design and Sampling

An online questionnaire was used to collect data from the study population which is the individuals who use electronic tickets. In order to test the validity of the measurement tool, the questionnaire was first tested by (30) experts from both the academic researchers and airline sectors, then the final form of the questionnaire was launched for 3 months.

The type of the sample that were used was a non-probability sample (purposive), the main reason for using this type of samples was that the population framework is not existed.

The final launched online survey can be found on this link: https://docs.google.com/forms/d/e/1FAIpQLSdXyDXUODbB2XJvoNYASKzR_Y1qIHHRPSjLQEWQovyYA-tw/viewform?usp=sf_link

The questionnaire used was a 5-Point Likert-type scale. The numbers of respondents by the end of the data gathering period were (254) respondents, classified according to gender was 56.7% male, 43.3% female; and by Age was 2.3% (less than 20) years, 62.2% (21–30) years, 31.9% (31–40) years, 3.6% (41 and over) years.

According to educational level, 4.3% high school and less, 65% had a bachelor’s degree, 30.7% post graduate degree.

As for social status, 27.2% were single, 68% were married, 2.4% were divorced, 2.4% were separated.

According to Duration of Social Media Consumption Daily, 30% were (less than 2) hours, 39% (2–4) hours, 24% (5–9) hours, 7% (More than 10) hours.

Royal Jordanian Airline was the first rank within the respondents’ best choice of airlines, followed by Turkish Airlines, Qatar Airways, and Emirates Airline.

5 Findings

5.1 Descriptive Statistics

The main descriptive statistics were derived using AMOS® 20.0 software package. Table 3 below illustrates the mean, standard deviation, and ranking for each of the variables used for the analysis.

Structural equation model was used to analyze the data. It permits to estimate the effect of independent variables on dependent variable, and estimation of mediating effects. From Table 4, the path coefficient from Perceived Ease of Use would have a significant effect on Behavioral Intention to Use. The results support H2 hypothesis ($\beta = 0.214$, $t = 3.758$, $P < 0.05$). Also, suggested that Facilitating Conditions would have a significant effect on Behavioral Intention to Use. The results support this hypothesis ($\beta = 0.136$, $t = 2.333$, $P < 0.05$). Also, H4 proposed that Perceived Usefulness would have a significant effect on Behavioral Intention to Use. The results support this hypothesis ($\beta = 0.149$, $t = 2.008$, $P < 0.05$) and the results found there is a significant effect of Perceived Security on Behavioral Intention to Use ($\beta = 0.172$, $t = 2.405$, $P < 0.05$). Finally, the results reveal a significant effect of Infrastructure on Behavioral Intention to Use ($\beta = 0.453$, $t = 6.066$, $P < 0.05$). So H9 is confirmed.

While the path coefficient from Perceived Convenience and Behavioral Intention to Use ($\beta = 0.021$, $t = 0.417$) is not significant ($P > 0.05$), therefore the results don't support H1. Also, the results indicate there is no direct effect of Information Quality on Behavioral Intention to Use ($\beta = 0.103$, $t = 1.195$, $P > 0.05$). The results don't support H5. Also, the results indicate there is no direct effect of Perceived Privacy on Behavioral Intention to Use ($\beta = 0.016$, $t = 0.361$, $P > 0.05$). The results don't support H7. In addition, H8 don't supported since there is no direct effect of Customer Technical Support on Behavioral Intention to Use ($\beta = 0.107$, $t = 1.745$, $P > 0.05$). The nine independent variables explain 63 percent of the variance in Behavioral Intention to Use.

To examine the moderate role of ICT tools, a multi-group analysis structural equation modelling was used (see Table 5). To ensure that differences in the relationships among the constructs of the study were because of the ICT tools effect, an invariance analysis was used. In the first step we classify the sample into two groups according to mean score namely: high ICT tools group (mean ≥ 3) and low ICT tools group (mean < 3) the sample size for each group (206,48) respectively.

The second step of the analysis involved testing the baseline model for the two groups. Therefore, the validated structural path model was examined across two groups (high and low) considered collectively -without any equality-constrained relationship across two groups. The chi-square and degree of freedom yielded from the unconstrained model were compared to the particular constrained path.

Table 3 Descriptive statistics and correlation matrix

Variable	Mean	St. De	1	2	3	4	5	6	7	8	9	10
ICT tools	3.60	0.700										
Perceived Convenience	4.08	0.656	0.288*									
Perceived Ease of Use	3.75	0.566	0.466*	0.481*								
Facilitating Conditions	3.94	0.722	0.279*	0.482*	0.613*							
Perceived Usefulness	3.90	0.666	0.266*	0.562*	0.581*	0.657*						
Information Quality	3.77	0.716	0.315*	0.618*	0.551*	0.670*	0.825*					
Perceived Security	3.76	0.703	0.361*	0.532*	0.495*	0.598*	0.736*	0.814*				
Perceived Privacy	3.45	0.799	0.324*	0.168*	0.428*	0.191*	0.249*	0.300*	0.273*			
Customer Technical Support	3.70	0.623	0.385*	0.402*	0.472*	0.355*	0.517*	0.560*	0.566*	0.420*		
Infrastructure	3.74	0.611	0.468*	0.453*	0.584*	0.528*	0.676*	0.678*	0.704*	0.426*	0.766*	
Behavioral Intention to Use	3.86	0.698	0.384*	0.462*	0.590*	0.479*	0.662*	0.657*	0.664*	0.348*	0.539*	0.732*

Note: * Sig < 0.01

The SD is the highest for perceived privacy and the lowest for perceived ease of use

Table 4 Path analysis for the constructs of the study

	Relation	Coefficients	CR	Support/non-support
Path	B I U ← Perceived Convenience	0.021	0.417	0.677
	B I U ← Perceived Ease of Use	0.214	3.758**	***
	B I U ← Facilitating Conditions	0.136	2.333*	0.02
	B I U ← Perceived Usefulness	0.149	2.008*	0.045
	B I U ← Information Quality	0.103	1.195	0.232
	B I U ← Perceived Security	0.172	2.405*	0.016
	B I U ← Perceived Privacy	0.016	0.361	0.718
	B I U ← Customer Technical Support	0.107	1.745	0.081
	B I U ← Infrastructure	0.453	6.066**	***

Explained variance proportion R2 of behavioral intention to use = 0.630

Note *p < 0.05; **p < 0.01

Table 5 Results of multi-group analysis for ICT Tools

Models	χ^2 difference	Δ df	P	B	t-value	β	t-value
Constrained Model	22.417**	9	0.008				
B I U ← Perceived Convenience	0.437	1	0.508	0.086	1.524	0.005	0.039
B I U ← Perceived Ease of Use	1.101	1	0.294	0.155	2.641*	0.183	1.136
B I U ← Facilitating Conditions	0.002	1	0.961	0.064	1.01	0.274	1.443
B I U ← Perceived Usefulness	0.577	1	0.447	0.224	2.856*	0.057	0.265
B I U ← Information Quality	5.465*	1	0.019	0.025	0.272	0.571	2.442*
B I U ← Perceived Security	0.149	1	0.699	0.089	1.081	0.013	0.076
B I U ← Perceived Privacy	0.286	1	0.593	0.033	0.666	0.034	0.315
B I U ← Customer Technical Support	5.886*	1	0.015	0.173	2.665*	0.388	1.786
B I U ← Infrastructure	7.362**	1	0.007	0.572	7.334*	0.051	0.233

Note * p < 0.05; ** p < 0.01

The results indicate that the groups (high/low) are different at the model level following a significant χ^2 difference tests ($\chi^2 = 22.417$, $p < 0.05$). This suggests that high and low ICT groups could have differences in Behavioral Intention to Use. The respective path analysis also indicates a significant χ^2 difference test on the paths: “Information Capability \rightarrow B I U”, “Customer Technical Support \rightarrow B I U” and “Infrastructure \rightarrow B I U”. Hence, supporting H10 partially. The beta value is significant effect of Information Quality on appear in the low ICT group ($\beta = 0.517$, $t\text{-value} = 2.442$) while the effect of both Customer Technical Support on B I U and Infrastructure on BIU are significant in high ICT group ($\beta = 0.173$, $t\text{-value} = 2.665$) and ($\beta = 0.572$, $t\text{-value} = 7.334$).

5.2 Reliability and Validity

Content validity was tested through distributing the first copy of questionnaire to (30) experts as illustrated before. To test the reliability “Cronbach alpha” was calculated as shown in the following Table 6:

Table 6 Cronbach alpha statistics

Variables	Cronbach Alpha
ICT tools	0.732
Perceived Convenience	0.782
Perceived Ease of Use	0.878
Facilitating Conditions	0.731
Perceived Usefulness	0.903
Information Quality	0.864
Perceived Security	0.858
Perceived Privacy	0.782
Customer Technical Support	0.857
Infrastructure	0.844
Behavioral Intention to use	0.887

6 Conclusions

The result revealed that the following independent variables (perceived convenience, information quality, perceived privacy) doesn't have direct impact on the dependent variable (behavioral intention to use).

The result also showed that the following variables (perceived ease of use, facilitating condition, perceived usefulness, perceived security and infrastructure) have direct positive effect on the dependent variable (behavioral intention to use).

The analytic results showed that concerning the (ICT) tools, two categories of (ICT) engagement were revealed, the first category is related to participants who have low skills in using computer skills and low online purchasing experience.

The (ICT) tools as a moderator for this category mediate the relationship between perceived convenience and behavioral intention to use, since the results showed no direct effect of perceived convenience and behavioral intention to use.

Therefore, companies should take into consideration the importance of illustrating the benefits and advantages of e-ticketing.

The second category of (ICT) tools was those participants with high computer skills and high online purchasing experience, for those the (ICT) tools mediate the relationship between (customer technical support, infrastructure) and behavioral intention to use.

Knowing that the results do not show any direct effect between customer technical support and behavioral intention to use. While, there is a direct effect between infrastructure and behavioral intention to use.

This indicate that companies should pay more attention to all the dimensions related to (customer technical support) which, may include: pricing and taxing, techniques, condition of sale, sales assistance, shipping policies).

Also, regarding the direct effect of infrastructure and behavioral intention to use, this implies that companies must devote more efforts on making the information of the websites more accurate, flexible, adequate, and easy to access.

7 Discussion

The results showed that facilitating conditions has a direct impact on behavioral intention to use e-ticketing and this result is consistent with the study of Escobar-Rodríguez and Carvajal-Trujillo (2014), which indicated that the facilitating conditions factor significantly affects online purchases and the intention to use. Furthermore, other studies have revealed that facilitating conditions are highly related to behavioral intent (Prayoonphan and Xu 2019; Venkatesh et al. 2012), and opposes the results found by San Martín and Herrero (2012), which indicates that customers pay high attention to the technical resources that support the use of the system, this accordingly will affect their intention to use e-ticketing.

The results of the study also revealed that both perceived ease of use, perceived usefulness, have direct impact on behavioral intention to use e-ticketing, and these results are consistent with the study of Shafique et al. (2019). Other studies like Moon and Kim (2001) also showed that perceived ease of use and perceived usefulness are very important and have a significant impact on creating the intention to deal with the website and the web system. Zhang et al. (2006), found also a positive relationship between perceived convenience and accepting the process of use. The study of Khare et al. (2012) showed that there are three factors associated with consumers' attitudes towards online purchases: 'perceived usefulness', 'ease of use', 'perceived risk'. This result also supported by Kolsaker et al. (2004) study which indicates that ease of purchase emerges as a key indicator of respondents' willingness to buy online.

The results also revealed that perceived security, and infrastructure have direct impact on behavioral intention to use e-ticketing, these outcomes are consistent with Panchamia and Doctor (2015) which revealed that the relationship between the factors of Technology Acceptance Model and other external factors such as perceived risk and infrastructure support which may influence the customer's attitude and intention to use towards e-ticket booking. Infrastructure support proved to be an insignificant variable affecting the behavioral intention to use is strongly determined by perceived usefulness and attitude. Kolsaker et al. (2004) results also indicate that respondents require further reassurance about the safety of transacting online and some service back-up from vendors. Concerns over the security of financial transactions and the confidentiality of personal information emerge as important factors in respondents' perceptions of risk. Taherdoost (2018) also concluded that intention to use e-services is ruled by three major variables: quality, satisfaction and security. (Chang et al. 2019; Vasić et al. 2019) revealed also that security is one of factors that creates a desire to buy by consumers.

The results of the study also showed that the following factors (information quality, and perceived privacy) have no direct impact on the behavioral intention to use, this result contradicts with the study of Kuan et al. (2008) which showed that information quality is highly associated with both intention of both initial and continued purchase. Furthermore, the study of Kim et al. (2008) revealed that (perceived privacy, and information quality) as part of perceived risk in their study affect intention to use. The main explanation for this result is that customers may believe that security is more important for them than privacy and they may own high skills and experiences in dealing with online purchasing, therefore these two factors did not affect their intention to use e-ticketing system.

Regarding the ICT tools (as a moderator), limited studies used ICT as a moderator between e-ticketing strategies and behavioral intention to use. The results of the study revealed that the ICT tools moderate the relationship between perceived convenience and behavioral intention to use for the first category participants who have low skills in using computers and online purchasing. Although that the same results showed that there is no direct effect of perceived convenience and behavioral intention to use without the moderator. Liébana-Cabanillas et al. (2020) found that perceived utility of mobile payment services is influenced by innovativeness, stress, and perceived simplicity of use. As a result, the desire to utilize mobile payment services as an ICT

tool is influenced by perceived utility, perceived satisfaction, perceived danger, and perceived trust. The results provide ways for businesses to combine this technology-based payment solution.

Furthermore, the ICT tools moderate the relationship between (customer technical support, infrastructure) and behavioral intention to use for the second category participants who have high skills in using computers and online purchasing. Although, that the same results do not show any direct effect between customer technical support and behavioral intention to use without the moderator, while there is a direct effect between infrastructure and behavioral intention to use without the moderator. In the same context, Mac Callum and Jeffrey (2014) explores the impact of ICT anxiety, ICT literacy, perceived ease of use and usefulness on the adoption of mobile learning. The results showed that the basic level of ICT literacy and an advanced level of mobile literacy had an impact on intention to adopt but an advanced level of ICT literacy was not found to have any effect. Furthermore, Puthur et al. (2020) indicated that the two main variables of the technology acceptance model (TAM), perceived usefulness and perceived ease of use, as well as trust and computer self-efficacy, account for over 70% of the variation in the user's intention to reuse the Indian railways' e-ticket booking site. The results indicate that in order to increase citizens' intent to reuse their services, the e-ticketing website should have user-friendly, high-quality information content and outstanding website quality.

Finally, the results of the study showed that ICT tools are not moderating the relationship between (Perceived ease of use, facilitating conditions, perceived usefulness, information quality, perceived security, perceived privacy) and behavioral intention to use. This result is disagreed with some studies in different fields, Bundot et al. (2017) found that lecturer's intention to use ICT was influenced by perceived usefulness, attitude, and perceived ease of use.

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Determinants of Intention to Continue Usage of Mobile Shopping Apps: Empirical Evidence from Morocco



Brahim Bighrissen

Abstract The objective of the study was to explore determinants predicting the intention to continue the use of mobile shopping apps by consumers in Agadir city, a model combining the ECM and TAM models has been suggested in this research. The research utilized the convenience sampling to gather data from 155 respondents having prior experience with mobile shopping app. The Structural Equation Modeling technique was applied to analyze the data using SmartPLS 3.2.8 software. The study theoretically extends the literature of M-commerce continuance usage, and practically, it will help the M-commerce services providers to understand factors determining customer continuingly using mobile shopping apps.

Keywords Ecommerce · Mobile shopping apps · TAM · ECM · Continuous usage · PLS modeling · Morocco

1 Introduction

The Covid19 pandemic has impacted the majority of countries; its negative effects vary from one country to another, depending on the health framework, the evolution of cases, the economic level as well as other factors. The impact is dire, as it is an unprecedented situation that has given rise to new measures in the hope of containing the spread of the virus. These measures have radically changed the way of life of consumers and destabilized the functioning of businesses.

The Covid-19 crisis has completely upset the consumption behavior of Moroccans. Very concerned about the health consequences of this pandemic, the habits of Moroccan consumers have greatly evolved to give rise to new purchasing habits.

In the current health context, and more especially during confinement, the number of open physical stores was very limited and precautionary instructions encouraged online shopping in order to curb the spread of the virus.

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Consequently, a lot of businesses have chosen e-commerce tools as new sales channels for their products by creating e-commerce showcases, hosted on their websites or in partnership with third-party intermediary platforms like Jumia mobile app. As a result, online shopping by consumers has increased in a huge way.

This research aims to identify and empirically examine the factors determining customer continuingly using Jumia mobile app in Agadir city.

The finding will be served as insights to assist Jumia business to understand customer needs and expectations and develop strategies aimed at increasing the use of it mobile shopping app.

2 Literature Review

2.1 *Online Shopping in Morocco*

Morocco was already a promising market for online sales before the Covid-19 crisis, favored in particular by the generalization of internet access; this trend was further confirmed during confinement. Indeed, the closure of non-essential businesses has allowed Moroccans to turn more to digital channels to buy their products. While Morocco was already in 7th place in Africa in terms of E-commerce (UNCTAD 2020).

This development is due in particular to the country's performance in terms of internet access. The country has nearly 28 million internet users, nearly 75% of the Moroccan population. It registers a growth of 9% between 2020 and 2021, but that's not all. The report notes 43.47 million mobile connections, a rate of 117% of the population, and a very high use of social networks with nearly 60% of the population in January 2021. This last criterion places Morocco ahead of Russia, the United States or China in terms of time spent on social networks (Datareprotal 2021). In 2020, 2% of the Moroccan population has made online purchases or paid bills online (Datareprotal 2021). This number didn't include online transaction with cash on delivery. Actually, the Moroccan customer is not yet familiar with online payment to make online transactions. He pays cash on delivery.

Jumia is considered as the number 1 in online sales in Morocco, it is in 18th place among the most visited websites in Morocco. Jumia, founded in 2012, is an online commerce company. The Jumia platform is an online marketplace that connects sellers and buyers, providing them with a logistics service, allowing shipping and parcel delivery in addition to a payment service. Thousands of sellers offer a wide range of products and services on demand. Jumia is notably described as "African Amazon". The company is present in more than ten African countries but also in countries outside Africa including Portugal, China and the United Arab Emirates. In Morocco, Jumia has two tools for online purchase: the website Jumia.ma and the Jumia mobile app.

2.2 ECM Model

ECM was suggested by Bhattacharjee (2001). This model, based on Expectation-Confirmation Theory (ECT) (Oliver 1980), is supported by three variables to predict and explain the individual’s continuous intention of IT usage: satisfaction, confirmation of expectations, and perceived usefulness (see Fig. 1). Users ‘continuance intention is determined by their satisfaction with IS use and perceived usefulness of continued IS use. User satisfaction, in turn, is influenced by their confirmation of expectation from prior IS use and perceived usefulness. Perceived usefulness is influenced by users ‘confirmation level (Bhattacharjee 2001).

Many researchers in different IT field have modified ECM or integrating it with other models and variables in order to better predict the continued use intentions of IT. For example, (Hung et al. 2012) have extended Expectation-Confirmation Model (ECM) to examine the determinants of m-shopping continuance by incorporating trust. They found that consumers’ satisfaction and trust had a significant impact on continuance usage intention of mobile shopping.

Chong (2013) have conducted a study on Chinese consumers’ m-commerce continuance usage intentions by extending the Expectation Confirmation Model (ECM). Additional variables such as perceived ease of use, perceived enjoyment, trust and perceived cost were added to the traditional ECM. They found that satisfaction, perceived usefulness, perceived ease of use, perceived enjoyment, perceived cost and trust have significant influence on consumers’ m-commerce continuance intentions.

Susanto et al. (2020) have used the Expectation-Confirmation Model (ECM) model with several additional variables including privacy risk, perceived fee and perceived value. Their study revealed that satisfaction is a prominent factor in driving users on continuance use, including in the online platform area. Usefulness and value play important roles in building users’ satisfaction which directs users to continuously utilize the online ticketing in Indonesia.

Drawing on the expectation–confirmation model (ECM), (Ashfaq et al. 2019) have examined the relationships among Chinese shoppers expectation, perceived



Fig. 1 Expectation-Confirmation Model (ECM) (Bhattacharjee 2001)

enjoyment, perceived ease of use, satisfaction, and repurchase intention of online shopping of used products.

Shang and Wu (2017) have investigated and examined the factors contributing to consumers' mobile shopping continuance intention of food and non-food items via smartphones and other mobile terminals in China. They have proposed an integrated model on the basis of the technology acceptance model (TAM) and expectation confirmation model (ECM), focusing on perceived value. They found that perceived usefulness does not motivate all user groups. Furthermore, satisfaction and perceived ease of use significantly impacted different user groups. For online food m-shoppers, value for money was the most important factor influencing satisfaction and continuance intention. However, perceived usefulness only affected continuance intention for non-food m-shoppers.

2.3 TAM

TAM was created by Davis (1989). This model was associated to both Theory of Reasoned Action (TRA) (Fishbein and Ajzen 1975) and Theory of Planned Behaviour (TPB) (Ajzen 1991) to predict whether an individual will use or refuse to use any IT. Four internal variables related to the actual technology usage were tested by TAM. These internal variables were the attitude toward use, ease of use, perceived usefulness and behavioral intention to use (see Fig. 2).

Davis (1989) found that actual technology use by users is determined by their behavior intention towards the technology. Behavior intention of users towards the technology, in turn, is influenced by their attitude towards using technology and perceived usefulness. Attitude of users towards using technology is impacted by perceived usefulness and perceived ease of use. Perceived usefulness, on the other hand, is influenced by perceived usefulness and both Perceived usefulness and perceived ease of use were influenced by external variables.

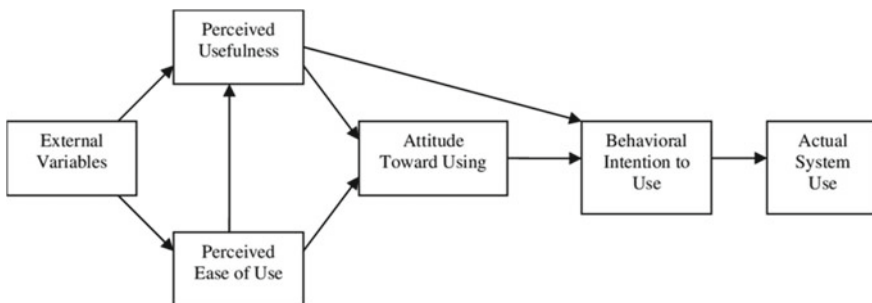


Fig. 2 Technology Acceptance Model (TAM) (Davis 1989)

Numerous studies have utilized TAM model to understand behavior intention of users towards online shopping (Pavlou 2003; Li and Huang 2009; Kim 2012; Ko et al. 2009; Amaro and Duarte 2015; Shukla and Sharma 2018).

3 Research Model and Hypotheses

The paper aim is to explore the determinants of the intention to continue use mobile shopping app.

Despite the ECM being applied in many IS/IT contexts, many researchers have found that by extending the ECM or integrating it with other relevant models, the ECM was able to better predict users’ continuance usage intentions (Chong 2013).

This paper, therefore, suggests a research model combining ECM with TAM (see Fig. 3). Indeed, both ECM and TAM are able to independently provide a partial understanding of users’ cognitive processes related to IT usage due to their distinct roots. Integrating both ECM and TAM is able to collectively provide improved and more comprehensive understanding of the cognitive processes and behaviors related to IT usage than when each theory is considered alone (Lee 2010). (Hong et al. 2006) state that there is sufficient motivation to combine the TAM and ECM models, and their empirical findings support the idea that a hybrid model from both theories in fact has better prediction rates on users’ intention to continue IT usage.

On other hand, we consider in this paper both intention to use and intention to continue IT usage are similar constructs. This idea is confirmed by some researchers like (Lee 2010; Hong et al. 2006; Hsu et al. 2006).

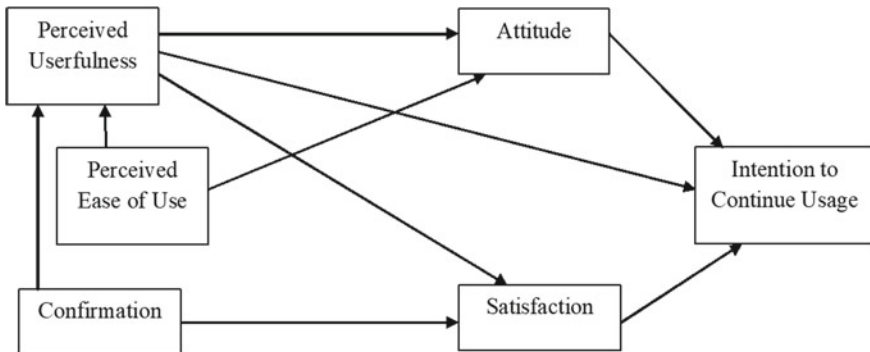


Fig. 3 The Research’s Conceptual Model

3.1 Confirmation

Confirmation is a cognitive belief derived from prior IS use (the extent to which users' expectation of IS use is realized during actual use). It is considered as a significant predictor of satisfaction and perceived usefulness, which in return influence the user's continuance intention of IS use (Bhattacharjee 2001). Perceived usefulness of IS could thus be adjusted by confirmation experience, particularly when the users' initial perceived usefulness is not concrete due to the uncertainty over what to expect from using the IT (Bhattacharjee 2001).

The confirmation of expectations suggests that users obtained expected benefits through their usage experiences with the IT, and thus leads to a positive effect on users' satisfaction (Lee 2010).

Several prior studies confirmed that confirmation towards the intention to continuance using mobile commerce positively affects satisfaction and perceived usefulness (Hung et al. 2012; Chong 2013; Ashfaq et al. 2019; Zhao and Bacao 2019; Chen and Demirci 2019; Jumaan et al. 2020; Al-Hattami 2021).

Accordingly, this paper proposes:

H1: Confirmation positively impacts perceived usefulness.

H2: Confirmation positively impacts satisfaction towards continuous using mobile shopping app.

3.2 Perceived Usefulness

Perceived usefulness is defined as "the degree to which a person believes that using a particular system would enhance his/her job performance" (Davis 1989). In the m-commerce, it is defined as the degree to which a user believes that using m-commerce is useful for their shopping tasks and will provide them with various benefits (Chong 2013). Perceived usefulness is an essential user perception and cognitive belief in defining users' attitude toward continuous using mobile shopping app. In fact, when users consider the advantages offered by mobile shopping app to be useful for their shopping tasks and will provide them with various benefits, they will probably have a positive attitude toward continuous using mobile shopping app.

On the other hand, Perceived usefulness is considered as strong determinants to predict and explain satisfaction towards continuous using IT. Previous researches found a positive relation between these two variables in m-shopping context (Agrebi and Jallais 2015), m-commerce (Chong 2013; Marinković et al. 2020) m-insurance (Lee et al. 2015), online shopping (Al-Hattami 2021), m-services (Rezaei and Valaei 2017) and food delivery apps (Zhao and Bacao 2019).

Moreover, users' perceived usefulness of IT has a positive effect on their intention to continue IT usage (Bhattacharjee 2001). In fact, mobile shopping app users will continue to use them if they believe shopping app users will have a positive outcome and be useful. For example, studies conducted by Al-Hattami (2021) in

online shopping context and (Zhao and Bacao 2019) in food delivery apps context verified that perceived usefulness is a significant predictor affecting the satisfaction of users' continuance usage of these technologies.

Hence, we frame the following hypotheses:

H3: Perceived usefulness positively impacts attitude towards continuous using of mobile shopping app.

H4: Perceived usefulness positively impacts satisfaction towards continuous using of mobile shopping app.

H5: Perceived usefulness positively impacts intention to continue usage of mobile shopping app.

3.3 Perceived Ease of Use

Perceived ease of use is defined as "the degree to which a person believes that using a particular system would be free of physical and mental effort". It affects a person's attitude toward using the system (Davis 1989). According to previous technology acceptance studies, perceived ease of use can affect user's attitude about adopting use technology directly and indirectly through its impacts on perceived usefulness. In fact, a user who perceives that purchasing through mobile app is effortless should in turn develop a tendency to perceive it as useful.

On the other hand, if the use of mobile app like shopping is perceived as easy, he may forms positive attitude toward continuous using of mobile shopping app.

Thus, we posit that:

H6: Perceived ease of use positively impacts perceived usefulness.

H7: Perceived ease of use positively impacts attitude towards continuous using of mobile shopping app.

3.4 Attitude

Attitude refers to "the degree of a person's favorable or unfavorable evaluation or appraisal of the behavior in question" (Fishbein and Ajzen 1975). Consumer attitudes towards shopping online are the evaluative feelings that consumers express towards a desired goal or behavior (Reyes-Mercado et al. 2017). Previous studies found the positive relationship between attitude and intention to use IT. For example, (Fong and Wong 2015) found attitude as a predictor of intention to use mobile commerce services. (Shukla and Sharma 2018) found that attitude towards mobile app for grocery shopping is positively related to intention to use mobile app for grocery shopping.

In this study, we consider both intention to use of mobile shopping app and intention to continue mobile shopping app usage are similar constructs. We suppose that attitude impact positively the intention to continue usage of mobile shopping

app. Indeed, when a user forms positive attitude towards using mobile shopping app, he will be more inclined to reuse such app. In contrast, if user forms negative attitude towards using mobile shopping app, then he will avoid using such app. Therefore, we propose the following hypothesis:

H8: Attitude towards mobile shopping app positively impacts intention to continue usage of mobile shopping app.

3.5 Satisfaction

Satisfaction is defined as “an ex-post evaluation of consumers’ initial (trial) experience with the service, and is captured as a positive feeling (satisfaction), indifference, or negative feeling (dissatisfaction)” (Bhattacharjee 2001). According to the relevant literature, user’s satisfaction with the IT will have a positive effect on their continued usage of the IT. In fact, when user is satisfied with the IT, he is likely to have intention to continue using IT. In contrast, when he is dissatisfied, he is likely to stop using IT.

Many researchers have demonstrated the positive relationship between satisfaction and intention to continue using the IT in different contexts such as mobile purchases (Gao et al. 2015), mobile commerce (Marinković et al. 2020), online shopping (Al-Hattami 2021), food delivery apps (Zhao and Bacao 2019), used products online (Ashfaq et al. 2019) and mobile-based electronic ticketing (Susanto et al. 2020).

In this regard, the following hypothesis is developed:

H9: Satisfaction positively impacts intention to continue usage of mobile shopping app.

4 Research Methodology

4.1 Sampling and Data Collection

This study was performed using a quantitative method to test the hypotheses. A convenience sampling was utilized to gather data. The study subjects are respondents who lived in Agadir city. We interviewed the respondents first whether they have experience with Jumia app or not. Then, if the respondents have experienced before, the researcher gave the respondents the questionnaire. Data were collected from 14 June to 09 July 2021, using structured questionnaires in French and Arabic conducted face-to-face for the interview with the respondents. This study obtained 155 valid responses for the final analysis.

4.2 Measurement Instrument

The questionnaire was divided into two sections. The first section of the questionnaire contained personal questions regarding respondent, namely, gender, age and occupation. The second section contained items adapted from standard scales to measure the constructs of the study (see Table 1). The respondents of the questionnaire were required to mark their responses on five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

Table 1 Constructs and its measures

Constructs	Items	Question items	Adapted from
Confirmation (CON)	CON1	My experience with using Jumia mobile app is better than what I expected	Bhattacharjee 2001; Hung et al. 2012)
	CON2	The functions of Jumia mobile app are more than what I expected	
	CON3	The service provided by Jumia mobile app is better than what I expected	
Perceived usefulness (PU)	PU1	I believe that the use of Jumia mobile app would make my shopping process more effective	Fröhlke and Pettersson (2015)
	PU2	I believe that the use of Jumia mobile app would make my shopping process more convenient	
	PU3	I believe that, in general, using Jumia mobile app in my shopping process would have been useful	
Perceived ease of use (PEU)	PEU1	It is easy to purchase products through Jumia mobile app	Fröhlke and Pettersson (2015)
	PEU2	It is easy to learn how to purchase through Jumia mobile app	
	PEU3	It is easy to use Jumia mobile app	

(continued)

Table 1 (continued)

Constructs	Items	Question items	Adapted from
Attitude (AT)	AT1	I believe it would be advantageous to use Jumia mobile app in my shopping process	Fishbein and Ajzen (1975)
	AT2	I think it would be a good idea to use Jumia mobile app when shopping for products	
	AT3	I think it would be positive to be able to use Jumia mobile app when shopping for products	
Satisfaction (SAT)	SAT1	I am pleased with Jumia mobile app for shopping as it suits my needs	Bhattacharjee 2001; Zhao and Bacao 2019; Pappas et al. 2014
	SAT2	My interaction with Jumia mobile app for shopping is really satisfying	
	SAT3	I think I did the right thing when I used Jumia mobile app for shopping	
Intention to continue usage (ICU)	ICU1	I intend to use Jumia mobile app for shopping continually	Bhattacharjee 2001; Shao et al. 2018; Cho et al. 2019
	ICU2	I have an opportunity, I will continually order products through Jumia mobile app	
	ICU3	I am willing to use Jumia mobile app for shopping in the future continually	

4.3 Data Analysis

The present study utilizes structural equation modeling approach. PLS-SEM is “a causal predictive approach to SEM that emphasizes prediction in estimating statistical models, whose structures are designed to provide causal explanations” (Hair et al. 2019). It is commonly employed in research of marketing (Hair et al. 2019) and information systems (Urbach and Ahlemann 2010).

The PLS does not hold assumptions of normality for data as it uses method of bootstrapping for estimating parameters (Gefen et al. 2011; Henseler et al. 2012).

The software of SmartPLS version 3.2.8 was used for data analysis (Ringle et al. 2015).

5 Results

5.1 Socio-demographic Characteristics

The demographic profile of respondents is subcategorized as respondent’s gender, age and occupation. A brief description of respondent’s demographic characteristics is presented in Table 2.

There are 56.8% male as compared to 43.2% female respondents. In terms of age, most significant respondents lie in the age group of 26–35 constituting about 52.3% of the respondents. The respondents belong to various occupations showing diversity, but the respondents majorly were salaried.

5.2 Model Assessment

The assessment of the model was carried out in two steps. The first step consists of assessment of measurement which includes evaluating reliability and validity. The second step includes assessment of structure which conducts the evaluation of hypotheses.

Assessment of Measurement (Outer model)

In order to obtain a properly validated model, the following measures were used: indicator reliability, construct reliability, convergence validity, and discriminant validity (Hair et al. 2011; Henseler et al. 2009).

The indicator reliability was evaluated based on the criteria that the loadings are above 0.7 (Henseler et al. 2009).

Construct reliability represents the internal consistency of survey items and was evaluated through Cronbach’s alpha (α) and composite reliability (CR). The use of α with a value of ≥ 0.70 is usually recommended (Hair et al. 2014). Besides, CR is also required with values of ≥ 0.70 (Urbach and Ahlemann 2010).

Table 2 Descriptive statistics of respondents’ characteristics

Variable	Category	Freq.	Percentage %
Gender	Male	88	56,8
	Female	67	43,2
Age group	25 and below	36	23,2
	26–35	81	52,3
	36 and above	45	29,0
Occupation	Student	23	14,8
	Government employee	47	30,3
	Private employee	85	54,8

Convergent validity involves the degree to which individual items reflecting a construct converge in comparison to items measuring different constructs. A commonly applied criterion of convergent validity is the average variance extracted (AVE) proposed by Fornell and Larcker (1981). It is assured when each construct has an average variance extracted (AVE) of at least 0.5 (Hair et al. 2014).

As refer to Table 3, the results showed that the factor loading for all items meet the threshold value of more than 0.70. Furthermore, in terms of reliability, the value for all constructs are higher than 0.7 for Cronbach’s alpha (α) and composite reliability (CR). Therefore, it showed that the constructs have met the reliability of the measurement model. In term of convergent validity, AVE values for all constructs were higher than 0.50. Therefore, the results validate the convergent validity between the constructs.

Discriminant validity concerns the degree to which the measures of different constructs differ from one another. Fornell-Larcker criterion (Fornell and Larcker 1981) and Hetro-trait & mono-trait (HTMT) ratio implemented to test the constructs’ discriminant validities (Henseler et al. 2015). The square root of each construct AVE yield more for its specific construct than another construct, showing the discriminant validity achieved. However, the HTMT ratio for the study construct needs to be less than 0.90 to describe the study construct discriminant validities.

Table 3 Measurement statistics of constructs

Constructs	Items	Factor loading	Cronbach alpha	Composite reliability	AVE
Confirmation (CON)	CON1	0,800	0,833	0,900	0,750
	CON2	0,899			
	CON3	0,895			
Perceived usefulness (PU)	PU1	0,905	0,899	0,937	0,833
	PU2	0,913			
	PU3	0,919			
Perceived ease of use (PEU)	PEU1	0,798	0,782	0,872	0,695
	PEU2	0,864			
	PEU3	0,838			
Attitude (AT)	AT1	0,905	0,899	0,937	0,832
	AT2	0,917			
	AT3	0,915			
Satisfaction (SAT)	SAT1	0,904	0,892	0,933	0,822
	SAT2	0,911			
	SAT3	0,905			
Intention to continue usage (ICU)	ICU1	0,948	0,832	0,900	0,751
	ICU2	0,814			
	ICU3	0,833			

Table 4 Fornell-Larcker criterion

	CON	PU	PEU	AT	SAT	ICU
Confirmation (CON)	0,866					
Perceived usefulness (PU)	0,533	0,912				
Perceived ease of use (PEU)	0,414	0,431	0,834			
Attitude (AT)	0,377	0,526	0,566	0,912		
Satisfaction (SAT)	0,641	0,483	0,425	0,503	0,907	
Intention to continue usage (ICU)	0,630	0,626	0,673	0,681	0,649	0,867

From the analysis, Table 4 demonstrated that the diagonal values for all constructs are greater than other values in row and column (Fornell and Larcker 1981), therefore, it determine the measurement model has no discriminant validity issue. Likewise, hetero-trait & mono-trait ratio (HTMT) values were well below the threshold of 0.90 (Table 5).

Test of Collinearity

The collinearity is measured by Variance Inflation Factor (VIF) values. The VIF indicates whether a predictor has a strong linear relationship with the other predictors. The generally used cut-off value for the VIF is 3 (Hair et al. 2019). As illustrated in Table 6, all VIF values are below 3, thus predictor construct doesn't have a collinearity problem.

Table 5 Heterotrait-Monotrait ratio (HTMT)

	CON	PU	PEU	AT	SAT	ICU
Confirmation (CON)						
Perceived usefulness (PU)	0,614					
Perceived ease of use (PEU)	0,507	0,509				
Attitude (AT)	0,439	0,584	0,669			
Satisfaction (SAT)	0,735	0,533	0,500	0,565		
Intention to continue usage (ICU)	0,754	0,721	0,829	0,787	0,746	

Table 6 Test of collinearity

	CON	PU	PEU	AT	SAT	ICU
Confirmation (CON)		1,207			1,396	
Perceived usefulness (PU)				1,228	1,396	1,516
Perceived ease of use (PEU)		1,207		1,228		
Attitude (AT)						1,557
Satisfaction (SAT)						1,468
Intention to continue usage (ICU)						

Assessment of Structure

The structural model of the study was evaluated for its model’s predictive capabilities and construct’s relationship, using a set of criterion: path coefficient (β), coefficient of determination (R^2 value) and blindfolding predictive relevant (Q^2) was employed for theory development and explanation of prediction of the construct (Hair et al. 2014).

The analysis of internal structure supported all nine hypotheses as shown in Table 7 as the t-values are found to be significant ($t > 1.96$).

The R^2 and Q^2 values are presented in Table 8.

The model explains 33.7% of the variation in perceived usefulness. The confirmation ($\beta = 0,427, p < 0.01$) and perceived ease of use ($\beta = 0,254; p < 0.01$) are statistically significant in explaining perceived usefulness, thus confirming H1 and H6.

The model explains 41.8% of the variation in attitude. Perceived usefulness ($\beta = 0,347, p < 0.01$) and perceived ease of use ($\beta = 0,416; p < 0.01$) are statistically significant in explaining attitude, thus confirming H3 and H7.

Table 7 Summary of hypotheses testing

Hyp.	Relations	t-Value	β	p-Value	Decisions
H1	CON -> PU	5,656	0,427	0,000	Supported
H2	CON -> SAT	7,403	0,537	0,000	Supported
H3	PU -> AT	4,855	0,347	0,000	Supported
H4	PU -> SAT	2,414	0,197	0,016	Supported
H5	PU -> ICU	5,580	0,270	0,000	Supported
H6	PEU -> PU	3,661	0,254	0,000	Supported
H7	PEU -> AT	6,699	0,416	0,000	Supported
H8	AT -> ICU	7,336	0,372	0,000	Supported
H9	SAT -> ICU	6,855	0,331	0,000	Supported

Table 8 R^2 and Q^2 values

	R Square	Predictive relevance Q^2
Perceived usefulness	0,337	0,277
Attitude	0,418	0,343
Satisfaction	0,439	0,354
Intention to continuance usage	0,637	0,473

The model explains 43.9% of the variation in satisfaction. The confirmation ($\beta = 0,537$, $p < 0.01$) and perceived usefulness ($\beta = 0,197$; $p < 0.05$) are statistically significant in explaining satisfaction, thus confirming H2 and H4.

The model explains 63.7% of the variation in continuance intention. Perceived usefulness ($\beta = 0,270$, $p < 0.01$), attitude ($\beta = 0,372$, $p < 0.01$) and satisfaction ($\beta = 0,331$; $p < 0.10$), are statistically significant in explaining the continuance intention, thus confirming H5, H8 and H9.

Moreover the Q^2 values are greater than zero as shown in Table 8 which indicate our path model's predictive relevance is high.

6 Discussion and Conclusion

The objective of the study was to explore determinants predicting the intention to continue the use of mobile shopping apps, a model combining the ECM and TAM models has been suggested in this research. The empirical results provide support to all nine hypothesized relationships as depicted in Table 7.

The strongest relationship was found between confirmation and perceived usefulness (H1) and between confirmation and satisfaction towards continuous using mobile shopping app (H2). This means that the more confirmation the users have toward utilizing mobile shopping app, the higher opportunity for them to satisfy utilizing the tool as well as to attain their perceived usefulness.

The confirmation of expectations suggests that users obtained expected benefits through their usage experiences with the mobile shopping app, and thus leads to a positive effect on users' satisfaction.

Similar results have been supported in previous studies (Hung et al. 2012; Chong 2013; Ashfaq et al. 2019; Zhao and Bacao 2019; Chen and Demirci 2019; Jumaan et al. 2020; Al-Hattami 2021).

The second strongest relationship was found between perceived usefulness and attitude (H3). It indicates that if the consumer finds the mobile app to be useful for his shopping, he will develop a favorable attitude towards it. This result is in with prior findings (Chong 2013; Shukla and Sharma 2018).

On the other hand, the strongest relationship was found between perceived usefulness and satisfaction towards continuous using of mobile shopping app (H4) and between perceived usefulness and intention to continue usage of mobile shopping app (H5). This means that if a user of mobile app perceives mobile app as useful, he will be satisfied and will have positive intention to continue usage of mobile shopping app. These findings have been validated in various IT contexts by other researches (Chong 2013; Zhao and Bacao 2019; Al-Hattami 2021; Marinković et al. 2020; Zhou 2011; Lai and Shi 2015; Chopdar and Sivakumar 2019).

The hypothesis regarding perceived ease of use and perceived usefulness was also supported (H6). This means that a user who perceives that purchasing through mobile app is effortless should in turn develop a tendency to perceive it as useful.

The hypothesis regarding perceived ease of use and attitude towards continuous using of mobile shopping app was also supported (H7). This means that if the use of mobile app for shopping is perceived as easy, he may forms positive attitudes toward continuous using of mobile shopping app.

Many empirical studies have supported these results (Susanto et al. 2020; Shang and Wu 2017; Shukla and Sharma 2018).

The next hypothesis examined the relationship between attitude towards mobile shopping app and intention to continue usage of mobile shopping app which was also supported (H8). This indicates that if a consumer develops a positive attitude toward mobile shopping app, he may intend to reuse it. Similar results have been supported in previous studies (Susanto et al. 2020; Shang and Wu 2017; Shukla and Sharma 2018).

The last hypothesis in this study was also confirmed which means that satisfaction positively impacts intention to continue usage of mobile shopping app. This indicates that if a user is satisfied with the mobile shopping app, he is likely to have intention to continue using it. Many empirical studies have supported these results (Susanto et al. 2020; Ashfaq et al. 2019; Zhao and Bacao 2019; Al-Hattami 2021; Marinković et al. 2020; Gao et al. 2015).

7 Implications

This research presents important theoretical and practical contributions.

On the theoretical level, this study has contributed to academic research by producing the empirical evidence to support the literature related to determinants of intention to continue usage of mobile shopping app. Indeed, in this study we have integrated ECM with TAM to better explain determinants predicting the intention to continuance usage of mobile shopping app. Also, as far as our knowledge, there is no prior study on mobile shopping app focusing on continuance intention determinants for using mobile shopping app in Morocco. Consequently, the main study aim is to bridge this research gap by exploring continuance intention determinants towards using mobile shopping app.

On the managerial level, This study may supports mobile shopping app services providers with a fundamental understanding of customer's continuance intention as driven by perceived usefulness, perceived ease of use, confirmation and satisfaction. Thus, mobile shopping app services providers should concentrate on mechanisms to boost such determinants to induce consumers' continuance usage.

8 Limitations and Further Research

First, this study mainly focuses on users of Jumia mobile app for shopping in Agadir city. So, the results of this study may not be generalisable to different cities and other

mobile shopping apps. Therefore, future research is recommended to pay attention to different cities and other mobile shopping apps.

Second, in this study, we have not taken into consideration the moderate influence of socio-demographic variables. These variables may influence continued usage. Third, the study used ECM and TAM and thus it will be interesting to extend the proposed model with other models such as, TTF, UTAUT2 models and other variables like trust factor.

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The Importance of Brand Love on SMEs Context in Indonesia



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Abstract SMEs play a key role in national economies around the world. In Indonesia, SMEs are the backbone that supports the country's economy. For this reason, a strategy is needed to strengthen the SMEs brand to be stronger and develop. The creation of brand love in Indonesia in the context of SMEs is still unclear. This paper aims to explore how brand love strategies can strengthen the SMEs and does brand love produce valuable marketing results to SMEs? The method used for this paper is based on literature reviews from journal articles, books and online news which are related to the research area. A review of the relevant literature can show how the role of creating brand love can help strengthen the relationship between consumers and brands in the context of SMEs and makes consumers will love local products. In addition, the creation of brand love in consumers can create an engagement and create long-term relationships and will make consumers loyal to the brand. For SMEs, brand love is important to strengthen brand loyalty. Such a conceptual understanding of the importance of brand love, paired with a number of propositions for empirical work can serve to guide future research into this important field.

Keywords Brand love · SMEs · Conceptual paper · Strategic brand

1 Introduction

The study of MSMEs has received more attention since the crisis in Indonesia in 1997. Data from the Badan Pusat Statistik (BPS) in Indonesia states that during this crisis, MSMEs in Indonesia were able to survive and continue to open new jobs. In 2012, the number of entrepreneurs in Indonesia was 56,539,560 units. Of this number, MSMEs were 56,534,592 units or 99.99%. The remaining 0.01% or 4,968 units are large-scale enterprises. (BPS.go.id) This phenomenon explains that MSMEs are productive businesses and potential to develop to support macro and micro economic development

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in Indonesia. (Suci 2017) Indonesia is currently very serious about paying attention to MSMEs, especially in the creative industry sector, through the Indonesian ministry of tourism and creative economy they continue to support the development of the tourism industry and the creative economy through the implementation of rules and policies that have an impact on the industry (kemenparekraf.go.id).

Indonesian government is promoting the motto “love local products to support the existence of MSMEs to be able to develop their potential”. The strengthening of MSMEs that underlined at this time is how local MSME brands can recognized and has a special place in the hearts of customer in Indonesian. It is very important to build a personal relationship between consumers and a brand. One way for people to continue to support and use MSME products is to build a sense of love for products from the MSME brand. Important similarities established between the emotional feeling that people hold towards loved ones and those that consumers hold towards objects and material goods (Albert and Valette-Florence 2010). This condition in the context of branding commonly referred as brand love.

Brand love is a topic that is currently developing and can be expand. Brand love defined as the degree of passionate emotional attachment a satisfied consumer has for a particular trade name. (Carroll and Ahuvia 2006) Brand love attracts substantial interest from growing stream of research (Batra et al. 2012; Merunka 2013; Carroll and Ahuvia 2006; Fetscherin 2014; Sarkar 2014; Aro et al. 2018). The phenomenon that often occurs is that consumers often feel an intense emotional connection with a brand comparable to feeling of interpersonal love (Batra et al. 2012; Fournier 1998) Such deep consumer-brand relationships influence consumer behavior in various ways and even can reach extremes (Rahman et al. 2021).

Previous studies have shown that brand love produces positive outcomes, such as generating higher levels of brand loyalty and willingness to pay premium prices (Merunka 2013; Alnawas and Altarifi 2016). In addition, Understanding brand love is relevant given the desirable organizational outcomes like positive word of mouth (WOM) (Batra et al. 2012; Carroll and Ahuvia 2006) forgiveness of brand failures (Grewal et al. 1993) and favorable public display of affection towards the brand (Batra et al. 2012).

Although research on the importance of building brand love has developed rapidly, several important questions remain unaddressed, especially the importance of building brand love in SMEs. Currently, questions arise that have not been widely discussed from previous research, first, how importance brand love strategies can strengthen the SMEs and secondly does brand love produce valuable marketing results to SMEs? in the first section, we reviewed and discussed about brand love strategies that can be used by MSMEs. Second section we will explain what are the outcomes resulting from the application of brand love so that it can ascertained that the brand love strategy is very valuable and highly recommended to MSMEs in Indonesia.

2 Literature Review

2.1 *An Overview of SMEs in Indonesia*

Business grows very drastically. Today's business environment has many challenges and it is more complicated. A business that is currently in the center of attention all over the world is Micro Small Medium Enterprises (MSMEs). The MSME sector in Indonesia has capabilities and important role and is the backbone of the Indonesian economy. MSMEs in Indonesia have proven to be able to survive the Indonesian economic crisis in 1997. (Suci 2017) Based on data from the Ministry of Cooperatives and MSMEs in Indonesia, the number of MSMEs in Indonesia is growing significantly. Until 2019, total 65,465,497 MSMEs businesses with a proportion of 99.99% of the total business in Indonesia (kemenkopumkm.go.id). The data shows that businesses in Indonesia are dominated by MSMEs.

With the COVID-19 pandemic, under the command of the Indonesian minister of tourism and creative economy, the government focusing on developing a creative industry that focuses on MSMEs because creative industry in Indonesia is one of the backbones of the national economy (kompas.com). Presidential Regulation Number 72 of 2015 concerning Amendments to Presidential Regulation Number 6 of 2015 concerning the Creative Economy Agency has reclassified 17 creative industry sub-sectors. The 17 sub-sectors of the creative industry in Indonesia consist of applications, architecture, interior design, visual communication design, product design, fashion, film, animation and video, photography, craft, culinary, music, publishing, advertising, performing arts, fine arts, television, radio and game development (kemenparekraf.go.id). With the increasing government attention to the creative industry sector, MSMEs in Indonesia increasingly have a good opportunity to develop their brand.

2.2 *The Concept of Brand Love*

Love in the context of psychology is an affectionate connection between two parties that provide a deep interpersonal bond. (Shaver et al. 1987) Love is a concept that we usually hear in our daily life. Recently, an intense bond established with the product and the brand and the feeling felt expressed with the concept of love. Currently there are not many researchers on the brand love, but people who study the subject define love as an intense relationship between a customer and product consumed like interpersonal love (Unal and Aydın 2013).

Brand love relies on Sternberg's (1987) love theory as a foundation to define and conceptualize the concept of brand love. Although there are different brand love's conceptualizations (e.g. Albert et al. 2008; Batra et al. 2012; Carroll and Ahuvia 2006), the robustness and the high generalizability of Sternberg's (1987) triangular theory (Sarkar 2014) made it the most adopted framework to investigate

brand love (Batra et al. 2012). Study on brand love, one of which begins with a study of the relationship between customers and brands conducted by (Fournier 1998). The study stated that one way to legitimize the brand-as-partner is to highlight ways in which brands are animated, humanized, or somehow personalized. Furthermore, in his 1998 study, Fournier drew attention to the importance of creating brand love and express brand love as a customer's long-term relationship with the brand. Furthermore, research conducted by Fournier and Mick in 1999 stated that the most intense satisfaction is experienced when a consumer's satisfaction with a product or brand turns into love (Fournier and Mick 1999).

Several previous studies that have discussed about brand love shows that one's feelings of love for brand can equated with interpersonal (Carroll and Ahuvia 2006; Zarantonello et al. 2007; Palusuk et al. 2019; Rahman et al. 2021). Consumers usually associate a brand with human personality traits (Aaker 1997). There are several definitions of brand love from several previous researchers. According to Carroll and Ahuvia (2006) Brand love as the degree of passionate emotional attachment a satisfied consumer has for a particular trade name. Furthermore, brand love is also defined as consumers as consumers experience it, is best represented as a 4higher-order construct including multiple cognitions, emotions, and behaviors, which consumers organize into a mental prototype. (Batra et al. 2012) Moreover, (Fetscherin 2014) stated that Brand love as parasocial relationship or single relationship rather than interpersonal relationship. The parasocial love data provides stronger effect and more applicable than interpersonal love scale when applying to brand love study. In summary, brand love can interpreted as a bonded feeling by consumers towards a brand that causes the creation of a strong bond not to choose another brand. The levels of brand love that created start from ordinary personal love to extreme brand love.

3 Methods

The method used for this paper is based on literature reviews from journal articles, books and online news which are related to research area. Literature searches include online and offline such as searching for journal articles through Springer, Scopus, Elsevier, direct observation of books and magazines and Google Scholar. The search conducted by searching for literature on brand love in general, MSMEs and research that explained the positive impact of brand love on companies and what outcomes are produced in the application of brand love. This study only takes references from articles from journals, chapters from books and full text documents. Thus, the limitations of this study may be due to the limited resources of the database. Observations start from early 2021 to the present.

4 Conclusion

Every company not only wants consumers to like their products, but also love their products and become loyal consumers. Therefore, creating customer satisfaction is not enough for consumers to continue to establish a relationship with the brand, they can still move to another heart. For this reason, MSMEs, needs to create a “brand love” that expresses an emotional bond. The creation of this love brand is in line with the Indonesian government’s goal so that consumers in Indonesia will love domestic products more, namely MSME brands in the creative industry.

The implementation of brand love strategy by MSMEs in Indonesia can produce a positive impact. One of the reasons behind the love of brands is customer become isolated. Feelings of isolation generally create emotional attachment to the brand. Consumers are looking for something to relieve their loneliness in the brand. These results supported in the literature. Customers buy certain commodities and brands because they think it suits them. It can be proves that the brand love strategy is very important to MSME businesses in Indonesia. This strategy will have an impact on generating a higher level of brand loyalty, people who already love this brand will be happy to provide recommendations or positive word of mouth (WOM). In addition, with this brand love, consumers tend to be willing to pay a premium price and if there is an error in the brand, they will forgive of brand failures. The implementation of brand love strategy is certainly become an effective new marketing strategy that can be applied by MSMEs in Indonesia.

5 Limitations and Future Research Directions

In this study, there are still limitations in the explanation of the indicators used in the implementation of brand love. This study discusses the concept of brand love that can applied on MSMEs in Indonesia. For further studies, we recommend adding a more in-depth analysis such as through qualitative and quantitative studies that measure the effectiveness of brand love in MSMEs. Research on brand love in SMEs still has the potential to be develop because there are still few studies on brand love in the context of SMEs.

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The Impact Brand Experience on Guest Budgeting Hotel in Indonesia



Siti Hanifa Sandri and Noor Hasmini Abd Ghani

Abstract This study aims to determine the impact of brand experience on budget hotel customers in Indonesia. The small and medium-sized hotel business in recent years has experienced growth, supported by low-cost flights that have transformed this hotel. In addition, backpacker tourists and the staycation phenomenon have become a consumer phenomenon today. In addition to competitive prices and service quality, budget hotels are sufficient to meet consumer needs. The rapid development makes the budget hotel management pay more attention to the facilities provided considering that the consumer experience is individual and direct involvement. On the other hand, the consumer's background on the experience of a service is very different even though they are faced with the same type of hotel. This study selects budget hotels in Indonesia, especially the island of Bali, which is a favorite destination for foreign and local tourists. On the other hand, the island of Bali has many budget hotels that reach tourist attractions and the center of the crowd. It was found that Brand Experience greatly affects the existence of budget hotels and the promotion system at budget hotels does not have a budget like star hotels, so from this condition the experience of the brand has an impact on increasing customer loyalty to a brand.

Keywords Brand experience · Budgeting hotel · Indonesia

1 Introduction

1.1 Concept Hotel Budget in Indonesia

In Indonesia, the rapid development of budget hotels has initiated hotel managers to open low-star hotels, so competition between hotel managers is very competitive budget hotel searches of 1.6 billion which are close to luxury hotel searches of 1.8

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billion (Source: Google 2019 in Search Indonesia Report, 2019). Budget hotels are managed so that travelers have a choice of accommodation to stay while traveling. The high market price of 4-star and 5-star hotels or so-called luxury hotels, changes the mindset of travelers to look for other alternatives to continue to enjoy the trip without spending a lot of money.

With this development, hotel property owners have found a new market share as a source of income that needs to be taken seriously. Does not require large capital, only provides clean rooms, location and affordable prices. With these facilities, customers will trust to choose a budget hotel so that the hotel can be recognized by new customers and customers who have experience with this hotel facility (Smith and Siguaw 2010), revealed several factors that support the growth of budget hotels, namely: the interest of people to travel in each country has shown high enthusiasm but they still take into account the budget needed for the trip.

Today's budget hotels in Indonesia have fulfilled the main needs of travelers. Based on hotel surveys, hotel customers prefer to stay in hotels that already have good reviews from previous users. With the sophistication of hi technology, it is easily accessible from the comments page. The main reason why travelers are embarrassed is to know the standard of service provided by the hotel, in other words the quality of service will be the same even though in different places.

1.2 Brand Experience in Indonesia

Indonesia is a favorite destination for foreign and local tourists. To support the contribution of the tourism sector, domestic and international flights provide low cost in order to reach tourist attractions and transform hotels located in these tourist areas (www.cnnindonesia.com 2020). One area that is a favorite of tourists is Bali. Bali is an area that has a lot of natural and beach tourism which is a tourist attraction, especially backpacker tourists who have limited funds. Based on the data quoted on (www.cnnindonesia.com 2020), since the corona virus outbreak attacked the hotel occupancy, it fell 60–80%, this has a very big impact on the Bali area, especially the Nusa Dua, Legian, and Kuta areas.

The impact of the corona virus outbreak was also felt directly by the budget hotel sector. For small-scale hotels, the intensity of customers will determine the hotel's profit. (Budi et al. 2021) the current condition if customers like a brand will automatically share their experiences online, and this will create a lot of discussion on social media and online forums. In addition, (Schmitt 2009) points out that experiential marketing has proven to be a good starting point for consumer-brand relationship studies. So the customer experience of this hotel brand must be maintained.

Budget hotels have the characteristics of having affordable prices, limited facilities but having a comfortable impression like a five-star hotel. With limited facilities with the same types of services offered, hotel management can pay more attention to facilities in order to meet customer desires. Hotel brands are distinguished from

other brands based on the context in which visitors experience hotel offerings (Walls 2013).

In the absence of a scale that measures visitor experience by the presence of hotel brands in Indonesia, hoteliers must rely on a brand experience scale which may not be a very accurate measure of brand experience in the context of the hotel industry. Brand experience in the hospitality industry is different from other common brand experiences such as the banking and restaurant sectors. Therefore, understanding the experience engendered through hotel brands is important (Walls 2013), as it will provide hoteliers with perspective and insight into the brand, and research in this area will enrich the existing literature about the hotel brand experience.

2 Literature Review

2.1 Brand Experience

In the early 2000s, research on brand experience has grown as a result of the focus on market experience (Andreini et al. 2018) and has also attracted academics in terms of research to look at brand interactions based on customer experience. Brand experience will affect customer behavioral responses (Baumgarth and Schmidt 2010; Brakus et al. 2009; Zarantonello and Schmitt 2010). Customer brand experience occurs because of the interaction between products, service personnel and customers, and the results of certain responses from customers (Hussein 2018). Brand experiences are created when customers use the brand, talk to others about the brand, seek brand information, promotions and events (Ambler et al. 2002; Budi et al. 2021; Cuong 2020).

Furthermore, another understanding of the brand experience is the customer's response to brand-related stimuli, such as the name, logo, mascot, packaging, marketing communications, store atmosphere and environment (Brakus et al. 2009) and the end result of this brand experience will affect the brand experience customer loyalty. Brand experience has emerged as one of the most widely discussed constructs in the branding literature (Keller and Lehmann 2006) because it has a business driving role. The dimensions of brand experience identified are four dimensions, namely sensory, affective, intellectual and behavioral brand experiences. Sensory brand experience is the visual, auditory, olfactory, gustatory and tactile stimulation provided by the brand (Andreini et al. 2018).

Brand experience can be created from the existence of repeated relationships between consumers and brands. Therefore, the importance of experience in creating relationships between brands and consumers (Andreini et al. 2018; Fournier 2013; Kim 2019). But the outcome of brand and brand experiences is unpredictable.

2.2 Contributions to Brand Experience on Guest Budget Hotel

This paper will describe the contribution of several studies to the brand experience in budget hotels and aims to bring the brand experience to an academic debate. Based on the theoretical study that has been explained, the researcher agrees with the opinion of several experts that brand experience is a subjective response as conceptualized by (Andreini et al. 2018; Brakus et al. 2009). Subjective customer response by telling others about what has been experienced when using the brand, and how the brand distributes as the quality of the customer experience towards the purchase of the product. Through brand experience, consumers will be willing to share information about the goodness of a brand consumers can solve various social problems, and activate meaningful relationships with brands, coworkers, and organizations (Schmitt 2009; Zarantonello and Schmitt 2010).

Through brand experience, budget hotels have an effective hotel development strategy that creates an emotional difference and an intangible experience so that it will be something that pleases consumers impressive hotels which in turn can drive guest loyalty is the core of brand building (Cai and Hobson 2004; Lo and Yeung 2019; Veloutsou et al. 2013).

This research has two main implications for both academic practice and brand management. First, the theoretical study shows that the brand experience in budget hotels is in an interconnected interaction and has an impact on brand loyalty and equity. Specific actions designed to create a profitable experience for customers must take into account how the customer's perceived experience contributes to the brand's distinctiveness so that it becomes a brand that is instantly recognizable by some and that brand experience in budget hotels can help change the market paradigm for hotels budget so that it can contribute to Gross Domestic Product (GDP) in the tourism and hospitality sector.

The next opinion, Brand experience is co-created at the level of individuals, communities, and markets, and managers. The budget hotel must understand what can create the desired experience in order to increase the effectiveness of the brand strategy so as to produce a positive brand experience.

3 Conclusion

Specific brand experience on budget hotels in Indonesia remains a key focus for customer-based research, even if the theory has not been widely used in the literature. This situation is often assumed to be the dynamics of consumption and therefore further definition studies are needed.

In terms of analyzing the literature that contributes to the knowledge of brand experience in the budget hotel sector. The purpose of this study is to add a reference

to understanding the concept of brand experience. In particular, helping to advance budget hotels theoretically and empirically about building brand experiences.

This research also shows how to develop a conceptualization of the brand experience, but does not explicitly mention it. Researchers hope to start building brand experiences in Indonesian budget hotels and thereby stimulate the revival of the brand experience concept, serve as a platform for future research projects and encourage discussion to the practitioner level.

The researcher acknowledges, however, that other researchers can provide insights in a different light. One of the limitations in this study is not using analytical tools to make a strong contribution to brand experience. A second limitation is that this study lacks empirical validation to inspire and direct future research.

4 Limitations and Future Research

This research has limitations. First, the method used is only based on a literature review without directly accessing hotel customers as a sample. Second, this research only focuses on one type of hotel, namely budget hotels in Indonesia. The results obtained may not be generalizable to all customers who stay at all types of hotels in other cities. Therefore, future research should research the role of brand experience to direct customers in various types of hotels.

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Moderating Effect of Hedonic Motivation on Predictors of Online Impulse Buying



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Abstract Based on the SOR model, this study explores the e-commerce context. The effect of website stimuli (content richness, trust, and sales promotion) is explored on pleasure and arousal, leading to impulse buying. The study also emphasized the moderating effect of hedonic motivation. Through random probability sampling, we collected 344 samples and applied Structural equation modeling (Amos 26.0) to test the hypotheses. Results obtained confirmed that website stimuli positively impact Pleasure and Arousal. We found Arousal impacts impulse buying behavior but not pleasure. Similarly, moderating effect of hedonic motivation was tested. It was found hedonic motivation moderates the impact of website stimuli (content richness, trust, and sales promotion) on arousal but not on pleasure.

Keywords Impulse buying · Hedonic motivation · SOR model

1 Introduction

There has been a worthy transformation in the e-commerce business in India. “The Indian E-commerce market is likely to grow to US\$ 111.40 billion by 2025 from US\$ 46.2 billion as of 2020”. According to Grant Thornton, its expected e-commerce in India to be US\$ 188 billion by 2025. With a turnover of \$50 billion in 2020, India became the eighth-largest market for e-commerce, trailing France and a position ahead of Canada. According to NASSCOM, despite COVID-19 challenges/disruptions, India’s e-commerce market continues to grow at 5%, with expected sales of US\$ 56.6 billion in 2021. Though impulse buying is not a new phenomenon, researchers in the past have only identified the predictors or antecedents of impulse buying. However, limited researches have used website stimuli as an important predictor for impulse buying behavior. Therefore, the study’s first objective is to investigate the holistic influence of the website stimuli, including content richness, trust, and sales promotion on impulse buying. Earlier researches have incorporated urge to buy and impulse buying tendency as significant mediators to show

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the relationship between website stimuli and impulse buying behavior (Parsad et al. 2017) and (Bellini et al. 2017). But less attention has been given to mediating role of situational-driven emotional states like pleasure and arousal. Thus, the second objective is to inspect how website stimuli lead emotional states of buyers which further drives them to indulge in impulse buying. Most research based on online impulse buying focuses on developed economies. Hence, it becomes crucial to scrutinize the impact of e-commerce websites in determining consumer behavior in emerging economies. Therefore, it becomes imperative to test the theoretical model in an emerging economy like India, where the retail sector is progressive. The present study makes a pioneering contribution to the SOR model by inspecting how hedonic motivation of buyers impact the association between website stimulus and its emotional state where the website stimulus act as “stimulus,” pleasure, and arousal as “organism,” and impulse buying behavior as “response.”

2 Conceptual Framework and Hypotheses Development

The present study depicts the relationship between the e-commerce website and impulse buying behavior through the SOR model (Mehrabian and Russell 1974), where the website stimulus act as “stimulus,” pleasure and arousal as “organism,” and impulse buying behavior as “response.” It shows the impact of e-commerce websites on consumers’ behavior.

2.1 Website Stimuli

What information to provide and how to provide are the most relevant discussions among the marketing personnel. Providing buyers with much-needed information will aid them in making improved product assessment and purchase decisions, but surplus content decreases the quality of buyers’ decision-making (Adelaar et al. 2003). “Website information quality is constantly refining given the unceasing expansion of the e-commerce industry in India, which has also led to improvement in website information quality” (Liu et al. 2020). Increased use of videos, pictures, sound, and text to transmit information help customers “to extract, process and memorize information.” Previous research has witnessed that vivid e-commerce website information has positively influenced customers’ product attitudes and buying intentions (Jiang et al. 2010). “Improving the information quality of shopping websites is helpful to realize the goal of consumers’ utility and hedonics and is beneficial to the realization of buying behavior” (Liu et al. 2020).

Content Richness. The content richness is the competence of product-related information provided on the e-commerce website. A study by Hus pointed out that content

richness, readability, and timeliness influence the buying intention of online shoppers (Liu et al. 2020). “In particular, customers are most concerned with ease of site use, finding accurate information, and being able to reliably transact and receive goods” and pay little attention to the technical aspect of the website (Dutta and Segev 2001). Interestingly, qualities like website experience and personalization are not significant for buyers. There is a positive correlation between information perceived by consumers and pleasure derived (Kim and Lennon 2008). Information richness helps in reducing perceived risk and increasing the buying intention of buyers (Jeong et al. 2009). Dynamic websites have better chances of awakening various senses of users; therefore, users are more attracted to them (Coyle and Thorson 2001). Henceforth, content richness positively impacts consumers’ website perception, leading to consumers’ emotional response.

Trust. Trust refers to the capability of an organization to accomplish its service-related commitments adequately. The term also relates to whether the information provided by the e-commerce website is reliable or not. Recent studies have shown that buyers make on-the-spot shopping decisions based on behavior and attitude in making trust on the e-commerce website and further involves buyers in repetitive buying, loyalty, and overall satisfaction (Liu 2020, Koufaris 2002, Kim (2002). Financial security is the vital antecedent of trust. Response time, transaction capability, and fit-to-task leads to trust in e-commerce websites (Szymanski and Hise 2000). Likewise, studies conducted in the past have specified that online shopping consumers are less interested in sharing their personal information to e-commerce websites (Bollen 1989, Brown 1993) which shows trust-related concerns by e-buyers. Personal and financial security were the significant factors leading to trust in e-commerce websites (Szymanski 2002, Park 2003). Thus, the trust possessed by the buyer on the e-commerce website leads to the pleasure of browsing. The trustworthiness of an e-commerce website can arouse positive impulse buying behavior among the buyers.

Sales Promotion. One of the essential factors is sales promotion which triggers impulse buying behavior (Amanah and Pelawi 2015) via situational factors like pleasure and arousal. That is why people often buy things, not on their shopping list (Andryansyah 2018, Kosyu 2014) “A stimulating offer from a retailer usually influences this excessive purchase.” They create an acuity of “scarcity” of limited-stock products in the minds of buyers through their e-commerce websites to provoke them to buy impulsively. Promotional signage significantly influences customers’ impulse buying behavior (Mehta and Chugan 2013). Catchy jingles on websites like “Do not Let This Opportunity Pass by You!”, “Limited Time Offer,” “One Time Offer,” “Weekly Deal” influence the audience to shop, creating the illusion of losing the offer. Thus, E-commerce websites using promotional activities find it easier to achieve their sales targets. Individuals tend to please themselves through imaginative and extemporaneous sort of external stimuli. Gifts given above the purchase of a certain amount and price drop alert and other such promotional activities are external stimuli employed by marketers to seize shoppers’ attention on e-commerce websites (Tellegen and Waller 2008). These promotion strategies lure potential buyers to shop impulsively.

Sales promotional activities bear a substantial positive effect on online impulsive buying (Abratt 1990; Amara and Kchaou 2014). Sales promotion and impulse buying are positively co-related, implying that the higher the sales promotion, the higher will be the impulsive buying (Jamal 2015, Nindyakirana 2016). “The quality and attractiveness of the sales promotion program increase the consumer’s impulse buying” (Amara and Kchaou 2014). Therefore, e-commerce websites are actively engaged in sales promotion to influence the purchasing decision of the shoppers.

2.2 *Emotional States*

“Emotional states act as mediating variables when the effect of e-commerce website on the impulse buying behavior is analyzed” (Liu et al. 2020). Pleasure and arousal act as significant emotional factors concerning website stimuli (Liu et al. 2020). Pleasure refers to “an emotional state which is different from liking, preference, positive reinforcement and approach-avoidance behavior” (Mehrabian and Russell 1974). It is a sort of blend of temporary state of mind such as satisfaction, happiness, and contentment. Arousal refers to “the degree to which a person feels active, stimulated, excited and alert in a situation” (Mehrabian and Russell 1974). Therefore, emotional responses such as pleasure and arousal are essential factors to evaluate website stimuli.

An impressive impact of arousal and pleasure is visible on consumer behavior (Ladhari 2007). Past researches have emphasized that liking the online store (Fiore et al. 2005), utilitarian value and hedonic value (Chen 2017, Etemad-Sajadi 2015), shopping satisfaction (Das 2013), willingness to visit e-commerce websites, and buying (Fiore et al. 2005) are affected by pleasure and arousal.

Website Stimuli, Pleasure, and Arousal: Providing website visitors with accurate and timely information provides them a pleasant feeling by evaluating the products. It also leads to arousal to indulge in impulse buying. More usage of videos and pictures increases its ease of use, leading to emotional responses such as pleasure and arousal (Liu et al. 2020). Website information is the influential factor that often leads to product attitudes and buying intentions (Jiang et al. 2010). Improving the website stimuli helps realize “the goal of consumers’ utility and hedonics, and is beneficial to realizing buying behavior.”

Furthermore, proper layout on the e-commerce website positively influences the experiences of buyers (Spies 1997, Xu 2007). Customers can remain active while shopping if the layout and design are appealing (Mowrey et al. 2019). Sales promotion acts as a short-term incentive to boost the sales of the products or services (Armstrong et al. 2014). Increased competition in the market increases sales promotion activities. Sales promotion techniques include premiums, reductions in prices, cash refunds, coupons, free samples, and others. (Kotler et al. 2012). Thus, it is assumed that website stimuli in terms of content richness, trust, and sales promotion positively impact customers’ emotional states.

H1: Website stimuli (evaluated by content richness, trust, and sales promotion) positively influence customers' pleasure.

H2: Website stimuli (evaluated with content richness, trust, and sales promotion) positively influence customers' arousal.

2.3 *Impulse Buying*

"Impulse purchasing refers to an unplanned behavior involving quick decision making and the tendency for immediate acquisition of the product." It is done without evaluating its price, affordability, and need. It is out of an intense urge to buy something after coming in contact with some stimuli (Rook 1987). "There is no planning involved, and the customer's decision to make a purchase is driven by his or her momentary impulse and not because they need that product" (Verplanken and Herabadi 2001).

The buyers are concerned about the relishing urge of buying something they wanted rather than finding a solution to their prerequisite need or fixing the problem (Lammert 2000). Impulse buying results from extemporaneous action to buy a product, which the buyer has not thought of until it happens (Beatty and Elizabeth Ferrell 1998). Considered as buying behavior that involves hedonic needs (Weun et al. 1998), lack of self-control (Rook and Fisher 1995), and highly irrational action out of spontaneity (Lammert 2000). "In the context of online purchases, a wide variety of products and "clicking" on it increases the temptation and which leads to impulse buying" (Greenfield 2005). These irrational buying acts are called impulse purchases.

Pleasure, Arousal, and Impulse Buying Behavior: The website stimuli-driven customer pleasure leads to impulse buying (Robert and John 1982). For instance, when the customers feel pleased and aroused due to the online store environment, it helps explore more products and thus indulges in impulse buying. Website stimuli bear the positive effect, which further leads to impulse buying, the positive effect being the feeling of arousal and pleasure. Thus, this study proposes the following hypotheses.

H3: Customers' pleasure is positively associated with impulse buying behavior.

H4: Customers' arousal is positively associated with impulse buying behavior.

2.4 *Moderating Role of Hedonic Motivation*

Hedonic motivations are those situational factors that help in the goal attainment of customers (Dawson et al. 2002). There are three dimensions to shopping motivation-social dimension (involves interactions among the people), product-oriented motivation (involves utilitarian motives concerning product acquisition), and personal and hedonic motivation (related to the pleasure associated with shopping) (Dholakia

1999). Buyers possessing hedonic motivations related to shopping may go for shopping to learn about the new trends (Arnold and Reynolds 2003), socialization (Rohm and Swaminathan 2004), adventure (Kukar-Kinney et al. 2009), and for gratification (Roberts et al. 2006). Impulsive buying and hedonic browsing impact each other. Hedonic browsing makes the experience on e-commerce websites worthwhile with the help of content that displays exciting offers for the buyers. Hedonic desires in buyers encourage them to keep an eye on an e-commerce website to be in touch with marketing messages and brands, which leads to impulsive buying tendencies. “Shoppers are excited and aroused because of recreational or hedonic motives” (Verplanken and Herabadi 2001). Hedonic motivation acts as an essential antecedent of consumer behavior. Thus, we predict that buyers with high hedonic motivation are likely to be involved in shopping via situational variables like pleasure and arousal. Based on the details above we frame, the following hypotheses.

H5: Hedonic motivation moderates the relationship between website stimuli on pleasure.

H6: Hedonic motivation moderates the relationship between website stimuli on arousal.

3 Methodology

Research methodology is the detailed techniques and procedures used for identifying, processing, and analyzing data about a subject. In the present study, we collected data from 370 respondents located in Delhi, NCR, India. We obtained responses through an online questionnaire and a simple random method of probability sampling to collect the data. Total responses collected were 370; out of these, we excluded unengaged responses of 26 respondents. Thus, in the end, considered 344 questionnaires for analysis.

Out of 344 respondents, 184 were females, and 160 were males. Most of the respondents in the study fall in the age bracket of 20–29 years, having an annual income of less than Rs. 400,000 (Table 1).

We developed the questionnaire using the previously used scales in earlier studies after making slight changes to suit the study’s objectives. The scales used were highly reliable due to their consistent use in many studies.

We have a total of 5 constructs: Web stimuli, Arousal, Pleasure, Impulse Buying, and Hedonic Motivation (as moderator), 17 items were considered to measure the construct. Nine items to measure three aspects of website stimuli: We used three items for content richness from (Barnes and Vidgen 2002); Three items for trust from (Lin 2007); and three items for Sales promotion from (Arnold and Reynolds 2003). Five items to measure Pleasure and Arousal were adopted from (Mehrabian and Russell 1974).

For assessing Impulse buying behavior, Three items from (Verhagen and Dolen 2011). For assessing Hedonic shopping motivation, one item from (Babin et al.

Table 1 Demographic profile of respondents

Demographics	Category	Frequency	%
Gender	Female	184	53.5
	Male	160	46.5
Age	Below 19	115	33.4
	20–29 Years	169	49.1
	30–39 Years	44	12.8
	Above 39 Years	16	4.7
Location	Delhi	135	39.2
	Faridabad	90	26.2
	Ghaziabad	19	5.5
	Gurugram	13	3.8
	Noida	27	7.8
	Greater Noida	59	17.2
	Others	1	.3
Occupation	Salaried	73	21.2
	Business	22	6.4
	Unemployed	14	4.1
	Students	218	63.4
	Others	17	4.9
Annual Income	Less than Rs. 400,000	207	60.2
	Between Rs. 400,001–Rs. 800,000	68	19.8
	Between Rs. 800,001–Rs. 12,00,000	32	9.3
	More than Rs. 12,00,000	37	10.8

1994). We conducted a pilot study with 30 responses to check the reliability. A five-point Likert scale measured the level of agreement for each item (where 1 stands for strongly disagree, 5 stands for strongly agree). The reliability and validity of the constructs were found adequate.

4 Data Analysis and Results

4.1 Descriptive Statistics

The statistics related to descriptive of the present study are reflected in Table 2. We used a five-point Likert scale to estimate all variables. The average values of all items measuring website stimuli are more than 3, indicating that every respondent positively

Table 2 Descriptive of Respondents

Variable	N	Minimum	Maximum	Mean	Std dev.
Cont_rich1	344	1	5	4.11	.902
Cont_rich2	344	1	5	3.94	.955
Cont_rich3	344	1	5	3.94	1.003
Trust1	344	1	5	4.24	.894
Trust2	344	1	5	4.08	.961
Trust3	344	1	5	4.38	.862
Sales_prom1	344	1	5	4.10	1.038
Sales_prom2	344	1	5	3.84	1.109
Sales_prom3	344	1	5	3.97	1.097
Hed_mt1	344	1	5	4.07	.907
Pleasure1	344	1	5	3.98	.972
Pleasure2	344	1	5	4.18	.794
Arousal1	344	1	5	3.59	1.126
Arousal2	344	1	5	3.58	1.035
Arousal3	344	1	5	3.58	1.258
Imp_buy1	344	1	5	3.16	1.331
Imp_buy2	344	1	5	3.20	1.390
Imp_buy3	344	1	5	3.01	1.421
Valid N (listwise)	344				

perceived the website stimuli. The values associated with standard deviation lie between 0.794 and 1.421, conforming to the construct being acceptable.

4.2 *Confirmatory Factor Analysis (CFA)*

CFA is the most frequently used method for assessing the validity of the model (Anderson and Gerbing 1992). We applied Discriminant validity and convergent validity after finding the construct reliable. The standardized factor loadings and composite reliability were tested to know the convergent validity. The composite reliability is more than 0.7, and the AVE of website stimuli, hedonic motivation, arousal, pleasure, and impulse buying was more than 0.5. Furthermore, the standardized factor loading for each construct ranged from 0.6 to 0.9. Thus, the composite reliability, AVE (average variance extracted), the square root of AVE (average variance extracted), and standardized factor loadings indicating convergent validity of the construct is satisfied.

The goodness of fit of the model was inspected through fit indices. The model used have a good fit with $\chi^2 = 256.416$; $df = 109$; $\chi^2/df = 109$; $RMSEA = 0.063$, $CFI = 0.920$; $TLI = 0.904$.

After that, AVE values assessed the discriminant validity. “If the square root of AVE of a latent variable is greater than the correlation among any pair of latent variables, the discriminant validity is ensured.” (Table 3).

4.3 Hypotheses Testing

In the present study, we developed and tested hypotheses through structural equation modeling. The structural model was found significant with $\chi^2 = 266.880$; $df = 111$; $\chi^2/df = 2.404$; $RMSEA = 0.64$; $CFI = 0.923$; and $TLI = 0.906$. The results of the hypotheses paths are shown in Table 4. H1 posits that website stimuli (in terms of content richness, trust, and sales promotion) positively influence customers’ pleasure. The corresponding regression coefficient is 0.804 which is significant with $t = 6.942$, $p < 0.001$. H2 posits that website stimuli (content richness, trust, and sales promotion) positively influence customers’ arousal. and it is confirmed by the data. The regression coefficient (shown in Table 4) used for measuring the variation in pleasure due to a unit increase in the website stimuli is 0.490, which is significant with $t = 5.393$, $p < 0.001$. H3 states that customers’ pleasure has a positive relationship with impulse buying behavior. This hypothesis is not supported as the regression coefficient is –

Table 3 Composite reliability and convergent validity of constructs

Factors	Composite reliability	Average variance exp (AVE)	Square root AVE
Arousal	0.765	0.520	0.721
Website stimuli	0.921	0.792	0.891
Pleasure	0.743	0.594	0.770
Impulse buying behavior	0.792	0.561	0.748
Hedonic motivation	1	1	1

Table 4 Result of structural equational modeling

Hypotheses	Hypothesized path	Std. regression weights	t-values	Supported
H1	Pleasure ← website stimuli	0.804***	6.942	Supported
H2	Arousal ← website stimuli	0.490***	5.393	Supported
H3	Impulse buying behavior ← pleasure	-0.42	-0.705	Not supported
H4	Impulse buying behavior ← arousal	0.851***	9.914	Supported

Notes: $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

0.042 reflecting $t = -0.705, p < 0.001$. Moreover, H4 postulates that Customers' arousal has a positive relationship with impulse buying behavior. The results were supported as shown in Table 4, where the standardized regression coefficient is 0.851 with significant values ($t = 9.914, p < 0.001$) (Figs. 1 and 2)..

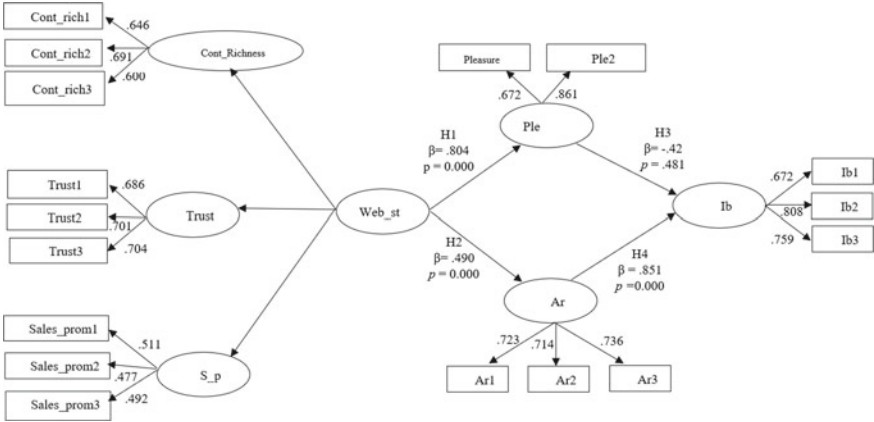


Fig. 1 Structural equation modeling

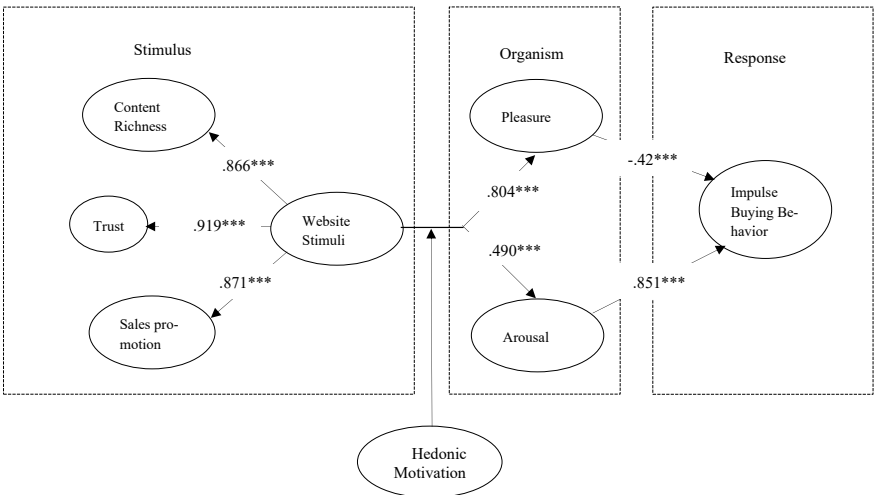


Fig. 2 The structural model with Standardized coefficients

4.4 Moderation Effect of Hedonic Motivation

All the variables got converted in their ‘standardized form’. After that, a ‘structural model’ constructed with interaction terms. The model has good fit where $\chi^2 = 8.042$; $df = 1$; $\chi^2/df = 8.042$; $RMSEA = 0.143$; $CFI = 0.983$; and $TLI = 0.833$.

H5 and H6 analyze the moderation effect of hedonic motivation.

H5 suggests hedonic motivation moderates the relationship between website stimuli on pleasure. Standardized regression coefficients (shown in Table 5), emphasizing the outcome of the interaction term between website stimuli and pleasure (website_stimuli*Hed_mt) is 0.087, which is not significant ($t = 1.897, p < 0.058$). Thus, H5 is rejected. Table 5 displays the standardized regression coefficient where the effect of interaction is shown between website stimuli and arousal (website_stimuli*Hed_mt) is = 0.199 which is significant ($t = 4.065, p < 0.000$). Therefore, we accepted H6 (Fig. 3).

Table 5 Results of moderation model

Hypothesized paths	Std. regression weights	t	p-value
Zarousal ← Zwebsite stimuli_	.337	6.153	***
Zarousal ← website_stimuli*Hed_mt	.199	4.065	***
Zarousal ← ZHed_mt	.290	5.149	***
Zpleasure ← Zwebsite_stimuli	.575	11.204	***
Zpleasure ← ZHed_mt	.078	1.487	.137
Zpleasure ← website_stimuli*Hed_mt	.087	1.897	.058

Note: website_stimuli = website stimuli, Hed_mt = hedonic motivation and website_stimuli* Hed_mt = interaction effect of website stimuli and hedonic motivation

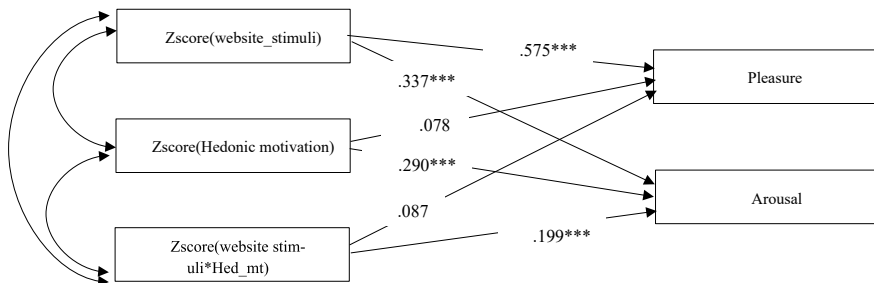


Fig. 3 Results of moderation

5 Conclusions

E-commerce in India is witnessing tremendous growth. It is substituting brick-and-mortar stores due to the accessibility of extensive assortments of products, quick deliveries, and a safe and secure transaction mode of making payments. Nearly every product is in reach of e-commerce nowadays. E-commerce is the reason why small stores reach a broader target audience and increase their sales over time.

This study attempted to discover the influence of website stimuli on impulse buying behavior. The study supports H1, confirming that website stimuli (content richness, trust, and sales promotion) influence pleasure. Results attained for hypothesis (H2) also confirmed that the website stimuli (content richness, trust, and sales promotion) influence arousal. Therefore, H2 is also supported in the study. The results obtained are in support of previous studies [66]. These two hypotheses proved that website stimuli lead to emotional responses like pleasure and arousal. Next, it was essential to know whether these emotional responses like pleasure and arousal lead to impulse buying, so we tested H3 and H4. The results revealed that H3 was not supported, suggesting that pleasure does not influence impulse buying but H4 was supported, proving that arousal positively impacts impulse buying.

The present study also tested the moderating effect of hedonic motivation on website stimuli (content richness, trust, and sales promotion) and emotional responses (pleasure and arousal) with the help of Amos 26.0. Hypothesis (H5) constructed to prove the interaction of website stimuli and hedonic motivation (website_stimuli*Hed_mt) on pleasure was found insignificant. Therefore, we rejected H5. Another hypothesis (H6) was confirmed showing the interaction of website stimuli and hedonic motivation (website_stimuli*Hed_mt) positively influences arousal.

5.1 Theoretical Implications

Available literature supports studies related to impulse buying are currently carried out primarily in developed countries. Therefore, their results can't be universally applicable to developing countries due to their diverse population. The present study is conducted in India, which is fast developing in e-commerce business where the preferences of people are different from developed countries. The study has made a meaningful contribution to the pre-existing literature by focusing on situational variables like arousal and pleasure, as limited literature was available in this regard. Prior research considered urge and impulse buying tendency as moderators while the mediation effect of situational variables (such as pleasure and arousal) remained unexplored. Hence, the present study has taken hedonic motivation as a moderator between website stimuli and situational variables like arousal and pleasure.

5.2 *Practical Implications*

This study proves a prominent role of Website Stimuli. By managing website stimuli appropriately, e-commerce websites have the possibility of earning more profits. Hence, e-commerce websites should improve their website stimuli in terms of content richness, trust, and sales promotion. They should make use of credible content, safe payment options, and sales promotional activities to make the website look more appealing. The present study has highlighted the role of situational variables like arousal and pleasure. So, the present study provides enough shreds of evidence to prove that e-commerce website can increase their turnover by making the buyers' experience on the website more enjoyable and pleasurable. Lastly, people engaged in online shopping have two motives- first being shopping motivations and the other being hedonic motivations. The present study revealed that people with hedonic motivation often indulge in impulse buying. So, e-commerce websites should try to modify their strategies to capture the attention of buyers having hedonic motivation, which can help them in increasing their business.

5.3 *Limitations and Recommendations*

The study suffers from certain limitations. Firstly, we collected data from people who have done online shopping, but it has not targeted any particular product or service. Secondly, we have not assessed the impact of demographics (gender, annual income, educational qualification, and occupation) on impulse buying behavior. Thirdly, the study considered only three indicators of website stimuli content richness, trust, and sales promotion, excluding other factors. Lastly, the study excludes the role of personality traits like self-control. So, future studies can provide emphasis on these limitations.

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A Study of Barriers to E-Commerce Adoption Among Cooperatives in Morocco



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Abstract This paper aims to identify and empirically examine the main factors hindering the cooperatives to adopting Ecommerce solutions in Agadir region. The conceptual model developed was based on previous researches. The research utilized the convenience sampling to gather data from 102 cooperatives. The Structural Equation Modeling technique was applied to analyze the data using the software of SmartPLS version 3.2.8. The research findings reveal that technical, economical and external barriers are the critical factors inhibiting Ecommerce adoption among cooperatives.

Keywords Ecommerce · Barriers · Cooperatives · Adoption · PLS modeling · Morocco

1 Introduction

Morocco's economy is hit hard by the impact of the economic recession linked to Covid-19. Although the health crisis is a threat to the survival of some companies, it has helped accelerate digital transformation in Morocco.

Digitization was not as much of a priority for some companies, but it has emerged as the only alternative and solution adapted to the current context. In order to ensure their continuity and overcome the impact of the crisis, companies have had to change the way they operate. In fact, a lot of companies have chosen Ecommerce tools as new sales channels for their products by creating Ecommerce showcases, hosted on their websites or in partnership with third-party intermediary platforms.

Cooperatives can be considered as a business, since it mobilizes factors of production, it produces goods and services, and relies mainly on the proceeds from the sale of its products to cover its costs.

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The cooperatives have been hit hard by the health crisis, mainly on the commercialization plan. While some cooperatives have overcome this problem by relying on the power of digital. The majority of cooperatives have found themselves faced with the difficulty of promoting and selling their products.

It is in this context that our problem is placed; it is a question of determining the main barriers which hamper the adoption of Ecommerce among cooperatives.

2 Literature Review

2.1 Moroccan Cooperatives: An Overview

Cooperatives, in full expansion in Morocco, operate in different sectors; contribute to economic development marked by a particular interest in the social aspect. They play an important role in the fight against precariousness, poverty and unemployment, especially in rural areas, and aim to integrate and improve the social and financial situation of the classes. The number of cooperatives in Morocco reached 40,531 cooperatives by the end of 2020, with 646,901 members (ODCO 2021). The Moroccan experience in this central component of the social and solidarity economy is considered distinct; it has strong potential supported by a political strategy of launching several sectoral plans aimed at supporting the levers of socioeconomic growth in Morocco. In addition, the Agadir region is ranked first in the geographical distribution of cooperatives in Morocco with a rate of over 9% at the end of 2020 (ODCO 2021).

The International Cooperative Alliance (2021) has defined the cooperative as an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. This definition links the cooperative to the notion of the association of people, and underlines the social character that marks cooperatives. The cooperative is also based on its role as a service provider to its members. It is thus, a company owned and controlled, democratically, by members (people) who use and benefit from the services offered by this business. In practice, any business can be organized as a cooperative. The goal of profit and profit making is almost present.

2.2 Adoption Barriers of Ecommerce in African Small Businesses

Ecommerce refers to using the internet and other networks (e.g. intranets) to purchase, sell, transport, or trade data, goods, or services (Turban et al. 2018). Kalakota and Whinston (1997) referred to a range of different perspectives for Ecommerce: (1) a

communications perspective – the delivery of information, products or services or payment by electronic means; (2) a business process perspective – the application of technology towards the automation of business transactions and workflows; (3) a service perspective – enabling cost cutting at the same time as increasing the speed and quality of service delivery; (4) an online perspective – the buying and selling of products and information online. These perspectives for Ecommerce are still valid today (Chaffey et al. 2019).

Ecommerce provides many benefits for consumers. It gives consumers more choices in selecting products and vendors and style. Consumers can shop any time from any place, can self-customize products and can use comparison engine. Also, Ecommerce allows consumers to interact in social networks and to exchange ideas and compare experiences (Efraim Turban 2015).

For organizations, the adoption of Ecommerce brings in many benefits such as gaining substantial returns through extending market reach, increased sales, increased operational efficiency, supply chain improvements, efficient procurement, improved external communication, improved company image, improved speed processing, increased employee's productivity, cost reduction, reduced inventories, enhanced customer/supplier relationships, providing competitive advantage and improved financial returns (Efraim Turban 2015; Rahayu and Day 2017).

However, organizations in the emerging economies and specifically, African small businesses do not enjoy these benefits due to different challenges. The literature provides an extensive list of barriers to adoption and use of Ecommerce by African small businesses.

Awa et al. (2015) have conducted a study on small and medium enterprise (SME) in Nigeria. They found that conglomeration of ICT experts, non transparency in government support programs, weak finance, firms size, infrastructure inadequacy and lack of openness and business integration are the critical factors inhibiting Ecommerce adoption.

Abou-Shouk and Eraqi (2015) have investigated the perceived barriers to Ecommerce adoption in Egyptian travel agents. The research findings reveal that technology attributes and resource limitations, business external environment factors (e.g. lack of public infrastructure readiness, legal concerns) and business internal environment factors (e.g. lack of awareness of Ecommerce benefits, lack of technological readiness) are the most perceived barriers from managers' viewpoint.

In the Morocco context, (Dahbi and Benmoussa 2019) have conducted an exploratory investigation concerning the Ecommerce adoption among SMEs. Their study revealed that Ecommerce adoption among SMEs is affected by technological, financial, cultural, and organizational factors. The financial and technological factors appear as the most critical ones, followed by the cultural and organizational factors.

3 Research Model and Hypotheses

The paper aim is to explore the factors inhibiting Ecommerce adoption by cooperatives in Agadir region; we have developed a conceptual model based on previous researches on adoption barriers of Ecommerce in small business (see Fig. 1).

3.1 Technical Barriers

The technical barriers pertained to issues such as lack of internet security, lack of education and knowledge about Ecommerce and lack of an information technology infrastructure. The literature on digitization has suggested that these barriers have a negative association with intentions to adopt Ecommerce among small businesses (Abou-Shouk and Eraqi 2015; Saif-Ur-Rehman 2016; Love et al. 2001; Lawrence and Tar 2010).

Small businesses may not use Ecommerce services if they are skeptical of the security of their private and financial information. According to Saif-Ur-Rehman (2016), problems appear at various levels starting with the doubts of computer viruses in the internet, through the danger of business data theft including theft of money during electronic transactions.

Lack of education and knowledge about Ecommerce is also a technical obstacle. In fact, without understanding what Ecommerce is or how it works managers might decide against adoption. Moreover, this can create a distrust attitude toward the utilization of Ecommerce tools and services.

Information technology infrastructure refers to computer equipment, telecommunication (network), servers, credit cards systems and other supporting systems like softwares. The presence of this infrastructure is a necessary for the development of Ecommerce in organizations. Lack of Information technology infrastructure may inhibit the implementation of Ecommerce in small business.

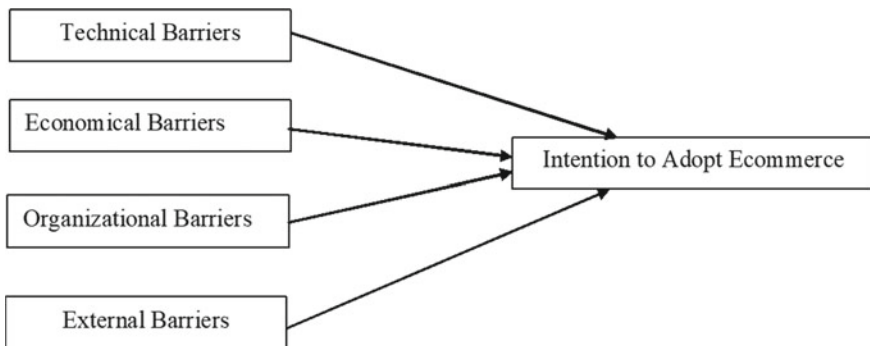


Fig. 1 The research’s conceptual model

In Moroccan cooperatives context like others small business, these barriers which are mentioned above may hinder the adoption of Ecommerce applications.

Therefore, we formulate the following hypothesis:

H1: Technical barriers are negatively correlated with the intention to adopt ecommerce by Moroccan cooperatives.

3.2 Economical Barriers

In this study, economical barriers refer the following factors such as: unclear benefits from Ecommerce adoption, lack of financial resources and high costs required for Ecommerce adoption.

Prior research has reported that these factors are proved as hinders to adopt the Ecommerce by small businesses (Awa et al. 2015; Dahbi and Benmoussa 2019; Saif-Ur-Rehman 2016; Love et al. 2001; Zaied 2012). In fact, the advantages and opportunities that Ecommerce applications can provide for small businesses are not always clear and many of them like cooperatives put themselves at a disadvantage by not adopting. Also, the limited resources available to cooperatives prevent them from making these investments.

In addition, investing in Ecommerce necessitates costs related mainly to the acquisition of IT equipment, maintenance as well as training and education.

Based on such argument, it is possible hypothesize that:

H2: Economical barriers are negatively correlated with the intention to adopt Ecommerce by Moroccan cooperatives.

3.3 Organizational Barriers

The organizational barriers pertained to issues such as lack of management support and general reluctance to change the way business was undertaken.

The literature on digitization has suggested that these barriers have a negative association with intentions to adopt Ecommerce among small businesses (Abou-Shouk and Eraqi 2015; Dahbi and Benmoussa 2019; Saif-Ur-Rehman 2016; Zaied 2012).

According to Lertwongsatien and Wongpinunwatana (2003), adopting and implementing Ecommerce requires resources extensively that are forthcoming only with the active support from management. Management support for Ecommerce would also send a strong signal to get line management to actively participate in proposing and developing Ecommerce initiative. The Ecommerce adopters would have a higher level of management support for Ecommerce than prospectors and laggards (Lertwongsatien and Wongpinunwatana 2003).

On the other hand, the implementation of ecommerce is accompanied by a new way of doing business. According to Love et al. (2001), when people are confronted

with, they naturally resist it and may need gentle persuasion to overcome the fear of the unknown, especially if it is technology related.

So we can expect that lack of management support and general reluctance to change the way business was undertaken may handle the Ecommerce adoption in Morocco cooperatives.

Accordingly, the study hypothesizes the following:

H3: Organizational barriers are negatively correlated with the intention to adopt Ecommerce by Moroccan cooperatives.

3.4 External Barriers

In this study, external barriers refer to lack of government support. We classified these barriers into lack of financial support from the government and lack of non financial support from government.

The literature on digitization has suggested that these barriers have a negative association with intentions to adopt Ecommerce among small businesses (Awa et al. 2015; Abou-Shouk and Eraqi 2015; Amornkitvikai et al. 2021). In fact, in term of financial support, the government can provide grants to cooperatives. This could reduce the costs associated with the implementation of Ecommerce applications and therefore these cooperatives will adopt this innovation.

In term of non financial support, the government can put also regular training programs on Ecommerce for cooperatives and give them the necessary IT infrastructure to successfully implement the Ecommerce applications.

Hence, we posit the following:

H4: External barriers are negatively correlated with the intention to adopt Ecommerce by Moroccan cooperatives.

4 Methodology

Since the study's aim is to explore the factors inhibiting Ecommerce adoption by cooperatives in Agadir region, a quantitative approach is employed with convenience sampling. In fact, we have chosen as simple the cooperatives which sell products like argan, aromatic and medicinal plants, honey and artisanal products because these products are suitable for Ecommerce transaction.

To attain this, self-administered questionnaire was delivered in person between 3 September and 8 October 2021. This was done because face-to-face communication helps to understand the questions and to enhance the response rate. The questionnaires were written in Arabic and French because French is the second-most common language in Morocco.

Five point Likert scale ranging from "Strongly Disagree = 1" to "Strongly Agree = 5" were used to measure the instruments (see Table 1). For the measurement of

Table 1 Constructs and its measures

Constructs	Items	Question items	Adapted from
Technical Barriers (TEB)	TEB1	Lack of internet security	Abou-Shouk and Eraqi (2015), Saif-Ur-Rehman (2016), Love et al. (2001), and Lawrence and Tar (2010)
	TEB2	Lack of education and knowledge about Ecommerce	
	TEB3	Lack of an information technology infrastructure	
Economical Barriers (ECB)	ECB1	Unclear benefits from Ecommerce adoption	Awa et al. (2015), Dahbi and Benmoussa (2019), Saif-Ur-Rehman (2016), Love et al. (2001), and Zaied (2012)
	ECB2	Lack of financial resources	
	ECB3	High costs required for Ecommerce adoption	
Organizational Barriers (ORB)	ORB1	Lack of management support	Abou-Shouk and Eraqi (2015), Dahbi and Benmoussa (2019), and Saif-Ur-Rehman (2016)
	ORB2	General reluctance to change the way business was undertaken	
External Barriers (EXB)	EXB1	Lack of financial support from the government	Awa et al. (2015), Abou-Shouk and Eraqi (2015), and Amornkitvikai et al. (2021)
	EXB2	Lack of non financial support from government	
Intention to adopt Ecommerce (IAE)	IAE1	We intend to use Ecommerce in the future	Kaur et al. (2020)
	IAE2	We will try to use Ecommerce	
	IAE3	We plan to use Ecommerce	

technical barriers, three items were adapted from Abou-Shouk and Eraqi (2015), Saif-Ur-Rehman (2016), Love et al. (2001), and Lawrence and Tar (2010). The sample item for technical barriers includes, “Our cooperative does not use Ecommerce because of lack of internet security”. Economical barriers were measured with three items adopted from Awa et al. (2015), Dahbi and Benmoussa (2019), Saif-Ur-Rehman (2016), Love et al. (2001), and Zaied (2012), and the sample item is, “Our cooperative does not use Ecommerce because of unclear benefits from Ecommerce adoption”. Organizational barriers were measured with two items adopted from Abou-Shouk and Eraqi (2015), Dahbi and Benmoussa (2019), and Saif-Ur-Rehman (2016), and the sample item is, “Our cooperative does not use Ecommerce because of lack of management support”. External barriers were measured with two items adopted from Awa et al. (2015), Abou-Shouk and Eraqi (2015), and Amornkitvikai et al. (2021), and the sample item is, “Our cooperative does not use Ecommerce because of lack of financial support from the government”. Intention to adopt Ecommerce in our cooperative were measured with three items adopted from Kaur et al. (2020), and the sample item is, “We intend to use Ecommerce in the future”.

In response, 102 cooperatives filled the questionnaire; all of them were complete and valid.

This study employs PLS-SEM to analyze and test the study proposed model. PLS-SEM is “a causal predictive approach to SEM that emphasizes prediction in estimating statistical models, whose structures are designed to provide causal explanations” (Hair et al. 2019). It is commonly employed in research of marketing (Hair et al. 2019) and information systems (Urbach and Ahlemann 2010). The PLS does not hold assumptions of normality for data as it uses method of bootstrapping for estimating parameters (Gefen et al. 2011; Henseler et al. 2012). The software of SmartPLS version 3.2.8 was used for data analysis (Ringle et al. 2015).

5 Analysis and Results

In PLS-SEM, the assessment of the model was carried out in two steps. The first step consists of assessment of measurement which includes evaluating reliability and validity. The second step includes assessment of structure which conducts the evaluation of hypotheses.

5.1 Measurement Model

The measurement reliability is evaluated through Factor loading, Cronbach's alpha (α) and composite reliability (CR).

In quantitative research, the use of α with a value of ≥ 0.70 is usually recommended (Hair et al. 2019). CR is also required with values of ≥ 0.70 (Urbach and Ahlemann 2010). Factor loading for each indicator should be within the threshold of >0.70 (Henseler et al. 2009).

The validity is examined utilizing convergent validity and discriminant validity. First, convergent validity is evaluated through average variance extracted (AVE). Convergent validity is assured when each construct has an average variance extracted (AVE) of at least 0.5 (Henseler et al. 2009).

Discriminant validity relates to the extent to what the measures of constructs differ from each other (Urbach and Ahlemann 2010). Fornell-Larcker criterion (1981) and Hetro-trait & mono-trait (HTMT) ratio implemented to test the constructs' discriminant validities (Henseler et al. 2015). The square root of each construct AVE yield more for its specific construct than another construct, showing the discriminant validity achieved. However, the HTMT ratio for the study construct needs to be less than 0.90 to describe the study construct discriminant validities.

The results of the study (see Table 2) showed that the factor loading for all items meet the threshold value of more than 0.70. Furthermore, in terms of reliability, the value for all constructs are higher than 0.7 for Cronbach's alpha (α) and composite reliability (CR). Therefore, it showed that the constructs have met the reliability of

Table 2 Measurement statistics of constructs

Constructs	Items	Factor loading	Cronbach alpha	Composite reliability	AVE
Technical Barriers (TEB)	TEB1	0,900	0,896	0,935	0,828
	TEB2	0,911			
	TEB3	0,919			
Economical Barriers (ECB)	ECB1	0,891	0,800	0,883	0,717
	ECB2	0,756			
	ECB3	0,886			
Organizational Barriers (ORB)	ORB1	0,939	0,853	0,932	0,872
	ORB2	0,929			
External Barriers (EXB)	EXB1	0,869	0,716	0,875	0,779
	EXB2	0,896			
Intention to adopt Ecommerce (IAE)	IAE1	0,854	0,790	0,877	0,704
	IAE2	0,829			
	IAE3	0,834			

the measurement model. In term of convergent validity, AVE values for all constructs were higher than 0.50. Therefore, the results validate the convergent validity between the constructs.

The results of the study demonstrated that the diagonal values for all constructs are greater than other values in raw and column (Fornell and Larcker 1981), therefore, it determine the measurement model has no discriminant validity issue (see Table 3). Likewise, hetero-trait & mono-trait ratio (HTMT) values were well below the threshold of 0.90 (see Table 4).

The assessment of multicollinearity is recommendable as well (Hair et al. 2011). The collinearity is measured by Variance Inflation Factor (VIF) values. The VIF indicates whether a predictor has a strong linear relationship with the other predictors. The generally used cut-off value for the VIF is 3 (Hair et al. 2019). As illustrated in Table 3, all VIF scores are lower than 3, asserting no multicollinearity issue.

Table 3 Fornell-Larcker Criterion and multicollinearity test

	TEB	ECB	ORB	EXB	IAE	VIF
Technical Barriers (TEB)	0,910					1,471
Economical Barriers (ECB)	0,293	0,847				1,509
Organizational Barriers (ORB)	-0,427	-0,554	0,934			1,629
External Barriers (EXB)	0,459	0,296	-0,228	0,882		1,320
Intention to adopt Ecommerce (IAE)	-0,652	-0,642	0,611	-0,577	0,839	-

Table 4 Heterotrait-Monotrait ratio (HTMT)

	TEB	ECB	ORB	EXB	IAE
Technical Barriers (TEB)					
Economical Barriers (ECB)	0,351				
Organizational Barriers (ORB)	0,485	0,666			
External Barriers (EXB)	0,571	0,387	0,288		
Intention to adopt Ecommerce (IAE)	0,769	0,806	0,738	0,762	

5.2 Structural Model

The structural model of the study was evaluated for its model’s predictive capabilities and construct’s relationship, using a set of criterion: path coefficient (β), coefficient of determination (R^2 value) and blindfolding predictive relevant (Q^2) was employed for theory development and explanation of prediction of the construct (Hair et al. 2014).

The analysis of internal structure supported all hypotheses except H3 as shown in Table 4 as the t-values are found to be significant ($t > 1.96$).

R^2 implies the percentage of variation in the dependent variable that independent variables collectively interpret. The interpreted variance (R^2) of intention to adopt Ecommerce is 0,728, confirming that the dependent variable is significantly interpreted by the structural model.

Moreover the Q^2 value is 0,507 which indicate our path model’s predictive relevance is high.

6 Discussion and Conclusion

The objective of the study was to explore factors hindering the adoption of Ecommerce among cooperatives in Agadir region. The empirical results provide support to all hypothesized relationships except H3 as depicted in Table 5.

H1 investigated whether technical barriers has negative association with intention to adopt Ecommerce among Moroccan cooperatives. The study results support the hypothesis. This is in line with most of the literature available in different research

Table 5 Hypotheses testing results

Hyp.	Relations	t-Value	β	p-Value	Supported?
H1	TEB \rightarrow IAE	7,767	-0,334	0,000	Yes
H2	ECB \rightarrow IAE	7,504	-0,345	0,000	Yes
H3	ORB \rightarrow IAE	4,469	0,215	0,000	No
H4	EXB \rightarrow IAE	6,568	-0,272	0,000	Yes

contexts (Abou-Shouk and Eraqi 2015; Saif-Ur-Rehman 2016; Love et al. 2001; Lawrence and Tar 2010). These findings mean that lack of internet security, lack of education and knowledge about Ecommerce and lack of an information technology infrastructure hinder the Moroccan cooperatives to adopt Ecommerce.

Consequently, Ecommerce services providers should reassure cooperatives about safety and security of Ecommerce applications through their advertising and campaigns.

In addition, cooperatives should improve the technical infrastructures that are necessary for Ecommerce implantation and internal systems that support Ecommerce to make it more effective and efficient. Appropriate levels of Ecommerce training programs can be designed by cooperatives to develop members' knowledge on Ecommerce as well.

H2 examined whether economical barriers are negatively associated with intention to adopt Ecommerce among Moroccan cooperatives. The study findings support the hypothesis. This is again consistent with prior research, which also suggests that economical barriers share a negative relationship with intention to adopt Ecommerce (Awa et al. 2015; Dahbi and Benmoussa 2019; Saif-Ur-Rehman 2016; Love et al. 2001; Zaied 2012). These findings mean that unclear benefits from e-commerce adoption, lack of financial resources and high costs required for Ecommerce adoption hinder the Moroccan cooperatives to adopt Ecommerce.

Therefore, Ecommerce services providers should promote the advantages and benefits of Ecommerce to the cooperatives to increase their awareness to push them to make use of Ecommerce.

In addition, cooperatives face difficulties obtaining finance and other resources. Thus, policymakers should give facilities obtaining finance in order to encourage cooperatives to adopt Ecommerce.

H3 hypothesized that organizational barriers have negative association with intention to adopt Ecommerce among Moroccan cooperatives. The study findings do not support the hypothesis. Our study results contradict most prior literature, which has suggested that lack of management support and general reluctance to change the way business was undertaken have negative association with intention to adopt Ecommerce among small businesses. Abou-Shouk and Eraqi (2015), Dahbi and Benmoussa (2019), Saif-Ur-Rehman (2016), and Zaied (2012). This is probably due to the core values of cooperatives such as personal and mutual responsibility, democracy, equality, fairness and solidarity. In fact, when it is an initiative to set up an Ecommerce project, the management and the members of the cooperatives do not hesitate to get involved and join in order to succeed in this common project.

The study findings also support H4 which investigated the negative association of external barriers with intention to adopt Ecommerce among Moroccan cooperatives. This is in line with most of the literature available in different research contexts (Awa et al. 2015; Abou-Shouk and Eraqi 2015; Amornkitvikai et al. 2021). These findings mean that lack of financial support from the government and lack of non financial support from government hinder the Moroccan cooperatives to adopt Ecommerce.

Therefore, government should put in place initiatives to support cooperatives through assistance and effective training programs and give them the necessary financial support to encourage them to adopt Ecommerce.

7 Implications

In terms of theoretical implications, this study provides a measurement model that may be useful for academics and researchers conducting further research into Ecommerce adoption barriers in cooperatives sector, specifically in African context, where few studies have been conducted, and the majority was focused on factors hindering Ecommerce adoption in small businesses.

The study reflects the perceptions of Ecommerce adoption barriers among cooperatives in Morocco in particular; where no study has been conducted on Ecommerce adoption barriers in cooperatives sector to date. Additionally, researchers could use this study in other African countries to compare and verify if there are differences from one country to another.

In terms of managerial implications, recognizing the factors that hinder Ecommerce adoption among cooperatives could encourage governments and policymakers to take action. For example, Ecommerce services providers should reassure cooperatives about safety and security of Ecommerce applications through their advertising and campaigns. Also, they should promote the advantages and benefits of Ecommerce to the cooperatives to increase their awareness to push them to make use of Ecommerce. In addition, policymakers should give facilities obtaining finance in order to encourage cooperatives to adopt Ecommerce. Government should also put in place initiatives to support cooperatives through assistance and effective training programs and give them the necessary financial support to encourage them to adopt Ecommerce.

8 Limitations and Further Research

This study has some limitations. Firstly, regarding the sample size, the focus on Agadir region restricted the data collection, thus impacting the results of the study. In this sense, future research should enlarge the sample size by adding other cities in Morocco and/or in other African countries. Second, in this study, we have not taken into consideration the moderate influence variables like cooperatives size and age. These variables may influence the results of our study. Third, the current study focuses on the use of survey data to collection information. Future research, that utilising qualitative method such as interview can be adopted for more understanding Ecommerce adoption barriers among Moroccan cooperatives.

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E-commerce in China and Latin America. A Review and Future Research Agenda



James Manuel Pérez-Morón 

Abstract This study reviews scientific publications in China's e-commerce and influence on Latin America's market. The study took China, Mexico, Colombia, Venezuela, Chile, Argentina and Uruguay as variables. This study also offers an overview of Chinese platforms with presence and use in Latin America's business. This research uses a qualitative approach, using a paper review (2001–2020) within the Scopus and Web of Science databases. This study shows China's e-commerce lessons for Latin American e-markets and Latin-American e-commerce challenges. The cross-cultural research in this field is immature. The authors help to close the gap in providing Latin American businesses with knowledge in e-commerce and how to put into practice the learned lessons from China e-commerce.

Keywords E-commerce · China · E-market · Latin America · E-business

1 Introduction

Enterprise systems have a transparent role within the processes market, especially e-business systems which play a basic role within the world today. With the presence of technological evolution, many recent technologies appeared which might serve e-business trend: like the Internet of Things (IoT) cloud computing and virtual marketplace engineering (Zhang 2018), which generally facilitate enterprise system e-business and e-commerce jobs such as (buying products easily, rapid service delivery to the clients, online responding to the customers' requests with effective cost) (Zebari et al 2019), but with rapid marketplace changing and turbulent environment and increases pressure from stakeholders, it's key for companies to implement these technologies with high flexibility and for competitive purpose (Liu 2008; Zhou et al 2016).

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With every device that enables individuals to access online retail offerings, like computers, smartphones, tablets, and Internet-enabled TV, online shopping is becoming not only more versatile but more complex. Also, (Wagner et al. 2018) within the context of consumers’ choices channel, multichannel researchers have emphasized the requirement to know the advantages that individuals derived from each retail channel to see effective and efficient single-channel strategies and to use customer-centric multichannel retailing strategies (Payne and Frow 2005). China and Latin America differ regionally, linguistically and both are highly influenced by local cultural perspectives, so, their e-commerce fields have evolved at a different pace (Arancibia et al 2015; Pavlova 2018).

Latin-American e-commerce markets aren’t homogeneous. It’s a region divided by two languages (Spanish and Portuguese), each country with different privacy laws and levels of economic development, which has impacted the expansion of e-commerce in the region (Kamel 2006).

2 Methodology

This study performs a paper review within the Scopus and Web of Science databases ranging from the year 2001 until the present. First, the study searched and collected journals (including the ones with highest citations to make sure that no important articles are bypassed), this is consistent with Cheung and Thadani (2010), books and conference proceedings. The search was conducted using the following keywords: (i.e. “e-commerce”, “e-business”, “e-market”, “modern economy” with a geographical focus on “China” and “Latin America”.

Second, the study selected relevant papers, based on the title, abstract, and the papers themselves. Finally, a total of 22 articles and 6 conference proceedings are chosen for our review. Table 1 shows a list of journals included.

Table 1 List of documents included for our review included for our review

Journal/Proceedings	Authors	Title
Human–Computer Interface International	Aaron (2001)	Cross-Cultural User-Interface Design
Advances in Intelligent Systems and Computing	Abawajy et al. (2020)	International Conference on Applications and Techniques in Cyber Intelligence
Journal of International Trade Law and Policy	Alistair (2002)	Environment and trade – where are we now?
World Development	Alvarez (2018)	Does Institutional Quality Matter for Trade? Institutional Conditions in a Sectorial Trade Framework

(continued)

Table 1 (continued)

Journal/Proceedings	Authors	Title
International Conference on Information Technology - New Generations	Arancibia et al. (2015)	E-commerce Concerns - Latin American Factors in Transactional Websites
International Journal of Mechanical Engineering and Technology	Balamurugan (2018)	E-commerce - Customer experience and relationship
Proceedings of the 13th International Conference on Web Search and Data Mining	Carmel et al. (2020)	Why Do People Buy Seemingly Irrelevant Items in Voice Product Search? On the Relation between Product Relevance and Customer Satisfaction in e-commerce
Decision Support Systems	Cheung and Thadani (2012)	The impact of electronic word-of-mouth communication: a literature analysis and integrative model
Management Science	Geoffrion and Krishnan (2003)	E-business and management science: Mutual impacts
Macroeconomic Management	Li (2015)	Research on the innovation and development of traditional industry under the background of e-commerce
IOP Conference Series Materials Science and Engineering	Li (2020)	How to Implement the Commodity Publishing System in E-commerce Platform
Proceedings of the 2019 IEEE 16th International Conference on Networking, Sensing and Control	Lingyu et al. (2019)	Strategic development of fresh E-Commerce with respect to new retail
Proceedings of the 35th Annual Computer Security Applications Conference	Marchal and Szyller (2020)	Detecting organized e-commerce fraud using scalable categorical clustering
International Journal of Psychosocial Rehabilitation	Natsir et al. (2020)	An experimental analysis on impact of digital marketing on business-to-business e-commerce
Computer Science	Powarl (2020)	Learning image information for e-commerce queries
Journal of Islamic Marketing	Ramyani et al. (2019)	A mathematical model to adopt B2C e-commerce based on special customer requirements in social values with an emphasis on Islamic beliefs
Test Engineering & Management	Sukumar and Ashok (2020)	Patron focused e-commerce site al chat robot

(continued)

Table 1 (continued)

Journal/Proceedings	Authors	Title
Coastal Research Library	Timofeeva (2019)	The Transition to a Digital Society in the People's Republic of China (Development and Implementation of the Social Credit Score System)
International Journal of Electronic Commerce	Vladimir (2003)	Electronic commerce and organizational innovation: Aspects and opportunities
Journal of Business Research	Wagner et al. (2018)	Online retailing across e-channels and e-channel touchpoints: Empirical studies of consumer behavior in the multichannel e-commerce environment
Sustainability	Wang and Wang (2019)	A Study on Sustaining Corporate Innovation with E-Commerce in China
Journal of Physics Conference Series	Wang and Zhang (2020)	To study the game coordination mechanism for the closed-loop supply chain in rural e-commerce
International Journal of Civil Engineering and Technology	Wardoyo et al. (2018)	Adoption of e-commerce, entrepreneurship orientation mediated by business strategy on the performance food industries
Geoforum	Wrigley and Currah (2006)	Globalizing retail and the "new e-economy": The organizational challenge of e-commerce for the retail TNCs
International Journal of Scientific & Technology Research	Zebari et al. (2019)	E-business requirements for flexibility and implementation enterprise system: A review
4th International Conference on Wireless Communications, Networking and Mobile Computing	Liu (2018)	Comparison Study on Impacts of Internet on Service Trade in China, America and South Korea
International Journal of Engineering and Technology(UAE)	Pavlova et al. (2018)	Analysis of the world and Russian E-commerce market: Development trends and challenges
Cognitive Computation	Zhou et al. (2016)	Online Shopping Behavior Study Based on Multi-granularity Opiion Mining: China Versus America

Source: Own elaboration

Table 2 China's e-Commerce Market revenues and estimates until 2024. Selected by most requested items

Year	Sales in US \$ millions
2017	1,406,889
2018	1,662,619
2019	1,948,388
2020	2,237,959
2021	2,502,154
2022	2,718,510
2023	2,883,436
2024	3,004,191

Source: By authors

3 E-conomy in the World

In 2020, the global e-economy (the economy of internet and e-commerce) will cross the two trillion US\$ threshold. With US\$667 billion in sales in 2019, China is number one in e-commerce and the numbers show it will stay in the lead through 2024. A shift in purchasing power from the U.S. and Europe to China and Southeast Asia has begun, fueled by the growing number of Asian consumers gaining access to e-commerce due to growing purchasing power and internet penetration, especially on mobile devices (Statista 2020) (Table 2).

This study can see here how e-Commerce has become a global phenomenon, in an evolutionary rather than a revolutionary fashion (Wrigley and Currah 2006) gaining more strength day by day. The path that is shown in the previous figure shows a pattern of continuous growth, where more and more areas in which the digital market is divided grows (Statista 2020).

4 China as an Emerging Market

This study describes China as one of the foremost promising economies in the world, being an example to follow for all countries that want to develop at the amount that China has reached. Today, the country is that the second most powerful major power within the world, and who is additionally projected to be the primary to beat the U. S. of the primary place.

However, with complications of competitors, business restructuring, drawbacks in technologies, and lack of experience, fresh e-commerce businesses are now in a very period of critical innovation. Their broadening advantages that are influencing the market are considered for e-commerce businesses. Thanks to this a number of the most important e-commerce giants within the world are competing to revolutionize the way people receive everyday items, specifically grocery products (Lingyu and Zhijie 2019).

Table 3 Top 5 Major E-commerce markets

Country	US \$ (Millions)
China	\$ 1,001,974
United States	\$ 419,879
Japan	\$ 99,130
United Kingdom	\$ 84,885
Germany	\$ 82,155

Source: Own elaboration

It reflects the coincidence of favorable cost conditions with improvements in China's ability to supply products that meet world market specifications. These improvements are closely associated with foreign participation in China's economy through direct foreign investment and joint ventures." (Álvarez et al. 2018).

"The last ten years have seen an upsurge in interest within the nexus of trade and environmental policies. This reflects partly the requirement to pander to major global pollution problems and partly concerns that globalization may have adverse impacts on the environment" – (Ulph 2002) (Table 3).

Comparing the three major e-commerce markets – the U.S., China, and Europe – China was the biggest market in 2019 and will stay in the lead through 2024. The Chinese market is worth US\$867.9 billion in 2019, with fashion being the biggest segment. Revenues are expected to grow at a Compound Annual Growth Rate of 11.6% up to 2024, resulting in revenues of US\$1,309.5 billion. In other words, the Chinese market is expected to show the largest growth rates of the three major regions. In the U.S. market, revenues of US\$365.2 billion were generated in 2019. Judging from the high CAGR of 12.4%, the market is expected to exceed revenues of US\$599.1 billion by 2024. The third biggest e-commerce market in 2019 in Europe with revenues of 349.6 billion. Annual growth of 8.8% will lead to revenues of US\$503.0 billion by 2024 (Statista 2020).

5 The Chinese Modern Digital Economy

"China has achieved substantial development success since its reform and opening up in 1978. GDP growth has averaged almost a common fraction a year, and over 850 million people are lifted out of poverty. Today, China is an upper-middle-income country but has remaining challenges" – (World Bank 2019). The rapid development of cross-border e-commerce has brought enormous challenges to the logistics industry around the world, but it also brings unprecedented opportunities. At present, China's online consumption has become a replacement thrust for economic development, China's cross-border e-commerce industry during a few years from the bud to mature. (Geoffrion and Krishnan 2003).

The development speed of traditional foreign trade tends to block, while the transaction volume of cross-border e-commerce increases year by year. It shows that

Table 4 China's age user for their customer

Ages of usage	Percentage
18–24 years	22%
25–34 years	31%
35–44 years	24%
45–54 years	16%
55–64 years	7%

Source: Own elaboration

cross-border e-commerce has huge development potential and can become a crucial growth point of China's foreign trade. On the opposite hand, the shortcomings of logistics mode within the background of the cross-border e-commerce era are shown one by one (Abawajy et al. 2020).

In modern China, a replacement style of society is being actively formed—the digital society. A digital society could be a society governed by the employment of data and communication technologies supported the applying of microelectronics, local and global computer networks that collect, process, generate and distribute information through systems of world telecommunication networks. Digital society, in its essence, could be a network information society (Timofeeva 2019).

E-Commerce is growing at a rapid rate and has become a worldwide phenomenon, which offers convenience, flexibility, accessibility. E-Commerce involves a web transaction. E-Commerce provides multiple benefits to the consumers in a variety of availability of products at a lower cost, wider choice and saves time. The innovation for business today is e-commerce (Wardoyo et al. 2018) (Table 4).

China's modern digital economy also is determinate by the customers of users. More clients are relying on this method of purchasing items, even the elders, where they are using this market to satisfy their necessities quicker and result in a more developed society.

6 The Rise of E-commerce in China

The development of e-commerce in China provides an honest opportunity for research during this field. With the rapid development of China's e-commerce, it's become an important market within the global Internet economy. (Wang and Wang 2019). Research on China's e-commerce, especially its impact on corporate innovation, is becoming more and more important. At present, academics pay little attention to the connection between China's e-commerce development and company innovation. Recently, some studies have presented various factors impacting on corporate innovation. (Wang and Wang 2019).

Some studies target China's e-commerce and signify the impact of e-commerce on corporate innovation. As an example, Li (2015) believes that e-commerce has caused a substantial impact on the standard enterprise supply chain system. Traditional

enterprises must adapt to the event trend of e-commerce, and actively perform technological innovation, thus, forming a replacement relationship between traditional business and electrical business.

The effects of e-commerce are already appearing in altogether areas of business from customer service to new product design. Despite being the second-largest user base in the world, only behind China (650million, 48% of the population), the penetration of e-commerce is low compared to markets just like the U. S. (266 million 84%) or France (54 M, 81%) but is growing at an unprecedented rate.

Finally, e-commerce improves the efficiency of the external economic environment. The applying of e-commerce and other Internet technologies enables companies to rearrange business processes and other styles of corporate cooperation supported market information at a coffee cost (Vladimir 2003).

Now China is searching for more ways to cooperate within the international market and not just inside the country, foreign investments are that the key nowadays. Thereupon being said, the geographic area is on the planning to form honest research, seeking new opportunities within the west and geographic area needs the assistance to even grow more as a powerful region. The distances don't seem to be the matter anymore, cause the new technology to help both parts to speak and be in grips with commerce.

The report, E-Commerce Development: Experience from China, is predicated on a mix of statistical data collected for China as a full, furthermore as data from a specially commissioned survey of Taobao Villages, rural villages in China heavily engaged in e-commerce. In step with the report, e-commerce has the potential to beat market barriers and connect consumers and businesses. It can create jobs directly furthermore as through logistics services and other parts of the broader e-commerce ecosystem. China currently has the world's biggest e-commerce market with one in every of the fastest growth rates. (Li 2019) (Fig. 1).

Sales percentage	Annual online retail sales (billion USD)	shared of world total	Annual growth compared to previous years
Asia and the Pacific	\$ 1.349,20	58,6%	31,1%
Central Eastern Europe	\$ 44,80	1,9%	24,6%
Latin America	\$ 44,60	1,9%	21,9%
Middle East and Africa	\$ 23,30	1,0%	24,9%
North America	\$ 486,80	21,1%	16,7%
Western Europe	\$ 355,40	15,4%	15,4%
China	\$ 1.055,90	45,8%	32,2%
Total	\$ 2.304,10	100,0%	24,8%

Source: Own elaboration based on Clemens 2020

Fig. 1 Annual online sales retail in the world

7 Laws of E-commerce and E-business in China

Enacted on January 1 of 2019, China's E-commerce Law covers the registration and operation of e-commerce platforms by requiring that companies obtain the right licenses before selling online. Additionally, the law places stricter oversight on E-commerce operators and seeks to chop down on false advertising and nonpayment, while simultaneously seeking greater consumer protection and data privacy standards (Nitkoski 2019).

Larger players like Alibaba can fit these laws and absorb the associated costs," says Min Chun, Senior Project Leader for Daxue Consulting, a research and service industry firm that makes a specialty of the Chinese market." The E-commerce Law will, however, "have an impression on the tiny and mid-sized competitors who cannot handle the burden of additional taxes and regulatory requirements. For consumers, they're unlikely to note a change," said Chun. "Over time, they'll notice that there are fewer sellers and SKUs available for products, but this means that counterfeit or suspect merchandise has been off from the platform (Nitkoski 2019).

E-commerce may be a good way to start a business in another country and China wants to penetrate that market all told regions. As its product is low cost to the present economy, Latin America can afford these prices thanks to a budget staple potential, as China's labor is one of the most affordable within the world. Mixing those things, both parts can get some benefits to compete worldwide. But first, let's see how Latin America is through the decades.

8 Latin America's E-economy

Latin American countries have always been the most vulnerable and volatile when this study compares their economies, either global crisis or a strong devaluation of its currency, and it becomes more difficult the way they trade.

Several studies claim that the Latin American economy has been growing as the other more developed region such as North America, Europe, and China, but, why it does not feel like it? Civil wars at the time and corruption were the most seen scenarios. Since the early 1980s, the growth was gaining strength, and more with economic openings early in 1990, which allowed countries to penetrate the international market more easily thanks to the economic openings of the time and trade treaties.

Because of this, Latin America was exposed as an attraction for the international market, thanks to the excellent geographical location owned, where countries are enabled to have lots of quantities of any product such as agriculture, livestock, mining, allowing the region even grow a little more.

Overall, Latin America's economy has boomed since the start of the millennium but this study has filtered and shown some declines over the decades, which are known and had a powerful impact on the economy those years, as an example,

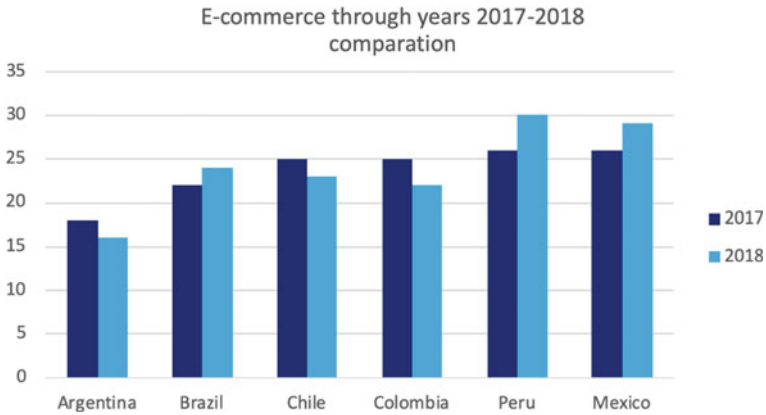


Fig. 2 Gross-rate e-commerce average by country from 2017 to 2018

Argentina in 2001 but they managed to show out well. Even though, more foreign direct investment was shown to assist the country and grow because of the other.

Moreover, even more emerging markets within the geographical area, from the assembly of oil to the textile industry where the added value that offers each company to its flagship product. Although there's a market that has been excellent in recent years and due to internet access in most occupant countries has been growing over the years, this can be referred to as an online market or "E-commerce" where most people entering that market is handled virtually.

Going hand by hand with "E-Business" where whole the negotiation is online, no physic environment, they manage the logistic and safety of the merchandise thank to advance technology which helps the corporate to try and do it.

"E-commerce has tripled sales recorded during the last six years in a geographical area. Additionally, estimates indicate that e-commerce will grow by 24.5% within the region during 2018. "(Rado 2017). And so, where sales grew giving the foremost attractive region for businesses "E-Business" open more logistics services for this area (see Fig. 2 below).

Where the dark blue bar represents the growth of e-commerce in the country in 2017, and the light blue bar growth in 2018 in most countries of the graph surpassed the previous year, which means that for the next year, E-commerce will grow way more.

9 E-Commerce and E-business in Latin America Helped by China

"Latin America's economy is on the increase. 155.5 million people within the continent are expected to use online platforms to shop for goods and services in 2019

- a staggering 126.8 million from Increase in 2016 “(Ehlers 2019). Despite Latin America’s e-commerce market remaining small, recent figures show that as compared with Asia Pacific or North American, the region’s retail e-commerce sales are to rise an estimate of \$ 79.7 billion US, dollars in 2019 from just \$ 49.8 billion US dollars in 2016. Today in the geographic region, there’s an increasing demand for e-commerce after years of recession. However, any merchant hoping to require advantage of obtainable opportunities will need a very localized and directed approach to earn consumer acceptance, as customers are still extremely price conscious. (The Fintech Time 2019).

But that’s not all, the geographic region also uses this market to achieve income and generate more revenue and also, together with new technologies and international logistics is simpler to speak with individuals around the world, in countries with more income through this market include Mexico, Brazil, Argentina, Chile and Colombia, Uruguay and Peru, showed a rise to the passing of the years.

Companies related to international logistics and online shopping have said that “Latin America’s bricks-and-mortar retailers are generating more sales not only from their physical stores but also from their online stores as industry giants experience a slowdown in penetrating the region’s e-commerce market.” (Furness 2019). Amazon not only the corporate recognizes this strong market, yet as companies from the East Asian countries, China is that the main supplier of most simple stuff for several entrepreneurs in the geographic region, all due to its low cost.

Due to this, it’s seen a rise in sales of Latin American countries, as a touch get low-cost raw materials, it’s easier to get benefits of the merchandise being marketed (Fig. 3).

The figure shows an estimated behavior of the growth for the region, growing year after year, which means that the change is positive to generate more revenue and help



Fig. 3 Latin America E-commerce Sales

	2014	2015	2016	2017	2018	2019
Retail ecommerce sales (billions)						
Brazil	\$16.87	\$19.79	\$22.46	\$25.04	\$27.55	\$30.11
Mexico	\$4.38	5.7	7.24	\$9.04	11.03	13.27
Argentina	\$3.55	\$4.96	\$6.85	\$8.84	\$10.60	\$12.38
Other	13.45	\$16.92	\$20.47	\$23.66	26.14	28.99
Latin America	\$38.24	\$47.37	\$57.02	\$66.59	\$75.32	\$84.75
Retail ecommerce sales growth (% change)						
Argentina	64.2%	40.0%	38.0%	29.0%	20.0%	16.8%
Mexico	32.0%	30.0%	27.0%	25.0%	22.0%	20.3%
Brazil	24.0%	17.3%	13.5%	11.5%	10.0%	9.3%
Other	29.6	25.8	21.0	16.6	10.5	10.9
Latin America	29.8%	23.9%	20.4%	16.8%	13.1%	12.5%
Retail ecommerce % of total retail sales						
Brazil	2.6%	2.8%	3.0%	3.2%	3.3%	3.5%
Argentina	1.6%	1.9%	2.3%	2.7%	2.9%	3.2%
Mexico	1.2%	1.5%	1.8%	2.1%	2.5%	2.9%
Other	2.0%	2.3%	2.5%	2.8%	3.0%	3.3%
Latin America	2.0%	2.3%	2.5%	2.8%	3.0%	3.2%

Fig. 4 E-commerce sales in Latin America, by country 2014–2019

the region grow, since not only do trade with Asian countries or Europe’s, also in the same Latin American geographical area to grow together and have a mutual benefit.

In this other figure, this study shows the growth of e-commerce, not just a year, but also the sales growth by country and total sales percentage representing the GDP of each country. Mexico and Brazil are the most frequent purchasers in the e-commerce of Latin America, the most confident and secure in their purchases, also they buy their raw materials at low cost from Asian countries (Fig. 4).

10 Problems and other Conflicts

Due to this and also “with the fast growth of the geographical region e-commerce industry, it’s essential to style effectively thus applications for e-commerce websites in an exceedingly Latin American context” (Arancibia et al. 2015), since not all countries speak the identical language, the maintain a platform or application, not in Spanish, represents more distrust for Latin American users, this must be changed and with other psychological factors taken into consideration for a Latin American perspective, may result into regression for the market itself.

It is difficult to conceive how web users from different cultures are encouraged to earn the advantages of an e-commerce site service when it’s culture is stricken by an indifferent quality interface. Another factor is that the safety in payments and banks,

Fig. 5 E-Banking users in Latin America

Online Banking Users in Select Countries in Latin America		
Country	Unique Visitors	%reach
Brazil	26,2	44,00%
Venezuela	5,9	54,70%
Argentina	5,3	30,00%
Mexico	3,7	15,10%
Colombia	3,2	27,10%
Chile	3	46,50%
Peru	1,5	23,20%
Uruguay	0,4	23,70%
Latin America	-	33,00%

the figure shows the proportion of individuals using electronic banks and feeling safe with the purchases they create online (Fig. 5).

The numbers show some similarity to the countries shown in previous graphs, where Mexico and Brazil feel comfortable when shopping online, showing security in their transaction and satisfied along with your purchase a comparison with other countries, which don't they need an occasional value, but they still lack the confidence to get these purchases.

Another factor that will inherit consideration would be the payment method, very different from that virtual banking, since not all providers in exceedingly virtual marketplace e-commerce have the identical bank accounts for such transaction, and thus increase the price of the merchandise.

Even though, the foremost widely used method to get products are international credits card but not all people have access to those cards, which suggests they might must use another method of payment and perhaps this can be not enabled yet therein country, which hinders trade relations of some small businesses and individuals to induce products to grow.

The number of nations that feel 100 percent safe to get online is few. The net browsing pages of e-commerce manage all the logistic process to form the devolution of the merchandise if it never came or cancel the merchandise on time.

Kamel (2006) identified additional challenges for Latin-America e-commerce industry: "shipping costs are high and customs crossing can be cumbersome and lengthy"; Latin-Americans like to have a personal touch when shopping, which e-commerce lacks"; the integration of shipping services, inventory management, and customer service is still in its infancy" and finally "low computer penetration limits the impact of the internet".

11 Conclusions and Future Research Agenda

The worldwide economy has presented an improvement through the passing of the years, where more and more people want to begin a business and grow with their company. Technology has helped countless these entrepreneurs through networking advanced Internet, which permit connect us with countless people in a few seconds, and after we compared these companies with “e-business” policies, they’re not thus far from achieving the utmost objective.

The countries that highlight from the region are Mexico, Colombia, Chile, Brazil, Argentina, and Uruguay, being the foremost prominent to show this case of study. Electronic or “E-Commerce” in geographical region trade which it’s gaining much strength in recent years and younger entrepreneur must know this market itself if they require to grow as an organization.

With lessons from China’s market, occupant countries can get low-cost raw materials and switch them into good products to realize some benefits to their economies. Therewith being said, the products will get some more attention to an additional important market, making the region more attractive to global markets.

Some issues were popping during the study, which must be taken into consideration to boost and lift awareness. Among the causes that the study found within the study was the dearth of consumer confidence to pages which don’t to talk the identical language because of the country, since it represents a psychological behavior for many Latin American countries. Another issue would be the incompatibility of payments, where countries fail to fulfill payment methods established by the platform and need to tilt by a global credit card, and not all individuals are within the area can exercise.

Finally, the electronic marketplace “E-Commerce” and electronic businesses “E-Business” are generating an oversized swing in occupant countries, due to platforms like Instagram and Facebook to market their products and portals electronic purchase as Wish, Alibaba Group and Amazon, to get raw materials represents a price savings of those end products so that they can trade with customers and therefore the cost-benefit ratio is that the most optimal sale.

As future research agenda, further transnational, cross-cultural research and comparative studies are required between China and its relationship with Latin America to obtain solid theory and practice that allow a deeper understanding of the lessons that China offers to Latin America in the e-commerce field.

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Measuring Customer Satisfaction Using Marketing Mix Strategy on Insurance Clients



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Abstract Satisfaction carries the meaning of a customer's assessment of the product or service where the products and services provided meet or do not meet their needs and expectations. This study was meant to test the customer satisfaction among life insurance clients in Malaysia that subscribed to several life insurance providers such as Takaful, Prudential and Great Eastern. Based on convenient sampling method data was collected using a self-administered research questionnaire from 163 respondents who have subscribing for family takaful plan. Through the lenses of marketing mix strategy consisting of product, pricing, promotion, people and process, the respondents gave their rating of satisfaction against their takaful operators on items of 5-points Likert Scale items. Data analysis results indicate that all marketing strategies were positively correlated to customer satisfaction and supported all hypotheses. Thus, the study may serve as a reference for future researchers, academics and policy makers that customer satisfaction may also enhanced through several marketing strategies.

Keywords Customer satisfaction · Marketing mix · Takaful

1 Introduction

Customer satisfaction is an established concept and well-known in areas of marketing, economic psychology, consumer research and economics (Aziz et al. 2019; Haji Wahab 2018; Remli and Rosman 2018). A common interpretation about satisfaction is the feeling generated from evaluating process on what has been

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received against what is expected, including the purchasing process, the requirements and desires of the customers associated with the purchase (Kotler et al. 1996; Oliver et al. 1997). Based on Zeithaml and Bitner (2003), satisfaction is a customer's assessment of the product or service where the products and services provided meet or do not meet their needs and expectations. Kessler (1996) stated that increased satisfaction requires a clear understanding of satisfaction and how it can be managed by service providers. Customer satisfaction also describes the measurement of the types of products and services provided by a company to meet the expectations of its customers.

For some, this may be an indicator for key performance of the company (KPI) (Beckers et al. 2018). In a competitive market where businesses in every organization compete for customers, customer satisfaction becomes center of attraction and increasingly important element in business strategy. The current study is focusing on customer satisfaction among life insurance clients in Malaysia. Life insurance is one type of insurance that covers life and death for its clients. Today, based on the fundamentals of savings and risk as well as traditional products, life insurance products are evolving to meet customers' goals and requirements in terms of usage, storage and risk management (Karthi 2020). There is a necessity for the marketers (also called insurance operator) to know the needs and wants of customers as well as how the attitude forms towards their products. At the same time, objectives, goals and coverage of these products are also increasingly expanded towards effective financial plans for participants from birth to retirement (Mai et al. 2020). Despite great benefits and multiple purpose adaption of life insurance, as well as the economic growth and consumer income increase, the life insurance market has not been proportionally increasing (Mai et al. 2020). In this case, customers' satisfaction is regarded as a factor of growth, profitability and development as well as KPI for takaful operator achievement. As a key indicator, the number of customers subscribing family takaful plans will affect the fund assets of takaful operator for every year. In challenging industry environment, takaful operators must take appropriate measures to ensure that company remains competitive advantage and will sustain in marketplace with new innovative ways of takaful business. This study was meant to measure customer satisfaction from the angle of marketing mix strategy. Specifically, the study examines the correlation between product, pricing, promotion, people and process and customer's satisfaction among clients towards their life insurance operators.

2 Literature Review

It is crucial to understand how the positive and negative attitudes of customers towards services and products are formed, and their effect on purchasing behavior. Customer satisfaction is the feeling or attitude of a customer towards a product or service after using it (Jamal and Naser 2002). In other words, satisfaction is a positive feeling in a person after using certain goods or receiving services. The satisfaction depends

on the ability of the service provider to meet the customer's norms and expectations. Therefore, the expectation exists from the confrontation between customer expectations and supplier performance. If the goods and services received by the customers are evaluated at the level of expectations, they will feel satisfied. If the level of services and goods is higher than the level of customer expectations, it will make the customer happy and if otherwise, it will result in customer dissatisfaction. Therefore, satisfaction could be simply understood as the customer's pleasant or unpleasant feelings comparing the performance of the purchased good/service with the customer's expected performance of that product/service. Customer satisfaction is a key to achieve the use of a product or service.

In addition, this satisfaction has a positive correlation with the intention of re-purchasing. Also, satisfied customers are less sensitive to price, are less influenced by competitors and remain loyal to the company for a long time. That's why having loyal customers are considered as having a competitive advantage. This paper will explain how customer satisfaction could be achieved through marketing measures among life insurance clients. In a layman term insurance is understood by public as a contract arranged between two parties; the policy holder and the insurance company (also known as the insurer), where the contract allowed compensation for specified loss, damage, illness or death in return for premium paid by the policyholders (Azman et al. 2020). According to the statistics published by the Ministry of Transport, Malaysia, the total number of road accidents in 2016 was 521,466 compared to 489,606 in 2015, with an increment of 7%. The total deaths caused by the road accidents also increased by 7%, from 6,706 deaths in 2015 to 7,152 deaths in 2016, and a number of 5,083 deaths on the road from 400,788 from road accident 2017 (Azman et al. 2020).

Nowadays, takaful industry has become more diversified internationally and locally as there has been a significant increase in the number of takaful operators operating worldwide including Malaysia. Takaful operator is the takaful fund administrators or known as organizations managing funds in trust on behalf of the participants. There is a contract between takaful operator, and the participants provided under the *Wakalah* (agency) or *Mudharabah* (profit-sharing) (Hassan et al. 2018). The increase number of takaful operators in Malaysia encourage a good opportunity for the expansion of the takaful market share and increased penetration. There are two types of takaful businesses that is: General Takaful and Family Takaful (Masud 2010). According to Cheikh (2013), General Takaful focuses on short-term property and liability protection against any loss or damage.

There are many types of protection offered such as fire and theft, motor-vehicle, marine, personal accident, employer's liability and workers compensation. The participant determines the amount he or she wants to guarantee and pays his takaful contribution to the takaful operators. On the other hand, Kaunain and Akhtar (2016) stated that, the Family Takaful focuses on combination of long-term protection and savings for participants and dependents arising from disability, survival or death. This is an investment program to provide *halah* investments (which are considered to Shariah) returns to participants as well as joint financial aid. Individuals take part in regular residual money to provide supportive financial assistance their dependents

if they face early death, or as a contingency savings if they are having permanent disability or still alive until maturity date of the policy plan. The contribution income for the takaful business is increased from RM17.0 million in 2011 to RM26.8 million in 2016. Similarly, conventional insurance businesses are also increased at a higher pace from RM36.4 million in 2011 to RM48.7 million in 2016. In terms of contribution income for the insurance and takaful business, it can be concluded that the takaful fund asset was far behind the conventional insurance. Currently, the performance improvement mechanism in the takaful industry focuses on customer satisfaction, demand and interest.

The elements in marketing mix namely product, price, place, and promotion (4P) are controllable tools that reflect customer's demand and satisfaction. Organizations that using the marketing mix in their business will help them increase the organization's sales and profits, thus reaching their optimal marketing level (Sahni 2017; Bay et al. 2008). On the other hand, holistic marketing acknowledges that everything matters in marketing and that a broad, integrated perspective is often necessary (Pomering and Johnson 2018). Understanding and execution of elements in the marketing mix will help service providers to influence potential and existing customers to continue to do business and become loyal customers to their products and services (Nandi et al. 2013). In this context, the researchers trying to examine how takaful industry use marketing mix elements to investigate factors that can bring customer satisfaction to the clients that subscribed to family takaful plan.

2.1 Product

Preceding studies done by Al Muala and Al Qurneh (2012) and Goi (2011) stated that 'products' are goods or services offered by companies in the market. Products can be classified as something or anything that can be offered to the customers for attention, acquisition or consumption and satisfies some wants and needs. It consists of ideas, physical objects, people, places, services or organizations. Marketers need to build real products around core products and then build augmented products around core and actual products. Core products refer to service of problem solving or core benefits that customers get when they purchase some products, instead of actual products refer to product parts, design, features, brand names, packaging, levels quality and other features combined in others to deliver key benefits. Augmented products mean connecting additional services and benefits around core and actual products. This additional factor can guarantee after-sales service, installation and so on (Riaz and Tanveer 2012). Product as one of the keys in marketing mix element whereby the retailers can differentiate their products by offering unique features from competitors. The quality, features, brands and designs, give characteristics of the product. As such, good customer acceptance of the product is based on the benefits of the products that they received and the design that suits with them. Hence, pre-and post-sales services are an integral part of the product package and it could contribute to improved customer satisfaction. There are five principles which can influence

customer satisfaction that is: purity, lawfulness, deliverability, price determination, cleanliness (Kotler and Armstrong 2004). If we are talking about the broad sense, then: a product which is purchased by a consumer also includes the post-sales relationship with the company. And this relationship includes certain features, certain scents, certain colours, and warranty. Having all these characteristics within a product will satisfy customers as they appreciate value for money. Therefore, the hypothesis for this study as below:

H1: Product features positively correlated with customer satisfaction.

2.2 Price

Price is seen as the most important factor affecting users' choice (Aziz et al. 2019; Mohammed Kamil et al. 2018). Prices are the only variables in the marketing mix that must be fixed in relation to the other Ps and the most important elements as it is the only revenue-generating mix for the organization. Previous researchers (e.g. Al Muala and Al Qurneh 2012; Riaz and Tanveer 2012; Goi 2011) stated the price is the money amount that charged for a service or product or its total value converted to a user for the benefit or use of a service or product. It refers to what customers need to pay for product or cost of products to customers. The remaining Ps are the variable cost which costs in the organization to produce and design the product includes costs to distribute products and costs to promote them. Hence, price must support these mixed elements. Prices must reflect on demand and supply relationships. In organizations, the price of a product that is too low or too high may result in loss of sale. Prices should refer to the change of fixed and variable costs, company objectives, competition, placement strategy suggestions, target segmentation groups and willingness to pay. Expensive prices bring higher profits. However, expensive prices can increase short-term gains but in the long run, it can bring to lower sales and profits and give contradictory findings. Pricing can be a substitute for sales, product quality, and advertising. Therefore, to enhance satisfaction of customers service providers or organizations must actively manage their customer perceptions of prices, such as conducting attractive prices, offering affordable prices or lower prices without lowering quality (Nakhleh 2012; Chung and Shin 2008). Prices are not only based on the cost incurred by the firm. Prices give due consideration to the consumer perception of the value of the product or services. Every firm's cash flow will get managed through their loyal customers and if firm will give due consideration to the it's loyal customers while taking price decision it will helpful in creating customer satisfaction. Hence, the study proposed the following hypothesis:

H2: Pricing strategy positively correlated with customer satisfaction.

2.3 Promotion

Promotion is an integral element of the business and is an essential tool in overall process of marketing in organizations (Shah et al. 2018; Goi 2011). Promotion as a sales enhancer, must be involved with communication to succeed in any marketing program. Promotion may go through advertising, exhibition, online, public relations, personal sales and direct marketing. It helps potential customers to know various options of products and services that available in the market. Programs of promotion are essential in marketing strategy due to its significant role in providing the necessary advice and information, persuading customers to the merit of certain product and manage or encourage them to act at a given time. All activities of promotion can affect their users' thinking, emotions, experiences and their purchases. Marketers must communicate in a way by offering consistent orders about their products and it will be placed in the media which users in the target market tend to and easily use them (Al Muala and Al Qurneh 2012). Product advertising can be delivered by all sorts of social media such as television, radio, internet, magazines, newspapers and individual sales (Nunan et al. 2018). While doing promotional activities the following points should be kept in mind of the marketers such as: there should be honesty in the advertisements, all the promotional activities should be based on truthfulness, transparency in the act of the dealers, and work should be done with full sincerity. All this help in increasing customer loyalty and as well as in customer satisfaction. Thus, the following hypothesis is posited:

H3: Promotion strategy positively correlated with customer satisfaction.

2.4 People

People refers to workers who produce and deliver services within organization. There are many cases involving personal interactions between employees and customers and this relationship greatly influences customer perception on service quality (Al Muala and Al Qurneh 2012). In organization, employees are the key to the product and service delivery to their customers. Customer orientation performance is unlikely if there is no cooperation and interaction from employees. This interaction become important as it affects customer perceptions of the product, the service and the organization itself. Hence, the actions of every employee usually influence the success of organizational actions and functions by enhancing communication, skills, training and learning, and the motivation they will achieve in delivering optimum value to customers (Shishi Kumar et al. 2016). Based on the above, the following hypothesis is developed:

H4: People element positively correlated with customer satisfaction.

2.5 Process

Element of process in marketing mix is identified as the action, implementations and functions to add value of products to customers. Processor rates as well as service provider skills are clearly downgraded to customers and it becomes the basis of their satisfaction with purchases (Al Muala and Al Qurneh 2012). Therefore, management of process ensures the availability and suitability of quality. In the face of demand and simultaneous use of production management process, the balance of demand for services and supply of services is extremely difficult. The design and implementation of product elements is essential for the creation and delivery process of products smoothly (Gong and Yi 2018). According to Hirankitti et al. (2009) the pace of the process as well as the skill of the service providers are clearly revealed to the customer and it forms the basis of his or her satisfaction with the purchase. Therefore, the following hypothesis is proposed:

H5: Element of process positively correlated with customer satisfaction.

3 Methods

Data was collected from selected takaful clients in Kota Bharu who have subscribing family takaful plans from selected takaful operators that having at least one year of experienced in life insurance business. Data was obtained via self-administered questionnaire, a method of quantitative research through convenience sampling techniques, from October 2018 to November 2018. Initially, a total number of 196 questionnaires were distributed, however only 163 usable responses were successfully collected with a response rate of 83.16%. The questionnaire was designed in line with this study's research objective in examining the correlation between marketing mix strategy that is: product, pricing, promotion, people, process and customer satisfaction towards takaful operators among takaful clients. The questionnaire comprised of three sections. Section A consisted of demographic profile of respondents, Section B requested the respondents to provide responses on their personal experiences using product, Section C for pricing, Section D for promotion, Section E for people, Section F for process and Section G requested to provide response on customer satisfaction. In total, 42 items, were used to measure the six independent variables, while seven questions were used to measure the dependent variable. The respondents responded based on a five-point Likert scale ranging from 1 strongly disagree to 5 strongly agree.

4 Results

4.1 Demographic

Table 1 displays demographic profiles of the respondents based on their age, gender, marital status, education level, working sector, monthly income, takaful clients' experience and their residential area. By compiling and summarizing all demographic data, researchers can determine the frequency and percentage of each respondent's category using descriptive analysis. Table 1 indicates majority of the respondents were between 30 years old and below (55 respondents) with a percentage of 33.7%, followed by the age group between 31–40 years old (52 respondents) with a percentage of 31.9%, then group between 41–50 years old (29 respondents) with a percentage of 17.8%, then followed by 14.1% of respondent (23 respondents) aged 51–60 years old and 2.5% of respondent (4 respondents) aged 60 years old and above. From the analysis, majority of respondents were married with a percentage of 73% (119 respondents) compared with single respondents of 23% (44 respondents). Furthermore, most respondents were working in private sector with a percentage of 49.7% (81 respondents) and followed by 27.0% (44 respondents) were self-employed. Others 17.8% (29 respondents) were working in public sector and 5.5% (9 respondents) were unemployed. Majority of the respondents lived in the city

Table 1 Demographic profile

Demographic frequency percentage		
<i>Age</i>		
30 and below	55	33.7
31–40	52	31.9
41–50	29	17.8
51–60	23	14.1
60 and above	4	2.5
<i>Marital status</i>		
Married	94	73.0
Single	69	27.0
<i>Employment sector</i>		
Public	29	17.8
Private	81	49.7
Self-employed	44	27.0
Un-employed	9	5.5
<i>Residential area</i>		
Urban	122	74.8
Sub-urban	41	25.2

with a percentage of 74.8% (122 respondents) while 25.2% (41 respondents) were from rural areas.

4.2 Test of Correlation

Test of correlation between product, pricing, promotion, people and process on customer's satisfaction among clients towards their life insurance operators was done to provide evidence for all objectives developed in the study.

4.2.1 The Correlation Between Product and Customer Satisfaction

Table 2 indicates the product has high correlation ($r = 0.613$, $p = 0.000$) with positive direction (one-tailed test) on customer satisfaction towards takaful operators. The p-value is 0.000 indicates a significant result (when p-value below or equal to 0.001 is significant). The positive direction relationship between these two variables shows an increase in product will increase customer satisfaction towards takaful operators. The result proved that there is correlation between product and customer satisfaction and answered the first objective. Based on the result, the Hypothesis 1 is supported.

4.2.2 The Correlation Between Pricing and Customer Satisfaction

Table 2 indicates the pricing has a high correlation with the size ($r = 0.632$, $p = 0.000$) and the relationship direction is positive on customer satisfaction towards takaful operator. Besides that, p-value is 0.000 indicates a significant result. The positive direction relationship between these two variables shows the when price increase it will increase customer satisfaction towards takaful operators. The result proved that there is correlation between price and customer satisfaction and answered the second objective. Based on the result, the Hypothesis 2 is supported.

4.2.3 The Correlation Between Promotion and Customer Satisfaction

Table 2 indicates promotion has a high correlation with the size ($r = 0.674$, $p = 0.000$) and the relationship direction is positive on customer satisfaction towards takaful operator. Besides that, p-value is 0.000 indicates a significant result which p-value below than 0.001 is significant. The positive direction relationship between these two variables shows that the increase in promotion will increase the level of customer satisfaction towards takaful operators. The result showed that there is correlation between promotion and customer satisfaction and answered the third objective. Based on the result, the Hypothesis 3 is supported.

Table 2 Mean, standard deviation, reliability and intercorrelation (n = 163)

Variable	M	SD	Product	Price	Promotion	People	Process	Satisfaction
Product	4.14	0.57	0.85					
			Pearson correlation Sig. (1-tailed)					
Price	3.78	0.54	0.622** 0.000	0.79				
			Pearson correlation Sig. (1-tailed)					
Promotion	3.83	0.58	0.596** 0.000	0.504** 0.000	0.79			
			Pearson correlation Sig. (1-tailed)					
People	3.83	0.63	0.564** 0.000	0.534** 0.000	0.578** 0.000	0.87		
			Pearson correlation Sig. (1-tailed)					
Process	3.49	0.62	0.469** 0.000	0.524** 0.000	0.585** 0.000	0.539** 0.000	0.83	
			Pearson correlation Sig. (1-tailed)					
Satisfaction	3.63	0.52	0.613** 0.000	0.632** 0.000	0.674** 0.000	0.696** 0.000	0.739** 0.000	0.83
			Pearson correlation Sig. (1-tailed)					

Cronbach Alpha reliabilities are shown in bold. M Mean, SD Standard Deviation

*Note: n = 163. ** Correlation is significant at 0.01 level (1-tailed)*

** Correlation is significant at 0.05 level (1-tailed)*

Table 3 Results of Pearson correlation and hypothesis testing

	Correlation (r) against customer satisfaction	Correlation	Result of hypotheses
Product	0.613	High correlation	H1: Supported
Pricing	0.632	High correlation	H2: Supported
Promotion	0.674	High correlation	H3: Supported
People	0.696	High correlation	H4: Supported
Process	0.739	High correlation	H5: Supported

4.2.4 The Correlation Between People and Customer Satisfaction

Table 2 indicates people have a high correlation with the size ($r = 0.696$, $p = 0.000$) and the relationship direction is positive on customer satisfaction towards takaful operator. Besides that, p-value is 0.000 indicates a significant result. The positive direction relationship between these two variables shows that service given by people or operators is increase it will increase the value of customer satisfaction towards takaful operators. The result proved that there is correlation between people and customer satisfaction and answered the fourth objective. Based on the result, the Hypothesis 4 is supported.

4.2.5 The Correlation Between Process and Customer Satisfaction

Table 2 indicates process has a high correlation with the size ($r = 0.739$, $p = 0.000$) and the relationship direction is positive on customer satisfaction towards takaful operators. Besides that, p-value is 0.000 indicates a significant result. The positive direction relationship between these two variables shows that as the effects in process increase it will increase the level of customer satisfaction towards takaful operators. The result indicated that there is correlation between process and customer satisfaction and answered the fifth objective. Based on the result, the Hypothesis 5 is supported.

In sum, Table 3 concluded that the correlation indicates high and all hypotheses testing for each independent variable were supported.

5 Conclusions

Overall, findings from data analyses indicated that all objectives developed for the study were answered with positive correlations between product, price, promotion, people and process towards customer satisfaction. Accordingly, all hypotheses tested in the study also supported. The implementation of the detailed practices has considering product, pricing, promotion, people and process that affecting customer satisfaction contribute to a good impact on the community and the country. The use of

suitable systems, knowledgeable company staff, right attitude and skills, aggressive promotion initiatives, and reasonable price by maintaining the quality of products meet the customer needs as well as improve customer's positive perceptions towards takaful operators. Consequently, customers will benefit the product offerings served by takaful operators. At the same time customers have a lot of choices of takaful products that fit their prices and preferences. Claims and payment processes become easier and faster due to proper procedures in addition to the process being handled by knowledgeable and skilled operators. Furthermore, promotion that appears more aggressively make it easier for customers and the public to obtain information and knowledge about takaful products and services. This will increase awareness and confidence among community to contribute and become takaful policyholders. The growing number of takaful clients will also increase the company's revenue and contribute to national income. These findings made the largest contribution to the takaful operators in improving customer satisfaction, enhancing their performance and being more competitive advantage in the marketplace. However, some limitations arise whereby this study only measures on five factors as mentioned. Therefore, further research should be considered to identify other variables that may affect these factors, such as mediator factor, which explains the relationship between the two other variables and moderator factor, which influences the strength of a relationship between two other variables. In order to contribute substantially to existing knowledge of customer satisfaction in the Takaful sector in Malaysia, similar future research should be conducted in both Takaful and conventional insurance. Existence in the same industry, but the performance of Takaful is still behind conventional insurance. Hence, this is very interesting to explore for future studies.

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Determinants of Electronic Word of Mouth and the Mediating Effect of Brand Image Among Airline Customers in Malaysia



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Abstract Given the significance of electronic word of mouth for digital edge, this research evaluated the influence of selected determinants towards brand image and electronic word of mouth among airline passengers in Malaysia. A total of 400 random airline passengers were participated in this survey. The results showed that the components for social media marketing activities components are entertainment and trendiness. It is revealed that social media marketing activities, value consciousness, and brand consciousness can positively and significantly enhance brand image. Brand image shown a positive influence on electronic word of mouth among the Malaysian airline passengers. Thus, brand image can significantly mediate the effects of social media marketing activities, value consciousness, and brand consciousness eWOM across the sample of the study. Apart from extending the current e-marketing management literature, the study contributed to the airline companies, particularly in Malaysia, to set their marketing plans using social media, value, and brand consciousness in developing customers engagement through electronic word of mouth.

Keywords Electronic word of mouth · Brand image · Airline passengers · Malaysia

1 Introduction

Currently, the air transportation has turned into a profound source of business in generating billions of dollars and facilitating economic development of several countries as air aviation can empower people from all around the globe to connect

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comfortably with one another (Lerrthairakul and Panjakajornsak 2014). Air transportation popularity rallies around people who seek better and new markets besides being the access to competitive global suppliers (Lerrthairakul and Panjakajornsak 2014). Airline industry also affects the rapid growth in tourism, specifically the Asia Pacific on the economic development while establishing it as one of the world's top tourist receiving region (Liu and Lee 2016). According to Liu and Lee (2016), airline service experiences direct airline passengers' behaviour, future consumption intention, customers' word of mouth, other communications, and purchase intentions. One of the crucial factors that impact air passengers' demand, customer response, and brand equity is word of mouth (Damaiansyah et al. 2018).

In particular, electronic word of mouth (eWOM) is the most common and effectual channel of sharing reviews and opinions regarding diverse services and products within a market. eWOM has significant associations with brand image (BRIMA) and a considerable impact on online purchase intentions (Nuseir 2019). Product-focused eWOM is a unique phenomenon of exchanging marketing information among consumers that is well-documented in advertising and marketing literature. eWOM can influence consumers' decision making, attitude, and behaviour towards specific services and products (Chu and Kim 2011). According to Jansen et al. (2009), eWOM is an influential, immediate, and multifaceted process of transmitting information from one person to another that plays a major role in forming consumers' buying decisions and expressions of brand satisfaction; thus, it acts as a powerful marketing tool for companies to improve their BRIMA.

The need for empirical studies on the determinants of consumers' engagement through eWOM is essential as the use of internet and social media by marketers are effective in promoting products and services (Chu and Kim 2011). Although the existing literature displays some work on BRIMA and eWOM, the factors that trigger eWOM among airline customers in emerging economies such as Malaysia remain unexplored. A nuanced understanding of the drivers of eWOM is imperative to enhance the knowledge and provide meaningful insights into the internet-based marketing strategies with strong implications for the marketers (Nuseir 2019). Therefore, the present study intended to investigate the influence of identified factors such as social media marketing activities (SMMAC), value consciousness (VACONS), and brand consciousness (BRCONS) on BRIMA and eWOM among the airline passengers in Malaysia (Ismail 2017; Seo and Park 2018).

2 Literature Review

2.1 *SMMAC and BRIMA*

Social media refers to a group of web-based applications that provide users with the ability to connect with others freely, creating and exchanging user-generated contents, opinions, information, or thoughts about brands and their products across

the social networks, which are an effective channel for eWOM (Chu and Kim 2011). BRIMA refers to the subjective perceptions, current associations, and the set of beliefs regarding a specific brand that is held in the minds of the consumers, which can significantly impact the quality and life of a product or service (Nuseir 2019). It is believed that social media is fundamental for consumers to ensure the quality of airline services as social media plays an important role in customer response and brand equity (Damaiansyah et al. 2018). According to Liu et al. (2019), social media is a cost-effective image building tool for brands. Previously, Jansen et al. (2009) suggested that word of mouth is dependent on trust and social networking. During social media interactions, consumers can voluntarily display their preference towards a brand persona. Hence, the following hypothesis is presented:

Hypo₃: SMMAC has a positive influence on BRIMA among the Malaysian airline passengers

2.2 *Componnets of SMMAC: Entertainment and Trendiness*

SMMAC is a key element to achieve positive BRIMA and loyalty (Ismail 2017). According to Seo and Park (2018), trendiness is one of the key components of the social media related activities. In a more recent study, Liu et al. (2019) found that constructs such as entertainment and trendiness represent the dimensions of a brand's SMMAC that can significantly enhance customer engagement. In an earlier study Kim and Ko (2012), associated brands' SMMAC is the combination of entertainment, trendiness, interaction, and customisation, which can influence customers' word of mouth. In such regards, entertainment is perceived as a brand's effort to create and offer interesting and funny contents for their consumers using social media, whereas trendiness is defined as the degree to which different brands disseminates the trend and latest information on products and services (Liu et al. 2019). It is expected that entertainment and trendiness can significantly determine SMMAC (as first-order constructs) for the present study; thus, generating the following hypotheses:

Hypo₁: *Entertainment is a dimension of SMMAC among the Malaysian airline passengers*

Hypo₂: *Trendiness is a dimension of SMMAC among the Malaysian airline passengers*

2.3 *VACONS and BRIMA*

Beyond the mental image, BRIMA conveys an emotional value among consumers regarding a specific brand; hence, consumers' value of a brand can influence the purchase decisions (Nuseir 2019). According to Damaiansyah et al. (2018), BRIMA and its awareness are carved into a consumer's memory through the unique perceived value that is more than a product name or a symbolic meaning sought by the brand. In

a previous study, Ismail (2017) argued that VACONS could influence consumers to become more brand-loyal. Moreover, Liu and Lee (2016) argued that value perception and its evaluation plays a mediator's character on the influence of service quality on behavioural intentions. Airline passengers consider an airline service to be high quality if the perceived brand value meets their expectations in influencing the passengers' willingness to pay for specific airline brand services. Hence, the following hypothesis is proposed:

Hypo₄: *VACONS has a positive influence on BRIMA among the Malaysian airline passengers*

2.4 BRCONS and BRIMA

BRCONS is defined as the ability of customers to differentiate between brand marks in various circumstances and customers can remember the brands (Damaiansyah et al. 2018). BRCONS is known to significantly influence consumers' brand loyalty (Ismail 2017). In a previous study brand awareness is important for brand commitment (Seo and Park 2018). Jansen et al. (2009) suggested that BRIMA and awareness are inter-connected key for the company-customer relationship elements. Conscious consumers know specific brand names that facilitate their purchase decisions (Damaiansyah et al. 2018). Thus, BRIMA reflects a common perception regarding a particular brand that is embedded in the consumers' memory. Therefore, this study proposed the following:

Hypo₅: *BRCONS has a positive influence on BRIMA among the Malaysian airline passengers.*

2.5 BRIMA and EWOM

EWOM depicts both negative and positive statements by former present, or potential consumers regarding a product or a brand, which is exposed to a mass of individuals and entities via internet using available online platforms, including emails, blogs, websites, forums, consumer reviews, virtual communities, and social networking websites (Chu and Kim 2011; Jansen et al. 2009). Ismail (2017) argued that BRIMA impacts customers' loyalty positively, while Seo and Park (2018) found that BRIMA influences word of mouth. In an earlier study, Jansen mentioned that word of mouth branding is linked with the key company-customer relationship elements such as BRIMA, awareness, and consumers' perceptions. Moreover, Nuseir (2019) argued that electronic word of mouth is the key element for any brand's online marketing mix due to its noteworthy association with BRIMA. In the context of the airline industry, Liu and Lee (2016) noted that a positive BRIMA helps in promoting good brand reputation, which in turn contributes to brand promotion through word of mouth.

Hypo6: BRIMA has a positive influence on EWOM among the Malaysian airline passengers.

2.6 The Mediating Effect of BRIMA

The review of existing literature demonstrated the direct effect of SMMAC, VACONS, and BRCONS on BRIMA with the direct influence of BRIMA on eWOM. The mediating effect of BRIMA on the associations of SMMAC, VACONS, and BRCONS with eWOM can be observed in the proposed model (Fig. 1) below. Hence, the following hypothesis is proposed:

HypoM₁: BRIMA mediates the effect of SMMA on EWOM among the Malaysian airline passengers
HypoM₂: BRIMA mediates the effect of VACO on EWOM among the Malaysian airline passengers

HypoM₃: BRIMA mediates the effect of BRCO on EWOM among the Malaysian airline passengers.

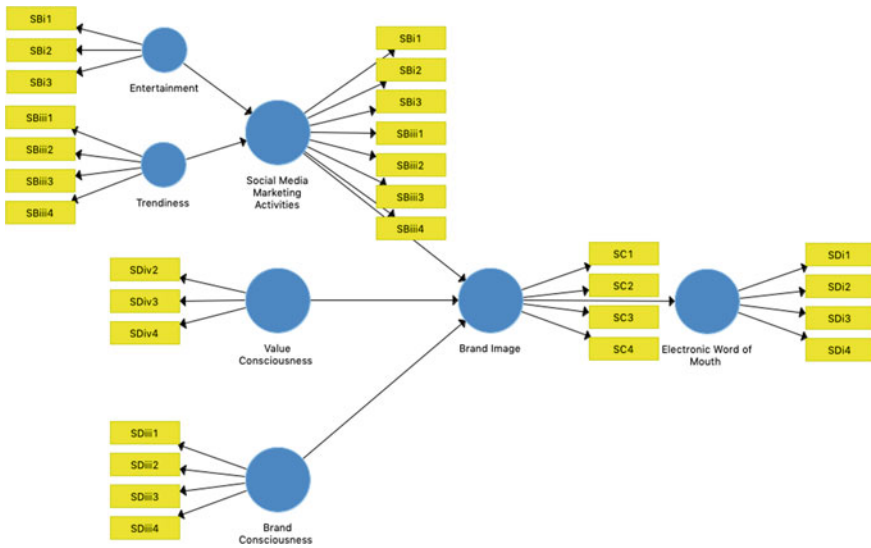


Fig. 1 The propose model

3 Research Methodology

3.1 Sample Size

The respondent who participated in this study was a passenger who waited for their flight at SIP Airport, Kelantan, Malaysia. As suggested by G-Power tool, a minimum sample for this study was 77 respondents, however a group of researcher who worked for this research managed to collect 420 respondents. Apart from 420 completed questionnaire, 20 questionnaire were rejected due to the filter questions which shown that the airline passengers did not check the airline's social media pages for promotion and news. Therefore, 400 questionnaires were usable for the next process which was data analysis.

3.2 Research Instrument

The survey was written in two languages: English and Bahasa Melayu. This study hired a professional translator to translate the questionnaire in Bahasa Melayu. The items in this study were modified from Seo and Park (2018) and Ismail (2017) and amended based on the results of the pilot survey. For all variables, a five-point Likert scale (1 to 5, from "strongly disagree" to "strongly agree") was applied to quantify the effectiveness of SMMA, as recommended by Jansen et al. (2009).

3.3 Data Analysis Method

SPSS version 21.0 was used to code the data and then examined using SmartPLS. Partial least squares equation modelling is a variance-based structural equation modelling (SEM) technique that was used to test the hypotheses. Hair et al. (2011) stated that PLS-SEM is a causal modelling technique that provides the highest variance of the dependent latent constructs. This method allows the researchers to indirectly include latent variables that are measured by manifest variables or items. PLS-SEM path modelling uses SmartPLS, which is important in accessing the confirmatory factor analysis which is more reliable and valid.

4 Results

4.1 Descriptive Analysis

Malay race showing a largest percentage in this study (74%), then Chinese (12.3%), thirdly Indians (8%), and lastly by other races (5%). A total of 224 respondents (majority) were females (56%), while the rest were males (44%). For occupation, most respondents were students (47%), followed by employees (32.3%), and self-employed individuals (20.8%). Most of the respondents (69.3%) were between the ages of 21 to 30. In term of airline brands in Malaysia, (71.8%) favoured AirAsia, followed by Malaysian Airlines (16.3%), Firefly (7.8%), and Malindo Air (4.3%). 61% of the respondents (244) stated that Facebook as their main preferences, followed by Google+ (16%) meanwhile 11.8% respondents stated that Instagram and 11.3% evoked Youtube as their favoured site (Table 1).

Table 1 Demographic profiles

	n	%		n	%
<i>Gender</i>			<i>Age</i>		
Male	176	44.0	21–30	277	69.3
Female	224	56.0	31–40	80	20.0
Total	400	100.0	41–50	29	7.3
			Above 51	14	3.5
<i>Occupation status</i>			Total	400	100.0
Full employed	129	32.3			
Self-employed	83	20.8	<i>Race</i>		
Student	188	47.0	Malay	299	74.8
Total	400	100.0	Chinese	49	12.3
			Indian	32	8.0
<i>Social networking site</i>			Other	20	5.0
Facebook	244	61.0	Total	400	100.0
Instagram	47	11.8	<i>Airline Brands</i>		
Youtube	45	11.3	AirAsia Airline	287	71.8
Google+	64	16.0	Malaysia Airline	65	16.3
Total	400	100.0	FireFly	31	7.8
			Malindo Air	17	4.3
			Total	400	100.0

4.2 Reliability and Validity

The Cronbach’s alpha values for entertainment, trendiness, SMMAC, VACONS, BRCONS, BRIMA, and eWOM which are exceed than 0.7, which confirmed the reliability of the items as shown in Table 2. Additionally, the composite reliability (CR) are more than 0.8 as shown in Table 2. This is the proof that all indicators are reliable as suggested by Hair et al. (2019). Moreover, the *DGrho* values for all items are exceed than 0.7, indicating adequate reliability across the items of the study. All the variables indicating that the AVE values are higher than 0.50, which indicate acceptable convergent validity (see Table 2). Moreover, Table 3 shows that all loadings are greater than their cross-loadings, which confirmed the discriminant validity of all items (Hair et al. 2019). The Fornell-Larcker criterion was applied to test the discriminant validity. The AVE values of all constructs for each indicator are higher than the variable’s highest squared correlation with other constructs, which

Table 2 Reliability and validity

Variables	No. Items	Mean	SD	CA	DG rho	CR	AVE	VIF
ENTE	3	4.0517	0.70807	0.793	0.794	0.879	0.708	1.475
TRND	4	4.0356	0.64682	0.801	0.804	0.870	0.626	1.475
SMMAC	7	4.0425	0.59371	0.845	0.848	0.883	0.519	1.492
VACONS	3	4.2546	0.58832	0.730	0.743	0.846	0.648	1.386
BRCONS	4	4.0975	0.68106	0.800	0.805	0.869	0.625	1.298
BRIMA	4	4.1194	0.61260	0.786	0.787	0.862	0.609	1.000
eWOM	4	4.0575	0.66307	0.824	0.834	0.883	0.655	

Note: ENTE Entertainment; TRND Trendiness; SMMAC Social Media Marketing Activities; VACONS Value Consciousness; BRCONS: Brand Consciousness; BRIMA Brand Image; eWOM Electronic Word of Mouth; SD Standard Deviation; CA Cronbach’s Alpha; DG rho - Dillon-Goldstein’s rho; CR Composite Reliability; AVE Average Variance Extracted; VIF Variance Inflation Factor

Source Author’s data analysis

Table 3 Loadings and cross-loading

	ENTE	TRND	SMMAC	VACONS	BRCONS	BRIMA	eWOM
ENTE—Item 1	0.859	0.496	0.738	0.392	0.248	0.449	0.381
ENTE—Item 2	0.856	0.469	0.718	0.263	0.259	0.405	0.363
ENTE—Item 3	0.808	0.466	0.694	0.351	0.295	0.433	0.424
TRND—Item 1	0.445	0.782	0.713	0.335	0.369	0.424	0.379
TRND—Item 2	0.444	0.784	0.717	0.334	0.328	0.471	0.472
TRND—Item 3	0.534	0.828	0.792	0.480	0.414	0.578	0.499
TRND—Item 4	0.360	0.769	0.665	0.353	0.332	0.414	0.379
VACONS—Item1	0.312	0.355	0.380	0.768	0.318	0.326	0.306

(continued)

Table 3 (continued)

	ENTE	TRND	SMMAC	VACONS	BRCONS	BRIMA	eWOM
VACONS—Item 2	0.358	0.413	0.439	<i>0.842</i>	0.305	0.416	0.367
VACONS—Item 3	0.287	0.382	0.384	<i>0.803</i>	0.280	0.337	0.314
BRCONS—Item 1	0.293	0.408	0.404	0.357	<i>0.804</i>	0.380	0.404
BRCONS—Item 2	0.171	0.343	0.302	0.283	<i>0.735</i>	0.308	0.374
BRCONS—Item 3	0.262	0.345	0.349	0.290	<i>0.814</i>	0.348	0.418
BRCONS—Item 4	0.265	0.349	0.352	0.248	<i>0.806</i>	0.374	0.395
BRIMA—Item 1	0.436	0.489	0.525	0.353	0.380	<i>0.778</i>	0.432
BRIMA—Item 2	0.430	0.481	0.517	0.331	0.313	<i>0.765</i>	0.407
BRIMA—Item 3	0.384	0.479	0.494	0.402	0.314	<i>0.793</i>	0.489
BRIMA—Item 4	0.343	0.426	0.440	0.320	0.391	<i>0.785</i>	0.492
eWOM—Item 1	0.353	0.434	0.450	0.305	0.468	0.429	<i>0.772</i>
eWOM—Item 2	0.427	0.383	0.454	0.305	0.406	0.464	<i>0.804</i>
eWOM—Item 3	0.377	0.500	0.504	0.394	0.402	0.544	<i>0.866</i>
eWOM—Item 4	0.339	0.457	0.457	0.318	0.360	0.443	<i>0.793</i>

Fornell-Larcker Criterion

ENTE	0.841						
TRND	0.567	0.791					
SMMAC	0.852	0.915	0.720				
VACONS	0.399	0.478	0.501	0.805			
BRCONS	0.317	0.458	0.447	0.373	0.791		
BRIMA	0.510	0.600	0.633	0.451	0.448	0.780	
eWOM	0.462	0.549	0.577	0.411	0.503	0.584	0.809

Heterotrait-Monotrait Ratio (HTMT)

ENTE	–						
TRND	0.707	–					
SMMAC	1.044	1.107	–				
VACONS	0.521	0.618	0.631	–			
BRCONS	0.395	0.569	0.540	0.489	–		
BRIMA	0.647	0.752	0.774	0.589	0.562	–	
eWOM	0.573	0.671	0.688	0.523	0.623	0.721	–

Note: ENTE Entertainment; TRND Trendiness; SMMAC Social Media Marketing Activities; VACONS Value Consciousness; BRCONS Brand Consciousness; BRIMA Brand Image; eWOM: Electronic Word of Mouth

(2) The italic values in the matrix above are the item loadings and others are cross-loadings

Source Author’s data analysis

suggested adequate discriminant validity. Heterotrait–Monotrait Ratio (HTMT) is confirmed that there was no evidence of the lack of discriminant validity in the dataset of the study. The variance inflation factors (VIF) was done for multicollinearity wherein the values were lower than 1.5, which suggested no multicollinearity issue across the constructs of this study.

4.3 Hierarchical Components Analysis

To determine the SMMAC as second-order construct, this research used entertainment and trendiness as first-order constructs (dimensions). Each first-order construct was predicted to have a positive and significant effect on its corresponding second-order construct. To investigate the higher order constructs, a hierarchical components model with repeated indicators was applied (Hair et al. 2013; Lowry and Gaskin 2014). Table 4 shows that entertainment and trendiness have a substantial beneficial impact on SMMAC among Malaysian airline passengers (p -value 0.05). Trendiness has a greater impact on SMMA than the other two factors, as evidenced by its higher beta value.

4.4 Path Analysis

SMMAC has a positive effect (Beta = 0.481; $t = 9.366$; $p = 0.000$) on BRIMA (at less than 5% significance level) among the airline passengers in Malaysia. Furthermore, VACONS also indicates a positive significant effect (Beta = 0.143; $t = 3.079$; $p = 0.001$) on BRIMA. Furthermore, BRCONS has a significant positive effect (Beta = 0.179; $t = 3.893$; $p = 0.000$) on BRIMA. Lastly, BRIMA shows a significant positive influence (Beta = 0.584; $t = 13.166$; $p = 0.000$) on eWOM across on all samples.

In term of the effect sizes (f^2) as shown in Table 4, SMMAC shows a medium to large effect on BRIMA. VACONS has small effects on BRIM, whereas BRCONS has a small to medium influence on BRIMA among the airline passengers in Malaysia. Besides that, BRIMA has significant influences on eWOM. The coefficient of determination (r^2) for the three endogenous latent variables (SMMAC, VACONS, and BRCONS) is 0.450 (see Table 4), which indicates a significant portion of variance (45.0%) in BRIMA that can be explained by the identified factors. The coefficient of determination (r^2) for eWOM is 0.341, indicating that BRIMA can explain 34.1% of the variance in eWOM.

Based on Table 4, the Q^2 value for BRIMA reflects the relative predictive relevance of predictor constructs (SMMAC, VACONS, and BRCONS) on the endogenous construct, which is greater than zero in suggesting the predictive relevance of the factors. For eWOM, the Q^2 value is greater than zero which shows the predictive relevance of the identified factors (i.e., BRIMA).

Table 4 Path coefficients

	Beta	CI - Min	CI - Max	t	p		Decision
<i>Reflective hierarchical model</i>							
H ₁	0.491	0.459	0.529	23.338	0.000		Accept
H ₂	0.636	0.599	0.671	30.164	0.000		Accept
	Beta	CI - Min	CI - Max	t	p	r ²	Q ²
<i>Factor effecting brand image</i>							
H ₃	0.481	0.390	0.569	9.366	0.000	0.282	Accept
H ₄	0.143	0.072	0.220	3.079	0.001	0.450	Accept
H ₅	0.179	0.115	0.259	3.893	0.000	0.045	Accept
<i>Factor effecting eWOM</i>							
H ₆	0.584	0.517	0.657	13.166	0.000	0.341	Accept
	Beta	CI - Min	CI - Max	t	p		Decision
<i>Mediating effect of brand image</i>							
M ₁	0.105	0.066	0.158	3.657	0.000		Mediation
M ₂	0.084	0.040	0.136	2.786	0.003		Mediation
M ₃	0.281	0.228	0.328	8.969	0.000		Mediation

Note: ENTE Entertainment; TRND Trendiness; SMMAC Social Media Marketing Activities; VACONS Value Consciousness; BRCONS Brand Consciousness; BRIMA Brand Image; eWOM Electronic Word of Mouth
 Source Author's data analysis

4.5 Mediating Effects

The objectives of this research was to examine the mediating effects of BRIMA. The result of the analysis is presented in Table 4 where it shows that SMMAC, VACONS, and BRCONS have positive indirect effect (p -values < 0.05) on eWOM across the sample of the study which validating the significant mediating effect of BRIMA on the relationships of SMMAC, VACONS, and BRCONS with eWOM among the airline passengers in Malaysia.

5 Discussions

eWOM is effective and it has various beneficial outcomes (Nuseir 2019). This study examined the effect of SMMAC, VACONS, and BRCONS, and BRIMA on eWOM to identify the determinants of eWOM among the airline passengers in Malaysia. The findings confirmed that entertainment and trendiness are significant dimensions of SMMAC (H_1 and H_2). Concurring with Liu et al. (2019), providing interesting and funny contents with the dissemination of trendy and latest information regarding the products and services can positively and significantly determine the marketing efforts for the consumers of social media. Moreover, the higher beta value from the Hierarchical Components Analysis concurs with Seo and Park (2018) in promoting trendiness as the key component of social media related activities by the different brands.

SMMAC provide a significantly positive effect on BRIMA among the Malaysian airline passengers (H_3). Aligned with past literatures, airline operators' marketing efforts using various social media channels can facilitate positive perceptions, associations, and the right set of beliefs on the brand (Damaiansyah et al. 2018; Seo and Park 2018). VACONS shows a significant and positive influence on BRIMA among the Malaysian airline passengers (H_4). It is believed that the airline passengers' value evaluation (trade-off between perceived brand value and customers' expectations) can determine their perception regarding the brand image of specific airlines.

For BRCONS, there is a positive influence on BRIMA across the sample of the study (H_5). Jansen et al. (2009) stated that the airline passengers' awareness regarding an airline brand, their ability to remember and differentiate brands could significantly influence the brand image of specific airline operators. Lastly, BRIMA shows a significant and positive influence on eWOM among the Malaysian airline passengers (H_5). Aligned with the past studies (Liu and Lee 2016; Nuseir 2019; Jansen et al. 2009; Seo and Park 2018), air travelers' perceptions regarding an airline brand can influence both negative and positive statements by former, present, or potential passengers using Internet or online channels such as emails, blogs, websites, forums, consumer reviews, and virtual communities.

The finding reveals that there is a significant indirect positive effect of SMMA on eWOM shows significant mediating effects of BRIMA on the relationships between

SMMAC and eWOM (M_1). Extending the argument of Damaiansyah et al. (2018), social media marketing efforts by airline brands play an important role in the airline passengers' response on BRIMA. The significant indirect positive effect of value consciousness on eWOM shows the significant mediating effects of brand image on the linkage between value consciousness and eWOM (M_2) among the Malaysian airline passengers. This result suggests that an increase in air passengers' perceived value can result in a favourable eWOM recommendation for specific airlines due to positive brand image. Finally, the significant indirect positive effect of BRCONS on eWOM portrays significant mediating effects of BRIMA on the association between BRCONS and eWOM (M_3) among the airline passengers in Malaysia. Concurring with Ismail (2017), the positive brand image can cause the brand consciousness of airline passengers to influence their airline brand loyalty through positive eWOM.

6 Conclusion

With the tremendous growth of Internet-based marketing, eWOM emerged as a powerful, immediate, and reliable channel in facilitating consumers to search for products or brand information, which can lead to purchasing decisions (Chu and Kim 2011; Jansen et al. 2009; Nuseir 2019). Hence, the main objective of this research is to investigate the effects of social media marketing activities, value consciousness, brand consciousness and brand image on eWOM among the airline passengers in Malaysia. Overall, the results validated all the hypotheses. Entrainment and trendiness are components of social media marketing efforts by the airline operators in Malaysia. Moreover, brand image is affected by the social media marketing activities with value consciousness and brand consciousness whereas brand image has a significant positive influence over eWOM. Furthermore, findings portray that airline brand image mediates the effects of social media marketing activities, value consciousness, and brand consciousness on eWOM among the airline passengers in Malaysia.

This study contributed to the theoretical insights to link between social media, value evaluations, brand awareness, brand image, and eWOM in the context of the airline industry. Hence, this study can substantially extend the literature on e-marketing management. Moreover, it enriched the marketing literature regarding customer engagement by assessing the impact of identified determinants on brand image and eWOM in emerging economies using Malaysia as the data source. In practical grounds, this study has significant applications for policymakers to formulate effectual social media relevant regulations that can encourage more people to engage in eWOM. Understanding variables that affect consumers' eWOM positively can help marketers to identify, device, and incorporate policies and programs to improve customer engagement as an integral part of organisational success. This study can guide marketers on the significance of eWOM as a valuable marketing instrument and employ it strategically to attract new customers while retaining the existing ones.

Based on the results, airline companies should provide entertaining and trendy contents to make viral marketing operations using social media platforms. Entities

in the industry can leverage on social media marketing activities to improve their brand image for better customers' responses. Airline marketing strategy for airline passengers and passengers should consider the individuals' value evaluation process regarding their brand to create a value that benefits both customers and the brand. Finally, airline operators can work to make their potential customer in becoming more aware or conscious of their brand, which results in improved brand image and better customer engagement through eWOM. In terms of limitations, the findings of this study did not identify or provide an exhaustive list of underpinning factors that capture customers' eWOM within the dynamic and competitive environment of air transportation. The conclusions may not be generalizable because this study only selected airline passengers from one airport. Hence, future studies should accommodate a more inclusive and larger sample to overcome this limitation. Future research can test the applicability of the current research model in dissimilar contexts to provide new managerial insights to detect priorities regarding customer needs and engagement in service industries.

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Leveraging Digital Marketing to Empower SME Competency: A Conceptual Paper



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Abstract Due to the spread of the virus Covid 19, small-medium entrepreneurs (SMEs) are facing critical conditions in sustaining their business. Huge transformation towards digital business is an alternative to support the operations of the business. With a good application, digital marketing allows entrepreneurs to extend their target market and increase the efficiency of communicating with their customers. However, SMEs seem to be left behind with a low usage rate of digital marketing tools. Considering this, the purpose of the study is to review past literature on the adoption of digital marketing and its impact on SMEs performance. Diffusion of innovation theory was discussed to describe how the adoption of technology with the intervention of digital marketing could boost the efficiency of SMEs. Three digital marketing tools that consist of website interaction, social media, and e-commerce have been found can leverage SMEs competencies. The results of this study provide a direction for future research to leverage the adoption of digital marketing tools among SMEs. Perhaps, this study can increase the awareness of SMEs to accept and adopt digital marketing in their business operations. This study is also relevant to the policymakers and public universities to conduct training on specific digital marketing tools to empower the performance of SMEs.

Keywords Digital marketing · Website interaction · Social media · E-commerce

1 Introduction

The overwhelming contagious of coronavirus (Covid 19) that spread around the world has forced most countries to impose the closure of most business operations except the essential businesses. In Malaysia, the first movement order control has given a tremendous impact on business operations where the business sales revenues fall up to 25% (Kuriakose and Tran 2020). The collapse of many economic activities has resulted in many entrepreneurs lose their source of income. Large and profitable

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corporations such as Air Asia have also reported unexpected losses (Nikkei Asia 2021). Significant impacts also affect small entrepreneurs who do business on a small scale and relying on customers who stop by their roadside premises. Although they are given financial assistance by the government with various incentives such as the Hiring Incentive Program (PENJANA), their source of income is still severely affected. In this situation, most entrepreneurs received a wake-up call to practice digital marketing tools in their business operations due to the traditional way seems impossible for them to interact with the customers.

E-commerce is one of the alternatives that can be applied by small businesses to ensure business sustainability in the long run. With the availability of the Internet, most entrepreneurs can make engagement with their customers and reach a larger target market. Statistics showed that Malaysia's e-commerce sales reached up to 4 billion US dollars in 2020 (eCommerceDB, 2020). With the current situation, high utilization of e-commerce can assist entrepreneurs to survive in their business. Therefore, it is urgent to practice appropriate digital marketing tools to reach larger target markets and increase the effectiveness and efficiency of business operations.

In Malaysia, SME contribute up to 98.5% of business establishments that equivalent to 920,624 businesses (SME Corp Malaysia, 2021). SME is the backbone of Malaysia's economy; therefore, the fall of these businesses gives a tremendous impact on Malaysia's economy. The adoption in digital business between SMEs is slightly poor and causes their struggle to survive during the current situation (Tong and Gong 2020). It was proven that high utilization of digital marketing gives more benefits to SME that suffer from resource constraints to increase the quality of business transactions as well as communication (Li et al. 2018; Olvera-Lobo and Castillo-Rodriguez 2018). Considering this, the purpose of this study is to review the literature on the adaptation of digital marketing that can leverage SME's business operations in a turbulent environment. Firstly, SME background in Malaysia is discussed, followed by the literature review on the adoption of digital marketing between SMEs and discussion on the proposing conceptual framework. Lastly, a conclusion is derived at the end of the study.

2 SMEs in Malaysia

SME industry in Malaysia is governed by SME Corp. Malaysia is a central coordinating agency that structures overall policies and strategies for SME and coordinates the implementation of SME development programs throughout Malaysia. All SME in Malaysia are required to register with the Suruhanjaya Syarikat Malaysia (SSM) or other equivalent bodies and fulfill the conditions to ensure their qualification as SMEs. The conditions with regards to qualifying criteria consist of the type of establishment and shareholding structure. For manufacturing companies, the sales turnover for the business must not exceed RM50 million or full-time employees not exceeding 200 workers. Meanwhile, for services and other sectors, the sales turnover

for the business must not exceed RM20 million, or the number of full-time workers does not exceed 75 workers (SME Corp Malaysia 2021).

The hit of pandemic Covid 19 forced most businesses to conduct online business to reach their customers. However, SME entrepreneurs showed a huge gap in adopting digital marketing in their business operations (Tong and Gong, 2020) that cause most of them are struggling to sustain and facing a huge loss. The adoption of digital marketing among SMEs is mostly conducted at the front-end computing devices and connectivity, which is below 85% and only 14% operated in back-end business processes such as inventory management. Besides, the statistic has shown 11% of SME adopt digital technology in the process of order fulfillment software. Additionally, only 54% SME in Malaysia have used cloud computing and data analytic as compared to SME in Singapore that recorded 85% of the usage rate (Tong and Gong 2020b). A huge gap between Malaysia and Singapore showed that SME in Malaysia are still left behind in adopting digital marketing techniques in their business operations. Considering this matter, this study attempts to highlight the importance of digital marketing implementation towards SME and its advantages to bridge the gap in this digital economy by reviewing past literature with regards to digital marketing adoption among SMEs.

2.1 Diffusion of Innovation Theory

Diffusion of Innovation Theory was developed to focus on the assumption of how new technology and other advancements spread throughout societies and cultures, from introduction to wider adoption (Rogers 2003). This theory explained the reasons of new ideas and practices were adopted at a specific time that potentially being used in the future. Diffusion can be described as a social process that emerges when an individual response to an innovation idea (Dearing and Cox 2018). The concept of diffusion involved the adoption of a new idea that was later being implemented in an organization.

Several attributes have been constructed in this theory that includes relative advantage, complexity, compatibility, trialability, and observability. Relative advantage reflects on how innovation can provide more benefits than previous generations (Moore and Benbasat 1991) and complexity refers to an innovation that was difficult to understand and use (Cheung et al. 2000). Compatibility refers to the innovation where users' current values, beliefs, and attitudes were consistent with their previous experience (Chen et al. 2004). Meanwhile, trialability was referred to the number of tests were taken before the technology is adapted and observability refers to how innovation was exposed to one community and the benefits can be detected and communicated (Rogers 2003).

Prior research indicated that the relative advantage of innovation was significantly related to the rate of adoption (Moore and Benbasat 1991). Furthermore, it was found that all innovation attributes were able to influence the adoption of information and communication technologies (ICTs) in business sectors (Tan et al. 2009). However,

complexity was found not significantly related to e-marketing orientation due to technologies were highly accessible by most SME (Shaltoni et al. 2018). Then, it was suggested that SME should align their motivations and attitudes to adopt e-marketing in their businesses (Fillis et al. 2004). Besides, strong support from the top management is crucial to direct SME intention to adopt mobile marketing (Maduku et al. 2016). Therefore, in the context of digital marketing adoption, four innovation attributes that consist of relative advantage, compatibility, trialability, and observability are considered important in leveraging digital marketing tools among SMEs.

3 Digital Marketing Adoption in SMEs

Digital marketing can be considered as another approach in grasping a large customers' attention boosted by the digital elements or techniques (Jarvinen et al. 2012; Liu et al. 2011; Rowley 2008). Wider communication coverage makes digital marketing become a more prevalent method in communicating and delivering information regarding business activities as compared to the traditional way. Digital marketing provides both communication methods either one-way communication such as websites and e-mail and two-way communications that consist of social media platforms that allow customers to give responses to any marketing messages delivered by a company (Taiminen and Karjaluoto 2015). Prior research has examined the adoption of digital marketing in SME operations from both internal (management) and external (environmental factors and infrastructure) perspectives are low in their businesses despite its advantages (Chen 2020; Lanyi et al. 2021; Shaltoni et al. 2018). Perhaps, this study can dig more benefits of digital marketing tools and their opportunities to enhance the adoption among SMEs.

The application of digital marketing techniques can be categorized into four classifications that consist of nascent, emerging, connected, and multi-moment stages (Corr 2020). Nascent is categorized as a company that just started using digital marketing in their business, whereas emerging is classified as a company that already recognized the importance of data sharing. Besides, the connection phase is stated for the company that has integrated via online and offline platforms and the multi-moment stage is the company that already has dynamic personalized experiences with digital marketing. By referring to these classifications, the maturity level of SME depends on how they grab the opportunities in utilizing the Internet in their business operations (The Growth Hub 2020).

The usage of digital marketing techniques is not only limited to website availability and e-mail; however, it is also related to the usage of ICT in social media applications and e-customer relationship management (e-CRM) solutions (Shaltoni, et al. 2018). The emergence of various digital marketing tools provides more advantages for the business's competencies. The introduction of web technologies offers a new perspective for the business to deliver effective responses to the market (Lanyi et al. 2021). Then, the proliferation of the Industry 4.0 gives high exposure to social

media platforms to take place as the main medium in marketing. The combinations of the company's website, social media, and physical stores create stronger brand experiences among consumers (Chen 2020). Besides, a new digital paradigm that is electronic commerce (e-commerce) provides huge opportunities for business success in a current business environment (Ong et al. 2020). Furthermore, proper execution of digital marketing channels is important to enhance the brand recognition among the consumers and increase SME competitiveness to grow in the future (Taiminen and Karjaluoto 2015).

Based on the previous literature, it was proved that proper adoption of digital marketing tools could increase the efficiency of the business as well as improve the level of competency in a turbulent business environment. Entrepreneurs who fail to exploit the opportunities of adopting digital marketing will suffer from gaining a competitive advantage in the future (Tong and Gong 2020b). Therefore, there is a need for SME entrepreneurs to leverage digital marketing tools to ensure their sustainability during this pandemic.

4 Discussion

The outbreak of COVID-19 gives a serious impact on local industries, especially the SMEs. Most entrepreneurs are facing difficulty to operate their businesses since the movement order control order must limit their operations immediately. Thus, a huge transformation from face-to-face communication into virtual communication is needed to ensure the business operations still can be conducted even with no physical contact between the entrepreneurs and their consumers. The study is carried out to review past literature on the adoption of digital marketing among SMEs.

SME were chosen as the context of the study since this industry was the economic backbone in most countries around the world. For example, in Malaysia, statistics showed that 98.5% of business establishments were SME (SME Corp Malaysia 2021) and more than 85% of SME were reported in Canada (OECD 2017). Additionally, statistics showed that more than 80% of world businesses were SME with European Union recorded more than 20 million SME (European Commission 2013). With majority business establishments, the falls of SME during pandemic Covid-19 give tremendous damage and impact towards economies of many countries as well as in Malaysia. Past studies had proved that the utilization of digital marketing can increase the efficiency of SME (Li et al. 2018; Olvera-Lobo and Castillo-Rodriguez 2018). However, the rate of digital marketing adoption was very low among SME in Malaysia and presented a huge gap as compared to other countries such as Singapore and resulting SME in Malaysia struggling to sustain and faced a huge loss during this pandemic (Tong and Gong 2020). Hence, to alleviate this matter, there is a need to understand the concept of digital marketing and identify several digital marketing tools that are suitable for SMEs.

Before identifying suitable digital marketing tools for SMEs, understand the underlying theory can assist SME to grasp the process of the adaptation of digital

marketing in their business operations. The theoretical justifications allow a better understanding of the issues of adoption of digital marketing and the process that need to be considered by SME before implementing specific tools in their business. Therefore, with the support of diffusion of innovation theory, four attributes of innovation play a major role in influencing entrepreneurs to adopt specific digital marketing tools according to their business objectives. The innovation attributes consist of relative advantage, perceived compatibility, perceived triability, and perceived observability. All these four attributes explain the process of accepting a new idea and technology, how to operate it in their businesses, and measuring the results towards business competencies.

Relative advantage explained the benefits of technologies towards a business operation. In the context of SMEs, entrepreneurs should understand the usage of digital marketing tools and how to operate them to reach a bigger target market. Furthermore, perceived compatibility refers to how innovation can bring crucial changes in business where the adaptation can ease multiple business operations effectively and efficiently. Thus, with proper execution of digital marketing give many benefits to entrepreneurs to increase their competency and wider their communication coverage with the consumers. Perceived trialability discussing the number of attempts that has been carried out by the entrepreneurs before executing the right digital marketing tools towards the market. Here, after going through several attempts, the entrepreneurs will choose the right tools that make them comfortable to conduct and receive a positive response from their consumers. The last attribute which is perceived observability describes how the entrepreneurs applied digital marketing tools and observe the results over a specific period. The success of the adoption of the right digital marketing tools is gathered from the observation stage. Thus, all these four attributes were needed by entrepreneurs to apply specific digital marketing tools in their business operations. Based on theoretical justification, this study proposes a conceptual framework as a direction for future research to further investigate this issue and proceed with the data collection process to gather the respond from SMEs. Figure 1 presents four attributes of innovation that influence the adoption of digital marketing tools that results in positive SME competency.

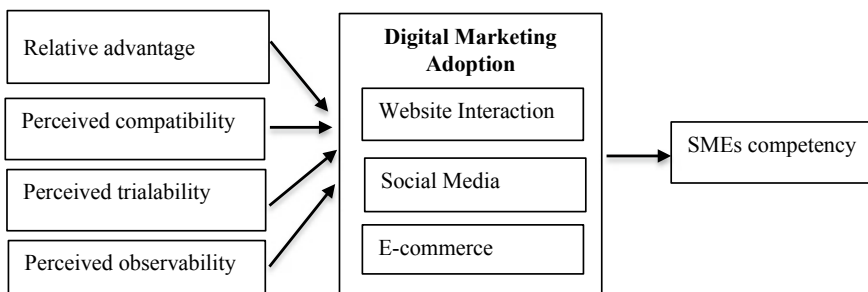


Fig. 1 Proposed conceptual framework

According to the review of past empirical research, three digital marketing tools have been found as the most significant and able to enhance the competency level of SME to engage with their consumers and enlarge their target market. The interaction of the website can enhance the visibility of the business and become a medium for information delivery regarding products, brands, and other issues related to the business towards the target market. The business website delivered a significant role in presenting SME operations, its products, and business activities that give positive expectation and feedback from their target market (Kriechbaumer and Christodoulidou 2014; Kung and Zhang 2011; Toma and Marinescu 2012). However, Malaysia showed a small percentage regarding website availability where only 37.8% of businesses establish their website (Tong and Gong 2020b). The existence of a website can embrace SME competency to maintain their competitiveness in the challenging business environment (Lanyi et al. 2021). Therefore, formulating website interaction is of paramount importance in reaching SME consumers and communicating with them.

Additionally, the usage of social media becomes a powerful medium in transforming the behavior of consumers (Kaplan and Haenlein 2010). It was reported that Malaysian online users reached approximately 25.08 million in 2018 where social media become a preferred medium in consumer's purchase decisions as compared to brick and mortar services (Malaysia e-commerce 2018). With the huge acceptance of social media in today's communication, the utilization of social media is perfectly suitable for SME to communicate with their prospects and enlarge the target market regardless of their location. Thus, SME should learn several social media platforms to reach their consumers either through Facebook, Instagram, WhatsApp, and others.

The emergence of e-commerce arrived at the end of the twentieth century (Lanyi et al. 2021). The revolution of digital sales and web strategy has developed the platform of e-commerce and online services (Berman and Bell 2011). E-commerce provides flexibility in the process of selling and purchasing for SME and consumers. This includes computerized ordering systems and a payment gateway. The security element in e-commerce was able to increase the trustworthiness among consumers (Ramanathan 2010). Furthermore, security was found to be an important factor for consumers in online transactions and should thus be taken seriously by SME website planners (Chen and Zhang 2013). Therefore, due to e-commerce benefits, SME should transform their traditional business operation into e-commerce activities to increase their competency.

5 Conclusion

Lack of digital marketing adoption between SMEs gives a direction for this study to conduct a literature review on digital marketing adoption among SME entrepreneurs. The review showed that the proper implementation of digital marketing tools could help entrepreneurs to survive in the current business environment (Chen 2020; Lanyi et al. 2021; Ong et al. 2020). Furthermore, with the adaptation of diffusion of innovation theory, four innovation attributes (relative advantage, perceived compatibility,

perceived trialability, and perceived observability) have been found as important in adopting the technology of digital marketing to leverage SME competencies. The motivation of this theory relies on the acceptance of SME to go through the process of learning digital marketing and examine the results towards their competencies.

In conclusion, SME are urged to address technological gaps more specifically on the adoption of digital marketing tools in their business. Subsequently, the current trends showed that leveraging digital marketing could empower SME competencies during this pandemic. Therefore, it is suggested to SME in Malaysia to gain knowledge on digital marketing applications and learn how to develop a proper business website, the right posting in social media, and e-commerce application to ensure they still can communicate with their consumers and continuously engage with them.

As for the recommendations, future research should be conducted to apply the proposed conceptual framework and proceed with empirical data to ensure the significance and reliability of this framework towards SME competencies. Besides, support from the government and public universities is needed to give training on these digital marketing tools to educate all SME and enhance their knowledge. This is supported by past studies indicated that good supports from government and academic institutions can increase the efficiency of SME in practicing new technologies in their business (Kriechbaumer and Christodoulidou 2014). Hence, proper training can empower the skills of SME to increase their competency in the future.

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Supply Chain Quality Management Practices and Blockchain Technology

A Systematic Review of the Use of Blockchain in Higher Education



Bahaa Razia

Abstract The purpose of this paper is to present a systematic review in order to identify and analyse applicable blockchain technology research associated with the field of higher education. Terms including ‘college’ and ‘blockchain’ were used to assist in narrowing the scope of the research. In addition, well-known scientific databases and search engines have been used to conduct the search, these include scopes, springer, science direct, ResearchGate and science open. In the field of information technology and education, these chosen scientific databases and search engines index high quality and high impact articles. The focus of the research was only related to high quality and influential journal publications that had been found in the books, magazines, international journals, seminars and proceedings of conferences. This paper presents a vital review of blockchain technology and delves into its value in the of education and its related aspects. This study will help researchers and practitioners in identifying the areas where blockchain can be adopted and implemented effectively. A summary of possible challenges faced when implementing the technology of blockchain in higher education especially in universities. Also, this study summarises the application of blockchain technology in education.

Keywords Blockchain · Higher education · Smart contract · Challenges

1 Introduction

Within the higher education sector, the Application of emerging technologies, such as the Internet and the World Wide Web has seen continuous and significant improvement. In order to enhance connectivity, share knowledge, increase collaboration, and encourage active learning, web-based applications are being greatly applied. The applications of Blockchain for education are relatively recent, and the number of

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blockchain-based products is currently limited. Nevertheless, blockchain technology has the ability to provide several opportunities and benefits.

In 2008, Blockchain technology was first created for the digital payment system Bitcoin (Antonopoulos 2017). In many industries, educational sectors and research organisations around the world, this new technology has been developed and applied, and it has become the subject of various intense research in many sectors (Arndt 2018; Chen et al. 2018; Walport 2016). The main purpose of Blockchain is to solve the issue of a “trusted” central authority which is responsible for mediating transactions among various parties. Centralisation in the blockchain is considered to be as vital factor that could lead to security problems including cost and other problem such as being a single point of failure. However, The decentralised nature of blockchain technology can increase level of trust in a system between parties and assist in removing the need for a trusted third or external party to conduct transactions between them. The blockchain technology has the ability to store each transaction occur between different parties as a distributed ledger. A database that holds a record of all transactions is replicated inside a blockchain network and shared with all involved parties (Fig. 1).

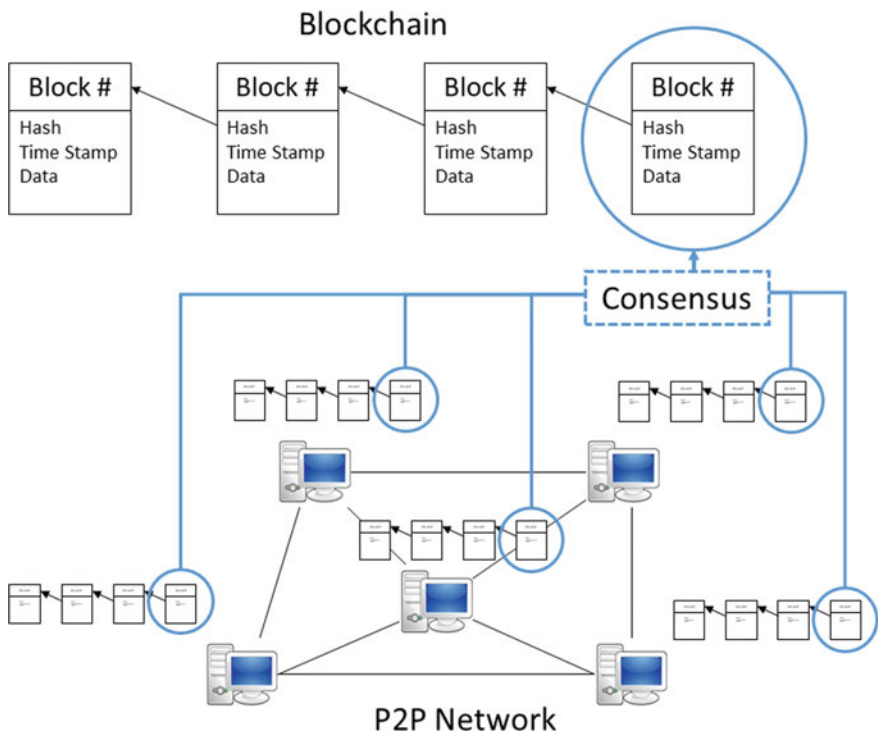


Fig. 1 Key elements of blockchain network

The blockchain technology is also able to execute smart agreements (e.g., contracts) between several parties (executable code) (Buterin 2013). These smart contracts can increase the efficacy of blockchain solutions and enable the implementation of distributed applications for different purposes in various fields. Smart contracts can be used within the education sector in order to create flexible distributed solutions for the benefit of all online learning system members, including teaching staff, and administrative staff and students.

For instance, students and educational institutions may be able to enter into more customised digital agreements that define time frames, assignment requirements and grading criteria (Chen et al. 2018; AlNoaimi, et al. 2021). There are a number of features of blockchain technology which make it worthy of further exploration to improve educational sectors. These feature include immutability, reliability, availability and trust. Immutability: because of the encryption that secures and links blocks together and the chronological order that data is stored, the data stored on the blockchain is considered to be tamper-proof. Reliability: the decentralised nature of the network ensures that it is more efficient than centralised networks in terms of service. There is no central authority exists and may fail. Information openness is a rising requirement. With blockchain technology, highly transparent, decentralised data storage can be developed. Availability: the distributed nature of the technology of the blockchain ensures that data is shared more efficiently, stored closer and accessed easily by data owners. Trust: in this situation blockchain technology can eliminate the need to allow contact between different parties through a trusted third-party service provider. Therefore, this review mainly aims to examine the research aspects that have been investigated in the domain of education in the sense of smart contract technology and blockchain technology, in addition to identify essential issues that need to be investigated in future projects. Therefore, a systematic analysis approach is selected in order to achieve this aim (Buterin 2013). Using the science database, several academic papers and articles have been carefully explored n order to identify the most relevant papers that are related to the applications of blockchain in education sector. These processes help in providing a valuable information that will be used to understand the potential challenges and issues associating with blockchain technology for the future studies.

2 Literature Review

2.1 Blockchain Technology Overview

Information about blockchain technology and its related features is presented in this section. In addition, this section highlights examples of existing projects of educational blockchain, as well as a brief overview of smart contracts is given.

Blockchain technology is defined as a distributed database that stores the transactions done in an immutable, safe and secure way between different parties.

Blockchain can be defined as a peer to peer (P2P) network that allows peers (nodes) to manage the block and transaction exchange network in collaboration. All users in the peer to peer network have to store their own data on the blockchain, while synchronising all of their blocks based on a consensus model with other data stored by other users (Jirgensons et al. 2018). The consensus is, in fact, defined by the longest chain accepted by most of the peer nodes. For this reason, a third trusted party is not needed as the participants may directly communicate and send transactions among themselves.

The block is marked by a cryptographic hash, and each block references the previous block in the chain, which eventually generates a blockchain. Each block includes multiple transactions, and each block's maximum size differs according to the type of blockchain platform. In the chain, the blocks cannot be changed and are immutable, avoiding the double-spending issue (Chohan 2017; Andersen and Nielsen 2019). Historically, cryptocurrency, which is a digital currency based on peer to peer networks and cryptography, was the first blockchain generation. Mining, which is the method of attaching transaction data to the public ledger of previous blockchain transactions, is one of the principles incorporated into the blockchain technology. The mining process needs a miner on the blockchain network in order to create the new transactions block through gathering those transactions, and conducting a mathematical procedures in order to validate (e.g., verify) the new block and attaching it to the chain of previous blocks (Fig. 2).

By a consensus algorithm, the other miners' nodes in the blockchain network will test and verify the newly created blocks. (Chen et al. 2018) argue that the second

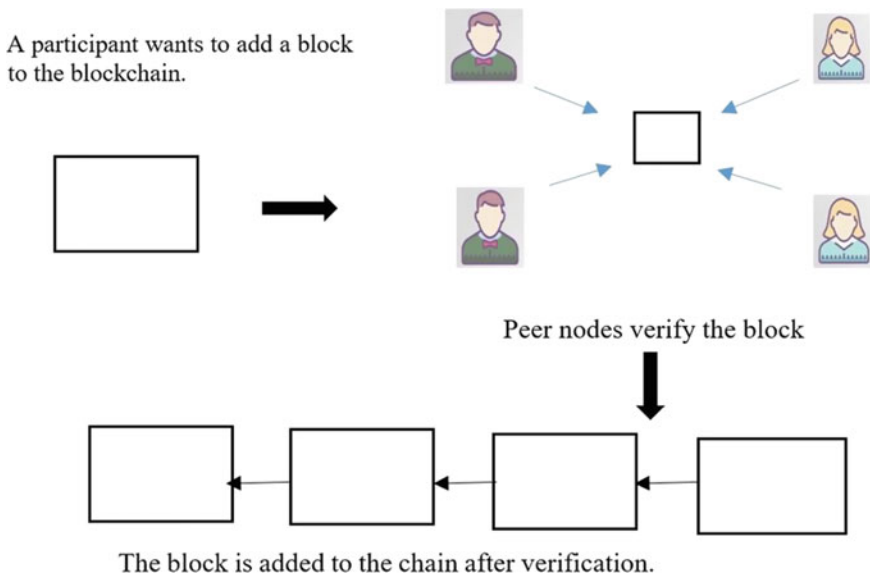


Fig. 2 Adding new block to the blockchain after verification

blockchain generation has become evident in the form of Ethereum. This assists in enabling distributed applications to be designed and implemented. The Ethereum blockchain enables on top of it to create smart contracts, and this has provided a great opportunity for researchers and practitioners to incorporate blockchain aspects into different fields.

In general, blockchain has been split into two key types: private and public blockchain (Chen et al. 2018; Razia et al. 2019). In public blockchain (e.g., Ethereum), participants are allowed to access and communicate in the network. In comparison, in private blockchain (e.g., Ripple), only participants with permissions can join and communicate in the network.

2.2 Smart Contracts

A smart contract applies to a stateful computer program of event-condition-action that is carried out by two or more participants that have no tacit trust between themselves (Molina-Jimenez et al. 2018). To explain this, it is a self-executed code conducted between two or more participants to apply conditions and roles (Antonopoulos 2017). There is not only a decrease in third-party costs within the transaction phase by the implementation of a smart contract utilising technologies related to blockchain, but also enhanced transaction stability and its security. A smart contract may divide into centralised or decentralised, which can be implemented in a centralised situation to operate off-chain or either in a decentralised situation to run on blockchain (Molina-Jimenez et al. 2018; Solaiman et al. 2020).

2.3 Applications for Smart Contracts and Blockchain Technology in Education

The role of blockchain technology and its applications in education sector has gained rising attention across many disciplines in recent years. In various ways and shapes, blockchain and smart contract technologies and their related aspects, are greatly involved in several fields especially in education. Up to now, however, education blockchains have been mainly used to record certificates and grades, little attention has been paid to the use of smart contracts and blockchains in order to create a learning process infrastructure. In education, the followings are the latest applications of smart contract and blockchain.

In education, there are other possible uses for blockchain and smart contracts technologies, such as for distributed file storage, online learning, student evaluations, payments, financing, digital rights protection, and identity management.

Table 1 Applications for smart contracts and blockchain technology in education

Application name	Explanation	Example
Digital certificate	These applications are designed to have better control on the certificates received by students and to minimise dependency on needing third party intermediaries (e.g., universities and employers) for holding, checking and validating qualifications and credentials of students	Open Blockchain (Chen et al. 2018) and the Blockcerts project (Curmi and Inguanez 2018)
Support services	These applications are intended to create a special Bitcoin-based cryptocurrency for the regulation of the educational products and services industry, (e.g. support services, participation in online courses, regulated studies)	Edgecoin (Shen and Xiao 2018)
Earnings	Such implementations connect learning to earnings. The blockchain technology is used in this case to store the studying hours or teaching and not the digital currency	The Ledger project (Wood 2014)

2.4 *The Impact of Covid-19 on Higher Education*

The global lockdown of educational institutions will result in severe interruptions in students' learning, disruptions in assessments, and the cancellation or substitution of public tests for qualifications. On an unproven and unprecedented scale, education is moving online. Student assessments are now online, resulting in a lot of trial, error and uncertainty for all involved. Many assessments have been delayed and others canceled. Importantly, these disruptions will not just be a short-term issue, but they will also have long-term effects for the impacted cohorts, increasing inequality. Many universities and colleges are replacing traditional tests with online evaluation tools in higher education. Because this is a new area for both teachers and students, assessments will almost certainly have a higher measurement error compared with normal times. Employers sort applicants based on educational credentials such as degree classifications and grade point averages (Piopiunik et al. 2020). As a result of the increased noise in candidates' signals, the matching efficiency for new graduates in the job market may be reduced, resulting in slower pay growth and greater job separation rates. This is expensive for both the person and society as a whole (Fredriksson et al. 2018).

3 Research Methodology

In this research, a systematic mapping approach was adopted and applied in order to achieve the aim of the research as well as explore various applications of blockchain especially in education sector (Petersen et al. 2008). The method used is defined in detail below (Fig. 3). A systematic mapping study is related to several processes of identifying, categorising, analysing existing relevant studies to the research topic (Eaganathan et al. 2019).

The main process steps of the systematic mapping approach are related to defining research questions, studying relevant papers, scanning of papers, identifying key words of abstracts as well as data extraction and classifications, and finally data analysis and mapping. There is an outcome for each process which leads to obtain the final outcome that assists in establishing the systematic map.

3.1 Definition of Research Questions (Scope of the Research)

The primary purpose of a comprehensive mapping analysis is to provide a description of a field of research and to classify the number, form and findings of research available within it. A secondary purpose may be to describe the forums where literature in the field has been written. The questions of this study have been identified in order to address the research aim as shown in Table 1.

3.2 Conducting Research for Primary Studies

In this process step, numerous of papers and articles have been identified by using search strings and browsing relevant journal publications and conference proceedings. To create an effective search strings, it is important to structure them in terms of comparison, populations, outcome and intervention (Kitchenham and Charters 2007). Terms including ‘college’ and ‘blockchain’ were used to assist in narrowing the scope of the research. In addition, well-known scientific databases and search engines have been used to conduct the search, these include scopes, springer, science

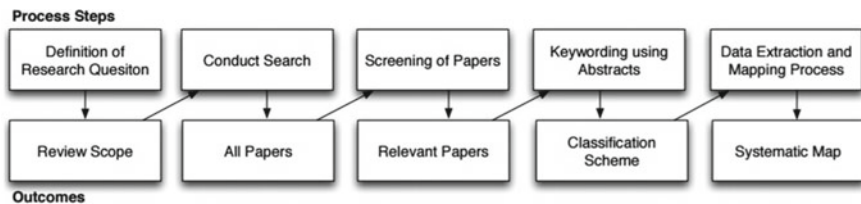


Fig. 3 The process of systematic mapping

direct, ResearchGate and science open. In the field of information technology and education, these chosen scientific databases and search engines index high quality and high impact articles. The focus of the research was only related to high quality and influential journal publications that had been found in the books, magazines, international journals, seminars and proceedings of conferences.

3.3 Screening of Papers for Exclusion and Inclusion

Exclusion and inclusion criteria are applied in order to exclude papers that are irrelevant to the research questions. Therefore, this study has followed the identified search criteria in order to screen the relevant papers and their results in blockchain technology especially in the domain of education (Forment et al. 2018). First step includes excluding irrelevant papers and journal publications based on their titles. In case of unclear title of the paper, then the abstract was explored and reviewed. In addition, non-english papers, grey literature (e.g., working papers, government documents), duplicates and papers without full text available were also excluded.

3.4 Abstract Key-wording (Classification Scheme)

During this stage, all relevant papers and journal publications were classified using the keyboarding criteria illustrated (Forment et al. 2018). Based on the abstract of the papers and their contribution, all possible keywords were identified. Therefore, the following figure shows a systematic process that have followed to create and describe the classification scheme as well as export information. These process assists in reducing the time required in developing the classification scheme and making sure that the scheme takes into consideration the existing studies (Fig. 4).

3.5 Data Extraction and Mapping of Selected Studies (Systematic Map)

During this stage, the actual data extraction takes place. This process aimed to collect the information required to address the research questions in this study. For this reason, Table 2 presents the designed criteria that have been applied in order to contain certain elements for examining the papers. This criteria piloted in a selection of papers and then extended to analyse the remainder of the papers in order to extract information. When performing data extraction, the classification scheme starts to evolving, this includes combining and separating existing categories or adding

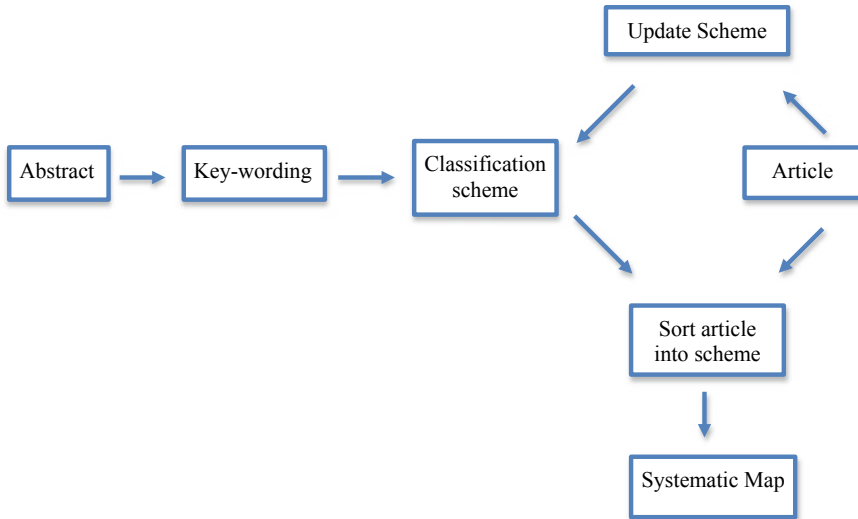


Fig. 4 The construction of classification scheme

Table 2 Research questions of this study

Number	Research question
1	Which journals include papers on blockchain in the domain of higher education?
2	What are the challenges that face blockchain and its applications in higher education?

new categories. To record the data extraction process, an Excel table was used. To summarise this, the following steps were followed to review the selected papers:

- 1-Title refers to the title of the chosen papers or journal publications.
- 2-Author(s) refers to the name of the research author(s).
- 3-Paper type includes journal, book chapter, workshop or conference paper.
- 4-Paper topic relates to the subject and topic area of the paper.
- 5-Publication date refers to year that the paper was published.
- 6-Publication location refers to place, country of journal, organisation or conference.
- 7-Paper purpose refers to the main aim of the paper.
- 8-Application implementation refers to potential implementation of the study.
- 9-Challenges relates to the possible and actual challenges that face the study.

4 Study Findings

This study has obtained 123 academic articles. However, 69 of them were irrelevant and therefore excluded based on the requirements of the first step of screening process. There are two reasons for omitting articles. First reason is related to the

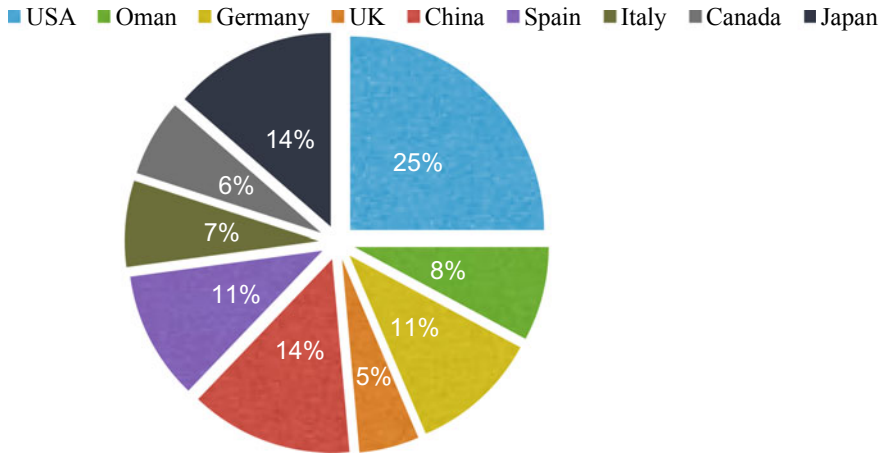


Fig. 5 Distribution of selected articles geographically

scope of the research which is concerning about blockchain technology and higher education field. As a result, all articles that were not directly linked with higher education have been neglected. Second reason is related to excluding articles that only addressed general features of blockchain and its relevant aspects. After that, 22 additional documents were rejected as duplicates. Therefore, 32 articles have been critically examined and analysed for achieving systematic mapping approach. The distribution of these 32 articles by the year of publication as follows: 4 articles in 2017, 11 articles in 2018, 15 articles in 2019 and 7 articles in 2020. All selected papers were published after 2016 which indicates that this is a new and a novel research area. It is imports to note that the number of published papers on this subject appears to increase every year, this reflects that there is a growing interest in the applications of higher education by blockchain and their related aspects (Fig. 5).

The previous figure shows the geographical distribution of the selected and examined articles in this study. This distribution of articles which is spread over 9 countries, indicates that international research focus has been paid to the adoption of blockchains technology in higher education and their related aspects. The highest number of publications is published in the United States by different universities or companies. Japan has the second greatest number of articles published in this domain. The remaining articles have been published in other nations.

As shown in Fig. 6, the majority of these selected documents with 46% have been published in journal articles. 34% of them were published in conference proceedings, 14% published in books and the remaining 6% were published in magazines. The Institute of Electrical and Electronics Engineering has the vast majority of publications in this study. The world’s largest technical professional organisation for the advancement of technology (IEEE) offers a broad range of quality publications that make it possible for technology professionals to share technical expertise and information. Other publications were related to technical and educational aspects.

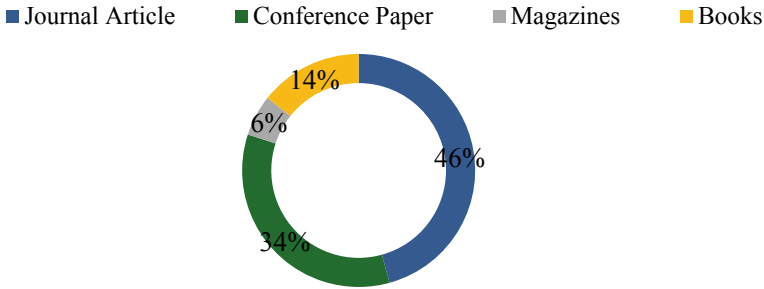


Fig. 6 Distribution of publication based on their type

Table 3 The application of blockchain technology in education

No	Value proposition	Example	Reference
1	Enhancing and motivating lifelong learning	BitDegree (tracking educational achievement and rewarding the parties engaged), ODEM (interaction between students and academic professionals), Open source framework	Liu et al. (2020); Ghaffar and Hussain (2019)
2	Certificates and identity management	Digital Credentials Consortium, Blockcerts, Open Source University	Chen et al. (2018); Curmi and Inguanez (2018)
3	Credit transfer	Storing records and transferring student credit across universities	Shen and Xiao (2018)
4	Admissions	Sharing admission procedures to allow students to apply for universities	Mori and Miwa (2019)
5	Student exams and assessments	Production of exams and assessments	Gesto and Gohari (2017); Wu et al. (2020)
6	Parchment	Generating certificates and assessing qualifications and processing programmes	Parchment (2021)

Table 3 summarises the possible challenges faced when implementing the technology of blockchain in higher education especially in universities (Table 4).

The previous table illustrates different applications of blockchain especially in higher education sectors. In this context, it has been argued that students and instructors are dissatisfied by many of the standard online learning resources that adversely affect involving learners effectively (Devine 2015). As a result, the OpenSource architecture of blockchain was examined as a future platform that help learners to obtain improvements to the current learning and teaching aspects. Another influential area is related to a platform called On-Demand Education Marketplace (ODEM). Using this

Table 4 Challenges facing blockchain in higher education

Number	Challenge	Reference
1	Motivation	(Liu et al. 2020; Liyuan et al. 2019; Ghaffar and Hussain 2019)
2	Scalability	(Juričić et al. 2019; Turkanović et al. 2018; Forment et al. 2018)
3	Blockchain usability	Mitchell et al. 2019; Han et al. 2018; Liu et al. 2018)
4	Immutability	(Vidal et al. 2019; Mitchell et al. 2019; Ghaffar and Hussain 2019)
5	Privacy and security	(Arndt and Guercio 2020; Han et al. 2018)
6	Market option	(Mori and Miwa 2019; Bore et al. 2017)
7	Innovation	(Liu et al. 2020; Juričić et al. 2019; Shen, and Xiao 2018)
8	Legal	(Finck 2019; Shah et al. 2019)

platform enables student to interact with academic professionals, as well as enabling and empowering students to exchange validated credentials on the blockchain in a secure digital world. The ODEM platform provides a great solutions for different parties including educational organisation, employers, learners and academic professionals through connecting these parties without any need for intermediaries. Another example for enhancing and motivating lifelong learning is called BitDegree, this online network provides users with learning rewards for completing tech courses or achieving learning goals, such as tokenised scholarships.

In the Digital Credentials Consortium network, some of the main advantages for learners would be: obtaining credentials digitally, students do not need to pay for transcripts, sharing students records in a secure way and having the ability to access to streamlined procedure in order to issue several credentials to single sources of learners. Blockcerts is a platform that allows education institutions within their programs to apply blockchain accreditations. On the Blockcerts platform, the journey for learners is considered to be simple and short. In this context students are able to manage, distribute and obtain credentials in a secure and an effective ways. Additionally, implementing open source university platform will assist users to future proposed job opportunity, and allow organisations to use the site look for eligible applicants.

In terms of exam and assessment, education institutions can blockchain technology in managing student assessment and examination. These processes of management help to produce some secure information that can be stored in blockchain database (e.g., student attendance, participation reports, exam score, exam details, assessment evaluation criteria). In this case, blockchain technology ensures that the data of participants is reliable and valid. As a result, the organisational confidence and trust will be achieved in the learning and teaching process in higher education.

In terms of credit transfer, organisations have the ability to store and transfer students credit across different universities in a secure way without a need for third

party. Another examples is related to admission, where universities help students and allow them to apply for multiple educational institutions through sharing the admissions procedures and their related aspects. Finally, parchment is considered as a form that assists in assessing qualifications, generating certificates and processing academy programmes. This allow learners, teachers and academic institutions to request and share their credentials and to have a discussion about the academic performance in a secure environment and simple way.

5 Discussion

The use of blockchain technology for higher education has been addressed with growing excitement based on the publishing trend. As there have been relatively few studies related to this research area, there is a need to conduct further research exploring the possible use of blockchain innovation in many sectors especially in education. Therefore, this study has eventually selected and critically analysed 32 research papers in order to address the research aim and the research questions. The aim of this paper was to present a systematic review in order to identify and analyse applicable blockchain technology research associated with the field of higher education. The paper focused on two key topics which are related to exploring state-of-the-art blockchain-based applications built for educational purposes, and to summarising the possible difficulties and study gaps that need more considerations in the future projects.

RQ1: the first question of this study focused on identifying the journals and research papers that are related to blockchain especially in the domain of higher education. While various applications of blockchain have been produced for educational purposes, few have been utilised by organisations and stakeholders. These applications are divided into the following themes: enhancing and motivating lifelong learning, student assessment, certificate and identity management, review papers, credit transfer and admissions. The first theme is related to a specific application aimed to enhance and motivate lifelong learning. This theme included all journal publications addressing lifelong learning records in blockchain especially in higher education. This platform allows learners to move their learning records in a secure and verifiable way from one institution to another. The second theme refers to student assessment, several studies developed a platform to adopt blockchain technology for online assignments and exams for high education. As a result, Mitchell et al. (2019) developed a system called 'dAppER' which can be applied for the production of exam papers. This system enables transparency that is ideal for viewing by external examiners and auditors, in addition to offer some insights which quality assurance frameworks in general are complemented by the establishment of decentralised applications. This technology includes a robotic quality assurance framework for the production of research papers and their assessment schedules, blockchain protects the checks and sustains the immutable and trustworthy leader of the audits. Shen and Xiao (2018) developed a scheme using blockchain technologies that help

in validating and tracing the answers of students. The third theme associates with credit transfer. This blockchain application can be used to transfer student credits and completed course records between educational institutions. A system to store student documents and transcripts including an electronic credit transfer method was introduced by (Rivastava et al. 2018). Within this application, student will be able to transfer their completed course and its related credits to another university. Turkanovic et al. (2018) have also developed a global credit network for higher education called EduCTX, this system can be used for accumulation and credit transfer and its useful for both students and universities. The fourth them is related to certificate and identity management. These applications are designed to have better control on the certificates received by students and to minimise dependency on needing third party intermediaries (e.g., universities and employers) for holding, checking and validating qualifications and credentials of students (Chen et al. 2018). The fifth theme links with parchment application that assists in assessing qualifications, generating certificates and processing academy programmes. This allow learners, teachers and academic institutions to request and share their credentials and to have a discussion about the academic performance in a secure environment and simple way. The final theme is related to admissions registrations. For instance, Mori and Miwa (2019) introduced a digital application framework for university admission that assists in organising research documents and e-port folioing on a blockchain through smart contracts. Furthermore, Ghaffar and Hussain (2019) have proposed a framework for HEC and PEC that are used to verify applicants records in a short and a secure way, allowing students to apply on a common forum for university admissions.

RQ2: the second question of this study focused on identifying the challenges that face blockchain technology and its application especially in the domain of higher education. While blockchains have many useful educational applications, practitioners continue to face various problems when using this educational technology. Therefore, multiple challenges were found in the articles examined. These challenges include motivation, blockchain usability, scalability, security, immutability, legal issues, market options and innovation. First challenge refers to lack of motivation, where stakeholders find it difficult to implement the applications of blockchain technology especially in the education sector. For this reason, there is a need to conduct further studies that assist individuals in using blockchain technology and its related applications. This has led many researchers to design and develop functional blockchain system in order to improve the adoption of this technology in the education field (Ghaffar and Hussien 2019; Liyuan et al. 2019). Second challenge relates to scalability where there is a potential impact on the access latency of blockchain applications due to the increasing number of users, assists and large sets of data. Forment et al. (2018) argued that the direction and implication of blockchain technology and its related aspects are difficult to be predicted, considering potential future adaptations and new scalability implementation approaches. Third challenge refers to usability of blockchain. This challenge is still a big problem in the area of education, due to the unclear terminology of the technology. In addition, to maintain security, the practitioners may need to deal with complicated and multiple settings including recovery tools and primary keys. It is also important to note that adopting peer to

peer network has different requirements that can make it impossible for end users to access blockchains. For this reason, usability of blockchain can also be improved by application design interfaces that make it easy for users that do not have technological skills to use blockchain (Rahardja et al. 2019). Therefore, more studies are expected to be conducted on blockchain usability for individuals. Furthermore, designing simple specification and applying well-designed interfaces, the adoption of blockchain technology and its related aspects can be enhanced in several fields especially in education. Fourth challenge is linked with immutability, where this term has been widely used in blockchains and has been considered to be a key feature of blockchain and its related aspects. Immutability of the blockchain keeps the data safe through makes it impossible for the data stored to be modified. Nevertheless, immutability is considered as a major challenge when applying the technology of blockchain in the field of education (e.g., degree revocation). Vidal et al. (2019) affirmed that the educational degrees that are stored using blockchain technology are secured and cannot be modified due to the immutability of the blockchain technology. The immutability challenge relates directly to different categories where students information needs to be securely documented and stored. These categories include admissions, assessments, exams and certificate verification. Fifth challenge refers to privacy and security in which student identities need to be protected through establishing connection between real and pseudonyms identities (Shen and Xiao 2018). For this reason, it is important to ensure that the data stored on the network can be securely used by users (Han et al. 2018). Other challenges link with legal issues, where multiple challenges (e.g., vague legislation, perception of legislator about centralised and decentralised data) face education suppliers in ensuring that their product conform with data protection laws including the general data protection regulation (GDPR). Market option is also a challenge for decision makers when collecting and analysing data. This is because there is a lack of systematic and single independent processes to validate the collected data. Due to the difficulties of controlling these challenges, it becomes even harder to deal with legal issues. Nevertheless, there are different ways in which education suppliers can develop innovative solutions to overcome these challenges. For example, it is possible to restrict or even prevent personal data from being stored on the blockchain, in addition to carefully consider whether blockchain is used to meet a legitimate organisation or use permissioned blockchains with more stringent usage regulations.

6 Conclusion

In terms of traceability, decentralisation and immutability, blockchain to be considered as a distributed ledger technology that assists in distributing consensus algorithms and employs cryptographic approaches. Blockchain and smart contracts have properties that can contribute to a variety of creative developments in higher education. Apart from handling diplomas and assessing accomplishments, the technology of blockchain can be used in the field of education in a variety of unconventional

ways. Blockchain technology has the potential for educators and learners to be adopted in several applications that include design and execution of learning excesses, performing formative assessment and monitoring the whole processes of learning and teaching. In spite of that, there have been few studies on this subject. For this reason, examining the possibilities for using blockchain technology and smart contracts in order to improve learning engagement and accomplishment is challenging. This study aims to solve this issue by exploring the current studies of blockchain and its related aspects for education, and identifying the academic issues associated with the implementation of blockchain especially in the field of education. The findings of the analysis have the potential to help future researchers in examining and dealing with new challenges. Various applications of blockchain have been produced for educational purposes, few have been utilised by organisations and stakeholders. These applications are divided into the following themes: enhancing and motivating lifelong learning, student assessment, certificate and identity management, review papers, credit transfer and admissions. While blockchains have many useful educational applications, practitioners continue to face various problems when using this educational technology.

Therefore, multiple challenges were found in the articles examined. These challenges include motivation, blockchain usability, scalability, security, immutability, legal issues, market options and innovation. In terms of covid-19, blockchain can assist in building future education system that can make better use of blended learning models to reach all students at their level and deliver more personalised instruction. Educations institutions need to support learning continuity to expand digitalisation use in many sectors especially in higher education. This will help institutions of higher education to recover from the potential impacts of covid-19 through adapting to more flexible, secure and resilient approach.

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Impact of International Climate Policy on the Supply Management of Enterprises Producing Green Energy



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Abstract The implementation of such climate-neutral measures is based on the principle of resource conservation and efficient use of available resources, namely, the possibility of re-consuming such resources as a result of their recycling. The article is devoted to assessing the impact of international climate policy on the supply management of alternative energy sources for the enterprises producing green energy. The factors of biofuel production (agricultural raw materials) have been determined. As a result of assessing the level of interaction between agricultural enterprises and enterprises producing green energy, a positive trend in the production of green energy from biofuels was established. Factor modeling is proposed for optimizing the biomass supply chain from agricultural enterprises to enterprises producing green energy. For this, the factors of the dynamics of biomass production (agricultural raw materials) and the logistics of supplying biomass to enterprises producing green energy are taken as a basis. The indicator of the efficiency of the algorithm of interaction between agricultural enterprises and enterprises producing green energy to optimize the supply chain of biomass is the cost indicator of the produced green energy.

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Keywords Renewable energy sources · Alternative energy · Climate change · Environmental safety · Sustainable development · Energy efficiency · Energy saving · Biofuels · Green electricity · Green heat energy

1 Introduction

To ensure the energy and environmental security of economic development, it is necessary to efficiently manage natural energy resources. In this context, agricultural raw materials are a type of biomass required for the production of biofuels, green electricity and green heat energy. Besides coping with climate change is a cross-cutting challenge in ensuring environmental security at both the national and international levels. The solution to this issue involves the application of decarbonization measures in various spheres of human life. In particular, this is the transition to the production of alternative energy, the introduction of energy management at industrial enterprises, the installation of energy-saving technologies in households, the formation of demand for electric vehicles, etc.

The transition to secondary processing of resources is both a way of optimizing natural resource management and an alternative source of energy. In the context of increasing energy efficiency and energy saving, an important role belongs to the culture formation of processing renewable energy sources (solar energy, wind energy, etc.), biomass and waste.

The use of biomass as a source of green thermal and electrical energy, as well as biofuels (solid biofuels: pellets; biogas; solid biofuels: bioethanol, biodiesel) is the basis for the development of green energy in general and bioenergy in particular. A tendency has been established to re-equip boiler houses to use biomass and solid biofuels, to build thermal power plants using biomass (Svyntukh 2014; Skoruk and Maidanyk 2016; Dzhedzhula and Yepifanova 2018), and to use biofuels in transport. In the Law of Ukraine “On Alternative Fuels” (Ukrainy 2021), the concept of “biomass” is interpreted as a biologically renewable substance of organic origin, biodegradable (waste from agriculture (crop and livestock), forestry and technologically related industries, as well as organic part of industrial and household waste).

Biogas is one of the alternative sources for obtaining green electricity and heat energy. Accordingly, it is important to create a favorable market environment for the functioning of enterprises that produce electricity and heat from biogas. Taking this into account, an urgent issue is to ensure effective interaction between agricultural enterprises and enterprises for the production of green energy by developing an optimization supply chain and processing of biomass.

2 Literature Review

The main tasks of effective management of business processes in the organizational sphere at alternative energy enterprises are the design of the structure of business processes (allocation of responsibility centers and the formation of a model of their interaction), consolidation of divisions in order to control the time for implementation of integration in the business process management system, selection and adaptation of software and hardware for effective management of business processes (Klymchuk 2012).

At the same time, in Stepanova (2017) draws attention to the close correlation between the number of biofuel producers and the amount of their products. This testifies that instead of confirming the tendency of enlarging production, there is a constant renewal of producers (mainly from the cycle of small producers, some of which are closed, others are opened). Among the reasons for this phenomenon are the unsuitable supply of raw materials (agricultural raw materials), the wrong location of production in terms of the raw material base (agricultural enterprises), and the lack of access to European markets. In addition, the decisive factor in the introduction of efficient production and consumption of biofuels is to obtain a full range of effects: economic, social, environmental and energy (Pryshliak 2015).

It should be emphasized that financial policies in countries producing biofuels are subject to government regulation, namely: the provision of subsidies for the construction of biofuel plants (USA, Missouri; subsidies amounted to 20 cents per gallon for the production of the first batch (12.5 million gallons) and 5 cents per gallon for each subsequent batch); exemption of biofuel producers from paying taxes on these products (USA, Illinois, North Dakota); funding of scientific centers for applied research in the field of bioenergy (USA, Illinois; \$7 million allocated); imposition of duties on biofuels imported from other countries; guaranteed by the state the use of domestic biofuels in the composition of blended gasolines and diesel fuels in the domestic market (Chybiskova 2007).

Among the measures to provide bio-raw materials in Volodin and Heorhiiev (2015), they propose the creation of innovative project clusters for the production of biofuel on the technological platform of bioenergy. Scientists consider the technological platform as a communication tool aimed at enhancing efforts to create promising commercial technologies, new products (services), to attract additional resources for research and development based on the participation of all stakeholders (business, science, government, civil society), improving the regulatory framework in the field of scientific and technological, innovative development (Volodin and Heorhiiev 2015). In addition, as noted in Churilov et al. (2012), technological improvements and research (especially in the processing of raw materials into fuel, the possibility of mixing and transporting them) can significantly increase the competitiveness of biofuels, and therefore, reduce the cost of production. In addition, the development of production and consumption of biofuels can also contribute to more efficient management of agricultural land.

For the measure implementation to strengthen the environmental and energy security of countries, it is important to develop the energy sector of the economy based on interaction of enterprises producing biomass and enterprises producing green energy. This is important for formation a municipal environmental policy and environmental sustainability of the electric vehicle (Van Der Kam et al. 2019; Dontu et al. 2019), introduction an energy management system in households and enterprises with a combination of solar heat and bioenergy (Maki et al. 2021), replace fossil fuels with bioenergy in district heating (Lindroos et al. 2021; Halysh et al. 2021) as an environment for the implementation of such an innovative product in the energy market as green energy (biofuels).

Regarding the organization of biofuel production by agricultural enterprises, it can be: diversification of activities and establishment of biofuel production within the enterprise; growing raw materials for the production of biofuel with subsequent sale to processing enterprises; participation in the biofuel cluster (Demirbas 2009). Biomass is a carbon-neutral fuel, its use does not lead to an increase in the global greenhouse effect. Today, the main supplier of biomass used for biofuels is agriculture and forestry, energy plantation and microbiological industry (Pyrih et al. 2020).

3 Purpose of the Study

The purpose of the article is to assessing the impact of international climate policy on the supply management of alternative energy sources for the enterprises producing green energy.

4 Methodologie

In summarizing the scientific work, we note the urgent need for research the factor environment of the supply management of alternative energy sources (the biomass) for the enterprises producing green energy. The methodological tools were used factor models, analysis, cybernetic approach, statistical methods. In order to study the influence of factors of biomass production (agricultural raw materials) on the indicators of green energy (biofuel) production, we conducted a factor analysis, in particular, stochastic factor analysis which provides a whole range of methods for studying the interdependencies of the resulting indicator (or several resulting indicators) from one or more independent factors.

Unlike correlation analysis, which only answers the question of whether there is a relationship between the phenomena under consideration, regression analysis establishes an analytical expression for this relationship. Therefore, in the work was used factor analysis based on one-dimensional regression linear and nonlinear models of the following form.

5 Findings and Discussion

One of the imperatives for increasing the energy efficiency of the economy is the development and optimization of technologies for growing energy (photosynthetic) plants, which are specifically used as biofuels or energy production. Biomass is a carbon-neutral fuel, its use does not lead to an increase in the global greenhouse effect. Today, the main supplier of biomass used for biofuels is agriculture and forestry, energy plantation and microbiological industry (Brych et al. 2021).

Since 2013, the countries of the European Union have a unified environmental policy of the European Union, which obliges farmers who own more than 15 ha of arable land to allocate at least 5% of the relevant area for environmental and energy needs. Since 2017, the share of such land for relevant needs has increased to 7%. According to the European Commission, about 10% of all used agricultural land should be used for energy crops. In addition, farmers are obliged to grow energy crops without the use of pesticides and mineral fertilizers (Brych et al. 2021; Heletukha et al. 2014). In the countries of the European Union, 13.2 million ha of land are already available for growing energy crops. By 2025, this figure may grow to 20.5 million ha, and by 2030—up to 26.2 million ha (Kolomiichenko et al. 2014).

But, in Ukraine, there are about 3.5 million ha of land taken out of crop rotations for their low fertility, tendency to erosion. The cultivation of fast-growing high-yielding energy crops on these lands, including artichoke, will save soils from erosion, increase the thickness of the humus layer and, in general, improve the ecological and energy state of the country (Brych et al. 2021). According to 2016 data, the economically viable energy potential of existing biomass waste reaches 25 million tons of standard fuel, and the energy potential of biomass, which can be grown on unused agricultural land with an area of more than 4 million ha, is about 13 million tons of standard fuel. Due to this potential, it is possible to cover up to 18% of the total consumption of primary energy resources in Ukraine (Ohliadova Robotka 2021).

The European Green Deal, adopted by the European Commission in December 2019, approved a course towards climate neutral development of the economy and society until 2050 and became another reboot of the energy policy of states aimed at preserving the environment and preventing climate change. In particular, Ukraine, which supported the implementation of the provisions of this agreement, adopted the Concept of Ukraine's green energy transition by 2050. According to the Concept, measures are envisaged aimed at:

- ensuring energy efficiency and increasing energy saving (industry, buildings, heat power engineering)
- use of renewable energy sources (solar energy, wind energy, bioenergy)
- decarbonization and greening of transport by switching to electric transport (urban, intercity, freight, private)
- waste management and implementation of a circular economy;
- digitalization and technological changes in energy supply and distribution systems (launch of Smart grids);

Table 1 Dynamics of the implementation of biogas projects for the production of electricity in Ukraine, 2018–2020 (as of January this year)

	2018	2019	2020	Deviation between 2020 and 2018
Installed capacity of biogas projects (total), MW	34	46	86	+52
Electricity production for biogas projects, mln kWh	9	16	30	+21

Source Formed by the authors on the basis of Agribusiness of Ukraine (2021)

- support for research and development work and innovations for the development of green energy and ensuring energy, environmental safety of Ukraine.

Today biofuel production can be carried out by stationary and mobile methods. In accordance with this, enterprises for the production of biofuel, depending on the form of education, can be divided into two groups, namely:

- enterprises using raw materials from external suppliers, for example from agricultural, wood processing enterprises;
- enterprises (for example, agricultural enterprises), waste (agricultural raw materials) from the main production process (biomass) are recycled for the production of biofuel as an internal alternative energy source or for sale on the bioenergy market (Brych et al. 2020a).

Regarding the organization of biofuel production by agricultural enterprises, it can be: diversification of activities and establishment of biofuel production within the enterprise; growing raw materials for the production of biofuel with subsequent sale to processing enterprises; participation in the biofuel cluster (Demirbas 2009). In particular, one of the promising areas for agricultural enterprises is the production of green electricity and heat from biogas. In particular, in Table 1 we track the positive dynamics of electricity production from biogas in Ukraine.

Among the environmental effects of the implementation of biogas projects in Agribusiness of Ukraine (2021) we can highlight the following ones: efficient use of agricultural waste, including animal by-products (manure and dung), fermentation residues is a high-quality fertilizer that can be sold or used instead of mineral fertilizer; the absence of an adaptation period in biofertilizers saves time and storage space; power generation; reducing the area of waste storage or completely eliminating the storage of manure and dung; reduction of greenhouse effect emissions.

In the context of the development of green energy to ensure the production of biofuels, an important role belongs to the establishment of territorial cooperation with enterprises supplying raw materials (biomass) by creating regional clusters of enterprises for the production of green energy. Accordingly, the prospects for the development of the bioenergy sector of the region are considered by forming a strategy for managing the bioresource potential of agro-industrial enterprises, creating a technological bioenergy platform as a tool for implementing the overall development strategy (Brych et al. 2020a). Based on the combination of the strengths

and weaknesses of agricultural enterprises, as well as the opportunities and threats of the external environment, the following strategies for the development of bio-production at agricultural enterprises (strategies at the intersection of the possibilities of the external environment—the strengths of the enterprise) are proposed in Demirbas (2009):

- selection of the optimal organizational form of bio-production to use all the possibilities of state support;
- using the possibilities of financial, scientific and technical support of international financial organizations for a fuller use of the potential and organization of bioproduction.

The immediate need to improve the mechanism of interaction of agricultural enterprises between enterprises producing green energy to optimize the biomass supply chain is prompted by such innovative transformations in the strategic development of agricultural enterprises: the rapid intensification of the digitization of production processes based on automation (robotics); the use of innovations in plant breeding and livestock breeding, crop rotations based on maximizing production volumes.

At the same time, with the dynamic development of technologies, such issues of sustainable development as providing the population with food, food safety, the use of energy efficiency technologies (biotechnologies), organic and environmentally oriented production, a decrease in the number of depressed economic regions, an increase in the level and quality of human life, the demographic development of rural areas are becoming global. In addition, carrying out the research, it was revealed that more and more, along with the development of vertical corporations and holdings, attention is focused on the efficiency of functioning of small and medium-sized commodity production, their cooperation in large-scale specialized production as a platform for the introduction of energy efficient technologies in rural areas.

Such transitive processes in agriculture lead to a strategic shift and, as a consequence, the use of an optimization approach when developing a strategy for cooperation with a green energy company. Optimization of any process involves finding and choosing one of the best options for its implementation. In this context, managers of agricultural enterprises are faced with the dilemma of how to maximize profits, assert competitive advantages in the market (Borysiak 2017):

- through the automation of production operations and minimization of financial costs for personnel (information and network economy);
- through the socialization of production operations, the application of the principle of conformity to nature (appeal to the traditions of ancestors in agriculture) and maximize financial costs for personnel (economics of sustainable development).

In the context of the approval of sustainable development principles, the basis for the profit of agricultural enterprises is laid not only on the dependence on the automation of production processes and the introduction of innovative technologies (an increase in the supply of agricultural products), but also on the level of increasing the environmental and energy security of the region. In addition, such a process must be comprehensive and take into account changes in the energy market, in particular

the introduction of international standards for certification of biofuels (Halysh et al. 2021), the establishment of an interaction communication model in the energy service market (Brych et al. 2020b), the introduction of innovative technologies at energy enterprises (Borysiak et al. 2019; Borysiak 2021; Brych et al. 2020c).

As a result, the strategic task of agricultural enterprises as socio-economic systems is to strengthen the environmental responsibility of the enterprise as a manufacturer (organic products, environmental protection, the introduction of energy management into the enterprise management system). This indicates the importance of developing a model for the environmentally energy interaction of agricultural enterprises with enterprises producing green energy.

The imperative of the competitiveness of agricultural enterprises in the domestic and international agricultural markets is the formation of a sustainable natural resource base and its rational use based on the principles of sustainable development. According to analytical data in Agribusiness of Ukraine (2021), the net profitability of agricultural enterprises in Ukraine decreased from 41.7% in 2015 to 15.6% in 2019, and also the production of agricultural products from the gross domestic product decreased from 10.8% in 2015 to 10% in 2019. But the export of the agro-industrial complex increased from 14.6 billion dollars in 2015 to 22.1 billion dollars in 2019. In general, this testifies the openness of the issues of approving the strategic potential of agriculture in the structure of the Ukrainian economy, as well as in the world market (improving technical and technological processes, approaches to the management system, expanding the role of intellectualization of labor at enterprises). According to such data, the transformation of agriculture in the field of export raw materials production into an export industry of the full cycle of production of agricultural products and services is of key importance, the functional vectors of which are aimed at the manufacture of final products, in particular, on production processes—processing, distribution and marketing.

According to the data in Table 2 during 2017–2019, the number of generating enterprises (installations) is increasing for the production of electricity and heat

Table 2 Dynamics of production of green electricity and thermal energy from biofuels in Ukraine, 2017–2019

	2017	2018	2019	Deviation between 2019 and 2016
Enterprises (installations) for the production of electricity and heat, which worked on biofuel, %	27,1	29,6	30,4	+3,3
Produced green electricity from biofuels, mln. KWh	210,7	287,5	412,9	+202,2
Produced green thermal energy from biofuel, thousand Gcal	6437,4	7636,7	7574,1	+1136,4

Source Formed by the authors on the basis of Postachannia ta Vykorystannia Enerhii (2021); Pryimak et al. 2020; Brych et al. 2019a, 2019b)

energy in Ukraine, which worked on biofuel. In particular, in 2019, 412.9 million kWh of electricity were supplied, which was 0.3% of the total volume (in 2018—0.2%), heat energy—7,574.1 thousand Gcal (8.3% versus 7.8% in 2018) (Postachannia ta Vykorystannia Enerhii 2021). In addition, in the context of data (Agribusiness of Ukraine 2021) during 2020, we also trace the positive dynamics of the production of green electricity from biogas (from 34.9 million kWh in January to 43.1 million kWh in November) and biomass (from 20.7 million kWh in January to 27.8 million kWh in November).

The non-linear increase in the frequency of stochastic changes, emergence and entropy in the business environment forces managers to search for flexibility-integrated and holistic approaches that could ensure the proactive positioning of the corresponding agricultural enterprise and enhance its ability to self-organize. In addition, the systematic nature of economic crises both in Ukraine and in the world, the transformational processes in geopolitics in recent years have led the heads of enterprises to build a model of a common strategy on the principles of sustainable development.

Agricultural enterprises, like enterprises of other types of economic activity, today are open, stochastic systems, and therefore, they experience linear and nonlinear effects of external (government policy, development of information technology, educational services market, labor market, etc.) and internal (organizational structure management, resources, technology, corporate culture, etc.) factors. The process of integrating these factors can cause an emergent effect in the system, the content of which is to increase the level of environmental and energy security.

In order to study the influence of factors of biomass production (agricultural raw materials) on the indicators of green energy (biofuel) production, we will conduct a factor analysis, in particular, stochastic factor analysis which provides a whole range of methods for studying the interdependencies of the resulting indicator (or several resulting indicators) from one or more independent factors.

Unlike correlation analysis, which only answers the question of whether there is a relationship between the phenomena under consideration, regression analysis establishes an analytical expression for this relationship. Therefore, in the work will be used factor analysis based on one-dimensional regression linear and nonlinear models of the following form:

$$\begin{aligned} Y &= b_0 + b_1 \cdot x, \\ Y &= b_0 + b_1 \cdot x + b_2 \cdot x^2, \end{aligned} \tag{1}$$

where Y is the indicator of green energy production, x is the factor of influence on the indicators of biomass production (agricultural raw materials) and biomass supply logistics.

To determine the tightness of the relationship between indicators and factors, which are in a stochastic relationship, we use the coefficient of arc elasticity:

$$E^D = \left(\frac{\Delta x}{\Delta Y} \cdot \frac{\bar{Y}}{\bar{x}} \right) = \frac{x_2 - x_1}{(x_1 + x_2)/2} \cdot \frac{Y_2 - Y_1}{(Y_1 + Y_2)/2}, \quad (2)$$

where Δx , ΔY —the absolute deviations of interrelated indicators; \bar{x} , \bar{Y} —the average values of these indicators based on two points of the dependence curve.

Accordingly, to establish the causal relationship between the factors of the dynamics of biomass production and the logistics of biomass supplies to enterprises producing green energy, we take the following indicators:

$x_{1,j}$ —land area for biomass cultivation;

$x_{2,j}$ —humus level;

$x_{3,j}$ —the distance between the agricultural enterprise and the green energy production enterprise;

$x_{4,j}$ —time spent on the supply of biomass by the appropriate mode of transport;

$x_{5,j}$ —depreciation of transport.

As an indicator of the effectiveness of the algorithm for the interaction of agricultural enterprises with enterprises producing green energy to optimize the biomass supply chain, we will choose the cost indicator of the produced green energy, in which the volume of production is measured in monetary units, in particular, the income (revenue) from the sale of products (services) enterprises producing green energy.

The dependence of the indicators of green energy production on the indicators of biomass production (agricultural raw materials) and the logistics of biomass supply will be described by a linear equation with a fixed number of coefficients, including all factors:

$$D = a_0 + \sum_{i=1}^5 x_{ij} \cdot a_i. \quad (3)$$

where x_{ij} is the value of the i -th indicator of the dynamics of biomass production and logistics of biomass supply to enterprises for the production of green energy for the j -th corresponding period, a_i is the estimate of the i -th coefficient of the model, m is the dimension of the model.

The approach to plotting dependence 3 allows to find an interval estimate of the coefficients $[\vec{a}]$ on the basis of computational procedures of linear programming.

In order to visually reflect the influence of biomass production factors (agricultural raw materials) and biomass supply logistics on the modeled indicator of green energy production, we use this approach. Since the model for green energy production is multidimensional, it is necessary to apply the projection method to map it to the Cartesian plane. To do this, we reflect the projections of the dynamics of each factor of influence on the predicted indicator of green energy production, in such a way that the dynamics projection of a certain factor is built with fixed values of other factors at one point, for example, values corresponding to one year of the enterprise's activity.

6 Conclusion

The concept of sustainable development assumes the harmonization of the development of all spheres of public life in order to preserve the environment, the formation of sustainable ecosystems. On the way to a climate-neutral development of the economy, it is important to take into account the development of an algorithm for cooperation of all actors in the green energy market (biomass producers, biofuel producers, green energy producers, green energy consumers).

So, considering the urgency of preventing climate change issue, as well as the limited nature of natural energy resources, determine the implementation of factor modeling to optimize the biomass supply chain from agricultural enterprises to enterprises producing green energy. For this, it is proposed to take as a basis the factors of the dynamics of biomass production (agricultural raw materials) and the logistics of supplying biomass to enterprises for the production of green energy. But the indicator of the effectiveness of the algorithm of interaction between agricultural enterprises and enterprises producing green energy to optimize the supply chain of biomass was chosen the cost indicator of the produced green energy.

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Blockchain and Cryptocurrency: Development Without Regulation?



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Abstract Blockchain is a technology based on a chain of interconnected blocks containing transaction history and user data. Blockchain permitted the creation of crypto-currency. Among its advantages: decentralization, transparency, and integrity. This technology has increased especially with the advent of covid19 with the accentuation of the wave of digitalization. Classic finance systems felt overwhelmed by events and tried to catch up with this new wave, by creating their crypto-currency, and embarking on this new world of digital finance where regulation and control are non-existent. Many central banks see the introduction of central bank digital currencies (MDBC) as a response to these challenges. But the phenomenal expansion of these crypto-currencies could present risks in terms of transmission of monetary policy, monetary creation, and financial stability. In this work, we will present the blockchain, the evolution of crypto-currency, and the reaction classic finance systems to this wave of digitalization of transactions, and especially to an absence of regulation.

Keywords Blockchain · Decentralized · Cryptocurrencies · Security · Anonymity · Digitalization of the economy · Blockchain technologies in the financial sector

1 Introduction

The global financial crisis contributed to the advent of crypto-currencies which challenged the paradigm of state-guaranteed currencies and the dominant role of central banks and other mainstream financial institutions; (Nakamoto 2008). These virtual assets have become new means of payment, even units of account, thus reducing the demand for fiduciary currencies. But currently, crypto currencies are too volatile and even risky. For some, they inspire less confidence and can be entangled in cases of fraud, security breaches, breakdowns, and links to illicit activities. But continuous technological innovation has addressed some of these shortcomings. To counter the

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potential competition from crypto currencies, such as central banks need to implement effective monetary policies too. They can take inspiration from the characteristics of crypto currencies and the technology they use to bring fiduciary currencies more in step with the digital age.

Crypto-currencies are pure blockchain products and a real advance in cryptography and distributed ledger technology. Crypto-currencies are digital representations of value. They are denominated in their units of account and are traded peer to peer, without intermediaries (Wen et al. 2021). The market value of these assets is that they can be exchanged for other currencies and used for payments or as a store of value. Unlike fiduciary currencies, whose value is inseparable from monetary policy and their status as legal tender, crypto-assets are only worth the anticipation that other agents will value them and will use them (Piera et al. 2021). The fact that their valuation is based on convictions not firmly anchored in real assets, explains the high price volatility observed. With some crypto currencies like bitcoin, the risk of inflation is limited because the supply is also limited. However, these assets do not perform three essential functions that stable monetary regimes are expected to perform: protection against the risk of structural deflation, ability to adapt flexibly to temporary shocks in demand for money (thus impacting the economic cycle), and finally, the ability to act as a lender of last resort. Do several questions arise about the future of the use of these crypto-currencies? For the volatile side, admittedly with maturity, the volatility could subside, encouraging more people to adopt them in their financial transactions and uses. By introducing new issuance rules, such as rules-based on artificial intelligence, the valuation of this virtual currency could become more stable. To remedy this, there has been the creation of new “stable” crypto currencies the Stablecoins; (Abdo and Zeadally 2020). The term stable has its origin because some virtual currencies are linked to existing fiduciary currencies. Used as a medium of exchange, crypto-currencies have certain advantages. While offering roughly the same anonymity as cash, crypto-currencies allow transactions to be made between operators neglecting the unit of transaction. These properties make crypto-assets particularly attractive for small payments made in the new digital economy based on sharing and services (Christin and Moore 2013).

In addition, unlike bank transfers, the clearing and settlement of transactions are fast and unmediated, which is particularly beneficial for international payments, which are expensive, complicated, and opaque. By increasing the number of correspondent banking networks, new services using blockchain technology and crypto-assets have shortened the times for international payments, since crypto-currency reaches its destination in seconds instead of days. Thus some crypto-currencies will be more widely used and will have more monetary functions in certain regions or certain private digital commerce networks. More generally, the rise of crypto currencies and blockchain technology could herald the shift from an account-based payments system to a value-based or token-based system; (Ali et al. 2015). In the traditional monetary system, the transfer of receivables is recorded in an account managed by an intermediary, usually a bank.

While the second system simply provides for the transfer of a payment object. If the value or authenticity of the object is verifiable, the transaction can proceed, regardless of reliance on the intermediary or the counterparty. In the digital age, this change could also affect money creation itself: from scriptural money to commodity money.

In the nineteenth and twentieth century's, money was essentially based on credit relationships: central money represents a credit relationship between the central bank and citizens (in the case of cash) and between the central bank and commercial banks (in the case of reserves). And demand deposits from commercial banks represent a credit relationship between these banks and their customers. On the other hand, crypto-currency is not based on any credit relationship, does not represent any debt, and is more like commodity money. This is how economists continue to debate the origins and use of this type of currency and to wonder why monetary systems have always alternated between crypto-currency and cashless money, despite the absence of regulation and the risks that can arise there. Through our work, we will want to focus on the spectacular development of the use of this digital currency, despite almost no regulation on this type of currency.

In addition, we have focused on the reactions of traditional financial institutions in the world of finance, their reactions to this competing phenomenon, especially with calls for digitization of services and the emergence of artificial intelligence. Our work will be organized as follows: first, we will present and define the blockchain, present crypto currencies. Then we will present the evolution of the uses of digital currencies, and the risks that can result from it. In a third part we will present the reaction of the world of classical finance to the emergence of the use of virtual currencies, and the future it holds for us.

2 Blockchain and Crypto-currency Definition

2.1 Blockchain Definition

Blockchain is a technology for storing and transmitting information, transparent, secure, and operating without a central control body. This is the platform on which cryptocurrencies are based. A blockchain is a database that contains the history of all exchanges between its users since its creation. This database is secure and distributed: it is shared by its various users, without an intermediary, which allows everyone to check the validity of the chain. There are two types of blockchains: public and private blockchains: Public blockchains, as the name suggests, are open to all users, while private blockchains are limited to several actors for access and use. A public blockchain can be likened to a public accounting ledger, anonymous and tamper-proof; (Albayati et al. 2020). It's like the ledger, which anyone can read freely and for free, and which anyone can write about, but which is unbreakable and indestructible.

The operation of the blockchain is based on majority control; it is an accounting entry of digital operations, shared between multiple stakeholders (Martino et al. 2020). It can only be updated by consensus between a majority of participants in the system. And, once entered, information can never be overwritten. Thus, the cryptocurrency blockchain contains a record of all transactions carried out by crypto currencies without exceptions. Beyond its monetary aspect, this decentralized information storage technology could have multiple applications, such as applications based on smart contracts, allowing the exchange of all kinds of goods or services; and also ways to reduce payment costs and transaction costs.

2.2 *Cryptocurrency Definition*

Technological developments have led to the creation and emergence of a new form of currencies: virtual or digital currency or also crypto-currency or synthetic commodity currency (Selgin 2013). These electronic currencies are created using a peer-to-peer cryptographic protocol, therefore without a central bank (Narayanan et al. 2016). The first crypto-currency is bitcoin, created in 2009 by one or more computer programmers using the pseudonym “Satoshi Nakamoto”. Bitcoin is exchanged peer to peer (individual or company) on the Internet against other monetary currencies (euro, dollar, yen...), outside of traditional banking networks, and it is accepted as a medium by some physical and online merchants. But crypto-currency has no legal framework unlike other monetary currencies. In fact, crypto-currency is not legal course, and its value is not regulated by a central bank. Today Internet trade relies almost exclusively on financial institutions that serve as a trusted medium for processing electronic payments. While this system works well for most transactions, it still contains weaknesses to its trust-based model. Completely irreversible transactions are not possible there, since financial institutions must manage conflict mediation (Buterin 2015).

The cost of this mediation increases transaction costs, effectively limiting the minimum size of a transaction and preventing the possibility of having small, inexpensive transactions. The impossibility of having non-reversible payments for non-reversible services results in an even greater cost. With the ability to reverse transactions, the need for trust increases. Merchants should be wary of their customers, harassing them for more information than necessary. A certain amount of fraud is accepted as inevitable. All these costs and uncertainties of payment can be avoided by the use of a physical currency, but no mechanism exists to make payments through a communication system without having recourse to a trusted third party (Böhme et al. 2015). A crypto currency wallet is software where virtual currency is stored. This is because crypto-currency is not stored anywhere, and there is a private key for each crypto-currency address that is stored in the wallet of the person who owns the balance (Christin and Moore 2013). Crypto-currency wallets make it easy to send and receive crypto-currency. The crypto-currency wallet can be in different forms, the smart phone, the web, it is a digital wallet. Crypto-currencies are the digital equivalent of cash, a crypto-currency wallet is analogous to a physical wallet. But

instead of storing crypto-currency, what's stored is a lot of important information like the secure private key used to access crypto-currency addresses and to make transactions.

2.2.1 First-Generation Crypto-currency (Bitcoin)

First-generation crypto-currencies are digital assets with no intrinsic value. Their real value stems from the trust their user's place in them. This trust does not guarantee the sustainability of the value over time (Dwyer 2014). And their relative scarcity is not a condition for keeping their value within a sufficiently narrow range to ensure relative price stability.

Thus, the drop in demand for bitcoin in 2018 led to a sharp collapse in prices. In addition, this type of digital currency does not constitute a claim of its holder towards its issuer, unlike the official currency which is a claim on the central bank (assets of commercial banks in the central bank, fiat money) or the issuing credit institution (bank deposits). Conventional money is backed by bank balance sheet assets, and also exhibits liquidity characteristics according to the balance sheet of the central bank or the commercial bank that issued it; (FMI 2016). In the case of a commercial bank, bank assets are, on average, much less liquid than bank deposits are to their holders. Prudential rules, therefore, oblige the bank to build up reserves with the central bank in a certain proportion of customer deposits (1% in the Eurozone since 2012).

2.2.2 The Stablecoins

Stable coins were issued by official or unofficial financial institutions or entities, which back them, to assets usually issued by central banks. For example, the JPM coin, issued by US bank JP Morgan in February 2020, falls into this category. It is a "wholesale" crypto-asset (that is to say for financial institutions that want to participate in its blockchain. This currency would be exchangeable at parity against the dollar and accompanied by the guarantee of the issuing bank. Other stable coins will emerge such as the Libra project initiated by Facebook, which will be accepted by central banks promoting the issuance of stable coins. It is a paperless payment method backed by a basket of safe assets denominated in major currencies. By construction, parity will be maintained between each unit of Libra and the safe asset mix, of which the basket is multiple. Thus, the issuance of any additional libra will result in the purchase of the complementary safe asset mix for an amount corresponding to the parity. The first limitation of libra is that sellers of safe assets can agree to be paid in libra.

What these stablecoins have in common with official currencies is that these currencies are claims on their issuers, whose balance sheet quality depends on a basket of more or less secure assets. This virtual currency is therefore considered as part of the shares of its funds. In addition, issuers of this currency generally belong

to the institutional sector of financial and monetary institutions (MFI) in the same way as credit institutions. So stablecoins are distinguished by two aspects. First, their issuers are not necessarily money market funds and are therefore not subject to the same regulations as the latter (Abdo and Zeadally 2020). Then, stablecoins are designed to be mobilized as a means of settlement (at least vis-à-vis those who accept them), to settle a transaction, or to repay a debt.

2.2.3 The Special Case of Tokens

Another innovation in crypto-assets lies in the digitization of certain tangible (work of art) or intangible (patents, copyright) assets in the form of tokens. These are digital assets representing a right to a future service (native token) or an existing thing (non-native token). According to the same principle as that of crypto “currencies”, these tokens can be redeemed without third-party intervention over the internet (Kim et al. 2021).

The register of each protocol can operate independently of the tokens while the primary crypto-assets (bitcoin, ether, ripple, etc.) are inseparable from it. One particular operation, the public offering of tokens “(Initial Coin Offering, ICO) allows fundraising in crypto” currency. “In Europe and France in particular, the (CMF 2019) defines this operation as” a fundraising operation carried out through a blockchain device, which gives rise to the issuance of tokens that can then be used to obtain products or services. Similar to a fundraiser, these transactions allow a business to raise funds at an early stage of development. However, they differ from IPOs (initial public offering, IPO), to which they are often compared. Indeed, unlike shares, tokens do not give their holders rights to the share capital but to products or services that will subsequently be marketed by the company. They are thus akin to an early sale, or pre-financing. They allow a company to build up cash flow before a project comes to fruition and to the subscriber, confident of being allocated, under attractive conditions, rights to products or services developed by the company. While it has so far been mainly used by start-ups, this solution is potential of interest to any company planning to market a new product or service. Tokens therefore present as wide a variety as that of “digitized” assets, or that of pre-financed projects, which in essence makes the market narrower and less liquid than that of “coins”.

2.3 *To a New Economy with Cryptocurrency?*

The emergence of crypto-currency and the associated digital asset ecosystem, have made debates at several economic and societal levels, and in particular in economic and financial circles (Shaker et al. 2021). And the big question is: is Crypto currency money or not? Money is classically defined as a medium of exchange, a store of value, and a unit of account.

2.3.1 Is Crypto-currency a Medium of Exchange?

In the digital entrepreneurial environment, a business owner can pay his teams residing in other countries in Bitcoin for their services provided. Likewise, a person in any country can order different technology products by paying in Bitcoin rather than local currency or dollars and receive them by conventional international delivery services thereafter. This is a reality that is starting to consolidate in some economies. Not to mention instant currency transfers internationally, to relatives, cross-border, wherever you are connected to the Internet on our planet, and at an unbeatable cost. The digital economy has now accepted the use of crypto-currency as a means of payment and as a tool for the exchange of services and products.

Is Crypto-currency a Reserve of Value?

Crypto-currency is a reserve of value when its value is deeply appreciated, and on the other hand, other traditional reserves of value, such as life insurance, savings funds, can be devalued by inflation or management fees. Crypto-currency is certainly a volatile reserve of value, but over the medium to long term, it has been able to prove to be a real store of value.

Is Cryptocurrency a Unit of Account?

Certainly, the volatility is quite high, but over the years the price of Digital Gold may be more stable to become a Digital Gold standard. However, it should be noted that the creation of stable coins backed by the Dollar or Euro will strengthen the stability and unity of account of the crypto-currency. Thus, the crypto currency and the ecosystem of associated crypto-assets, appear as an emerging currency, in full expansion, which presents strong characteristics of a currency of more and more common use, despite its imperfect character from an economic point of view on the medium and long term.

3 Evolution of Crypto-currencies and the Blockchain

The various factors suggest that virtual currency will soon be part of our daily means of payment and also for the investor who will benefit from this major turning point in the history of money. Currently, virtual currencies are multiplying, and traditional currencies are going through a period of crisis, which means that the democratization of crypto currencies is starting to be confirmed on the economic level (Cioroianu et al. 2021). The next few years could mark an intensification of the diffusion of crypto currencies observed in recent years. Therefore, the spread of this new form of

money in everyday life could lead to particularly interesting economic and financial reactions.

3.1 Virtual Currency: The Multiplication of Flows and Global Users

According to CMF (2021) in 2018, the number of crypto-currency users was estimated at 35 million worldwide. And it is estimated that there would be nearly 100 million crypto holders worldwide in the first half of 2020, an increase of almost 185% despite the fall in the prices of major crypto currencies over this period. These figures are found in the capitalization of the main crypto currencies.

Bitcoin represented a total of 15 billion \$ in December 2016 against \$ 290 billion \$ currently in March 2021. The resulting multiplication of global flows can be explained by the great interest shown by financial institutions in crypto currencies. Added to this is the emergence of a distinction between customary money and save money and above all the emergence of a growing need for decentralization. Negative rates have the effect of accentuating the difference between the currency of use and currency of savings, and above all to implicitly increase the risk-taking of the agents. The use of crypto currencies is favored due to independence from central banks and also for the global and decentralized nature (where the law of each state does not apply directly).

3.1.1 Paypal Adopted Crypto Currencies for Transactions Pay

PayPal has joined the crypto-currency market by allowing customers to buy, sell and hold bitcoin and other digital assets, using the company's online wallet accounts. This new option on the PayPal platform came into effect in the first half of 2021. In addition, PayPal intends to eventually distribute the main crypto currencies for its 346 million active PayPal accounts (accounts that have traded for more than 220 billion \$ in transactions in the second quarter of 2020. Thus in the long term, the potential number of crypto-currency users will be up to 3 times greater than the current number of users with the sole decision of PayPal (FMI 2016).

This is why the PayPal crypto-currency project is very ambitious and plans to work with central banks to find the maximum means so that PayPal can impose itself in this matter. PayPal's decision to view this new form of currency as an opportunity created a veritable euphoria behind the scenes in the markets, and many institutions immediately revised their positioning. Facebook should also soon make it possible to pay with its crypto-currency.

3.1.2 Central Banks Issue Their Tokens

The proliferation of private crypto currencies, in a digital world where the free choice of one's currency would become the norm, encourages central banks (and States in terms of regulation) to enter the game so as not to get caught in the trap. Many central banks were considering creating their digital currencies known as CBDC (Central Bank Digital Currency). The reduction in cash exchanges and the multiplication of exchanges in private currencies are pushing institutions like the Central Bank to launch their tokens.

3.1.3 How to Profit from the Multiplication of Virtual Currencies?

The increase in users leads to an increase in the price of crypto currency, indeed, the democratization of crypto-currencies is a factor in the rise of the prices of currencies like Bitcoin. Another effect of the democratization of cryptocurrencies is the development of real industry in this area: the emergence of Decentralized Finance (DeFi) of which ChainLink, Wrapped Bitcoin, Dai or Aave are the main players. In addition, there are also positive effects for all platforms that allow crypto investments.

The fact that cryptos become widespread at the transaction level should systematically translate into democratization at the level of savings. We will mention platforms like Binance, Coinbase, which are seeing their number of users, grow. So, just like traditional currencies that are linked to the banking industry, virtual currencies are linked to the crypto industry. It is therefore particularly appropriate to focus on companies with the greatest potential to become in the face of the massification of cryptos. Crypto-currencies have the advantage of being able to develop a fast payment system that can be used in a very large part of the countries of the world, which does not allow a traditional national currency which remains, in comparison, a brake on world trade.

3.2 The Covid-19 Crisis: A Major Factor in the Democratization of Cryptocurrencies?

The Covid-19 crisis would have been a real opportunity for crypto currencies. The spectacular development of this type of currency in recent years has convinced many institutions and companies like Facebook, certain central banks, and more recently PayPal to take the plunge to enter the game and create their crypto currencies. So, for the next few years, the use of these virtual currencies will certainly be higher than it has been in recent years. Crypto-currencies, after having established themselves in the financial landscape in recent years, is now expected to enter the economic landscape. Cryptos, therefore, appear as an everyday means of payment (or even

investment/savings). The pandemic has accelerated the development of monetary solutions responding to the digitalization of the economy.

Overall, crypto-currencies fell sharply at the start of the global phase of the pandemic, from February to March, and then experienced a phenomenal rebound. Bitcoin has seen dramatic swings and volatility, already approaching \$20,000 in 2018 before collapsing to around \$3,000, to more than quadruple after the pandemic. These uncontrollable variations are the typical characteristics of these crypto-currencies. The phenomenon of rising to these spectacular levels is fueled by the pace of creation (or “mining”). On the demand side, global investor demand has been greatly bolstered in recent months by support from PayPal, which has announced that it is integrating several crypto currencies into its payment solutions. The idea of decentralized data architecture has many advantages, first of all when no centralized instance can manage it or when there is a problem of trust between participants in the system.

But, in monetary and financial terms, many considered bitcoin as the new “digital gold”, but the fundamental elements of its architecture were often ignored. Crypto-currencies of this type have no real backing, and their risks, such as the risk of a crypto breach, cannot be ignored. For their part, “stable coins” type crypto-currencies, which promise a stable value against benchmark currencies, avoid certain obvious pitfalls. However, apart from central bank digital currency projects, which should be equivalent to cash, stable coins are the subject of financial engineering that returns them to the status of the synthetic financial product rather than currency, this is notably the case with Facebook’s libra project.

3.3 The Acceleration of the Economic Digitization by the Pandemic, Changed the Cryptocurrency Market and Public Digital Currency Projects?

The covid19 pandemic has accelerated digitization with phenomena as diverse as teleworking or e-commerce. We are therefore observing the development of solutions based on adaptation to digital life, particularly in monetary terms. Crypto currencies have an important aspect and their integration into real life as a means of payment gives them more credibility and practicality. In addition, the accumulation of public debts following the pandemic and the resulting financing by central banks translates into additional amounts of liquidity to finance sectors in distress (Cioroianu et al. 2021).

That’s why. Crypto-currency prices benefit greatly from this situation. The massive use of crypto-currencies and the digital currency projects of private companies have also encouraged the digital currency projects of central banks, which have the potential to revolutionize the relationship between economic agents and the new currency that will be at stake. Both digital and backed by the central bank. Regardless of the interest in blockchain and its less decentralized derivatives, it is difficult to

see a stable and beneficial role in the potentially widespread use of digital currencies globally. The danger can arise when the use of almost all currencies does not rely on the real economy and its use without geographical limits can have disastrous consequences if that currency is used for money laundering and financing terrorism.

4 Is Cryptocurrencies a Threat to Traditional Financial Institutions?

Financial institutions around the world are worried about the growing success of crypto-currencies. These financial institutions are trying to regulate them or create their national digital crypto-currencies. There are hundreds of digital currencies (Ether, Ripple, LiteCoin, etc.). The most famous of these, Bitcoin, has become the main and booming crypto-currency with both individuals and large private investors.

4.1 There Are Two Categories of Digital Currencies

The first is made up of Bitcoin-type currencies which can be private or even public if they emerge from central banks. Monetary and Financial Control in France defines blockchain in its article (CMF 2021) as any digital representation of a value that is not issued or guaranteed by a central bank or by a public authority that is not necessarily attached to a currency which is legal tender, but which is accepted by natural or legal persons as a medium of exchange and which can be transferred, stored or exchanged electronically. The second category of digital currency consists of tokens that are assimilated into financial instruments. (CMF 2021) defines this second category as a token, any intangible asset representing, in digital form, one or more rights, which can be issued, registered, stored, or transferred using a recording device. A shared electronic system allowing the identification, directly or indirectly, of the owner of the said property.

The crisis of confidence is particularly affecting the banking sector and it is little wonder that Bitcoin and Ethereum, which are crypto currencies based on Blockchain technology, are giving rise to true monetary systems that are independent and parallel to each other. to state monetary and banking systems (Hu et al. 2021). In addition, crypto-currencies are no longer objects of mere speculation but are increasingly becoming real currencies and long-term investments. This situation seems to worry high financial circles such as central banks and multinationals.

5 Crypto-currencies Risks and the Regulation

Because of the anonymity of transactions, bitcoin is considered one of the preferred means of payment for acquiring illegal goods and services (drugs, identity papers, arms trafficking, murder, prostitution, etc.), but also as a means to promote the financing of terrorism, tax evasion or money laundering. These problems were particularly revealed during the closure of the Silk Road site by the American authorities (Christin and Moore 2013). The Cypriot and Greek crises also showed that bitcoin made it possible to bypass regulations on the movement of capital. In the Cypriot case, in 2013, holders of a deposit account over 100,000 euro, especially Russians, turned to bitcoin to avoid participating in the rescue. In Greece, in July 2015, bitcoin transactions increased by 300% to bypass bank withdrawal regulations. Bitcoin can thus appear as a haven to the point of making it a kind of digital gold (Shanaev et al. 2020).

However, many states warn of the dangers of using virtual currencies (Hu et al. 2021). This is the case of France (Revue de l'ACPR 2014) or China. For the European Central Bank (ECB 2015), bitcoin is not legal money and does not plan to regulate it at this time. Countries such as Germany treat it as a private currency, which helps to tax transactions. The United States and Japan regard it as a commodity to tax capital gains.

In addition to the benefits of using blockchains for financial transactions, there are several obstacles, technical and legal; (Sharma 2021). We start with operational risks. They manifest themselves in the first place by the risk of blocking transactions. Currently, the number of transactions that the blockchain can validate is limited to seven per second. But this technical characteristic is incompatible with the financial markets where saturation effects could lead to a blockage. But solutions are proposed and tested to allow the blockchain to process the volumes of the financial markets. The status of minors could be problematic if they operated in the financial markets. Currently, there are no regulations or oversight imposed on them, as is the case with financial intermediaries (Siu 2021).

Therefore, there is no guarantee that investors will trust the miners in the settlement of transactions. The governance of the blockchain should also be a matter of concern. Indeed, it has no owner or regulatory authority, since the founding principle of the blockchain is: "Code is the law." It is considered a decentralized organization, its openness and flexible governance mean that future problems may not be properly anticipated; (CPMI 2015). Conflict resolution is a central problem in the absence of regulatory authority, laws, and jurisdiction. One solution, currently being tested by financial institutions (R3 project), consists of setting up their blockchains, and minors are then approved beforehand. Thus, the validation of transactions is the responsibility of a set of nodes and not of all certifiers, which should contribute to a greater fluidity of transactions compared to a public blockchain.

When the blockchain is private, only approved members can carry out transactions on it for their account and/or for that of third parties. It can be semi-private if operations can be started by any agent, but certified by certified members. Regulators

will need to monitor the authenticity of the channels. According to Rennick (2015), the generalization of chains would save banks up to 20 billion \$ per year.

5.1 Cryptocurrencies Regulation

Among the unique characteristics of these crypto-currencies are the decentralized aspect, and the lack of regulation and control. Several supporters and users of virtual currency see the regulation of cryptocurrencies as a threat to the freedom and independence of this medium of transaction type of crypto-currencies Albayati et al. (2020). But the advantage of regulation is an advantage for crypto-currencies that must be well regulated so that the new means of transactions are robust in the event of shocks or financial crisis. The regulation aims at protecting transactions, ensuring security, and also protecting personal data, and especially regulation acts to fight against money laundering (Yadav et al. 2020).

The supervision of crypto-currencies is essential since it is a speculative asset and is used in business and money laundering activities as well. It must therefore have regulations. And it has to be applied globally because if there are loopholes or weaknesses in the system, it will be used fraudulently. This new highly innovative market has currently absent or poorly designed regulation, which risks harming the innovation. According to Ferrari (2020) in Europe, the Monetary and Financial Code indicates that the only legal tender currency in France is the Euro. As a result, crypto-currencies cannot be used in payments and it is possible to refuse them without violating Article R162-2 of the Monetary and Financial Code. Crypto currency is used to purchase goods and services from professionals who accept it. One of the outstanding features of crypto currencies is that they allow transactions to be carried out anonymously. With a traditional currency, transactions must go through a bank that knows the name and contact details of its customers as well as the people and organizations with which they carry out transactions. On the contrary, crypto currencies work according to a decentralized system thanks to encryption keys (blockchain principle) which do not require any identification. It is therefore impossible today to regulate its emission. Thus, the use of crypto currency like Bitcoin currently poses a challenge for legislators and other regulatory authorities, which fought against money laundering and tax evasion.

On the other hand, banking and financial regulations have clearly defined all the traditional means of payment, and even the category of financial instruments is grouped in assets related to personal rights such as equity securities, debt securities, and financial contracts. While crypto-currencies and their related activities are neither regulated nor well understood. Like, for example, Bitcoin, which does not correspond to any of these classic notions of finance. This is because it is generated by a computer program and does not give rights to anyone in particular. As a result, the lack of regulation allows the different parties to the contract to accept or refuse to be remunerated by crypto-currency. Indeed, since the latter is not a currency like other regulated currencies such as the euro or the dollar, a party to the contract cannot

require the other party to accept payment by crypto-currency. This lack of regulation could be a danger to contractual relations (Kher et al. 2020).

Several central banks presented the different dangers associated with the use of crypto-currencies, because it is a virtual value, and it is not backed by any real activity. Characterized by high volatility, long transaction times, and above all a legal risk linked to the status of an unregulated currency resulting in the fact that it presented no legal guarantee of repayment at any time and face value. Another danger arising from the use of crypto currency is that no authority ensures the security of electronic safes, the guarantor of the security of holders, and which has no guarantee in the event of theft following hacking operations. Finally, another danger arises from the random nature of the convertibility of crypto currencies into legal tender because based on the principle of supply and demand and therefore the risk of blockage and collapse of the system in the event of absence or insufficiency of buyers to redeem crypto currencies against currencies. Currently, it is impossible to regulate the issuance, and the challenge for lawmakers and other regulators for crypto-currencies is the fight against money laundering and tax evasion.

This is due to the use of this innovation which does not identify the different parties of the transaction. However, several platforms for the use of crypto-currency, have expressed their dissatisfaction with the plans to regulate these crypto-currencies, and find that these regulations are an infringement of the freedom to conduct online transactions privately and an attempt to extend the scope of financial supervision of banking institutions to crypto-currencies. And the financial records that will now have to be revealed contain a lot of sensitive information about people's lives, their beliefs, and affiliations.

5.2 The Creation of Competing for Virtual Currencies

This situation leads national financial institutions to set up projects to create virtual currencies as a response. And in many countries, their financial bodies are working on launching their public digital currencies, like the digital euro project. Crypto-currency is a form of virtual and digital currency that does not need to exist physically to be of value. Cryptocurrencies have become increasingly popular thanks to the decentralized peer-to-peer exchanges that have developed. In January 2021, India paved the way for cryptocurrency regulation, which could go as far as a ban on private crypto-currencies. A decision that would be taken in parallel with the establishment of national electronic money, backed and managed by the Central Bank of India. The E-euro would be issued by the ECB, would trade at 1 to 1 parity with the Euro, and would complement or even substitute for cash. A public crypto-currency, regulated by a central bank, backed by a currency, is of course more secure than a private crypto-currency. Moreover, the digitization of central bank money will, in countries where cash is in decline, guarantee citizens' access to central bank money. Thus, having a Central Bank Digital Currency would allow preserving confidence in the financial system which results in part from the possibility of exchanging one's assets

for legal tender. In Russia, the Central Bank announced in October 2020 that it was evaluating the possibility of creating a digital version of the Ruble. China embarked on the creation of a national crypto-currency in 2014. A project that would be very ambitious, to ban Bitcoin on its territory. Finally, it must be said that crypto-currencies are a major issue for the financial system facing public authorities, central banks, regulatory authorities, credit institutions, and citizens. However, regulation is the majority proposition. We note that the majority of authorities have warned and are proposing framework conditions to protect the market and investors.

6 Conclusion

Crypto currency can only perform perfectly the classic functions of a real currency. But currently, everyone uses them as a medium of exchange despite the risk of their true nature. To minimize the risk relating to this category of currencies, other crypto currencies have emerged, called stablecoins, which have the particularity of being backed by baskets of safe assets, and unlike first-generation crypto-currencies, they have intrinsic value, which will help make their prices less volatile. Thus, backing to official currencies moves stablecoins away from the free and volatile side that characterizes the first generation of crypto-currencies. Thoughts in favor of the creation of digital central bank currencies called stablecoins have been fostered by the perception of a threat to the monetary sovereignty of each conventional currency. The new stablecoins are not simple official alternatives to crypto “currencies” from private networks, but they also allow access to stable private or individual corners called retail CBDC (Central Bank Digital Currency), in the form of accounts, or to open access to non-bank intermediaries (wholesale CBDC). These new private or wholesale creations will certainly structurally modify the process of monetary creation (in the true sense and not of crypto-currency) and even the channels of transmission of monetary policy. Importantly, a retail CBDC introduces “digital” banking risk, the effect of which can be significant financial stability. These reasons alone justify slowly deepening the reflection on the creation of this type of crypto-currency. This race for power is, according to Dupré et al. (2015), a common destructive element from an ecological point of view, because it is terrible in consuming energy. The question that arises is, what ecological cost will be paid for the proliferation of this type of crypto currency which is based on blockchain technology?

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Supply Chain Sustainability Management Through Blockchain Technology in Maritime Industry



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Abstract Nowadays, integrating new technology into all management processes leads to significant evolution, particularly in the logistics business, which is one of the fourth industrial of Industry 4.0. Blockchain, an emerging idea, provides for the decentralized and unchangeable storing of verified data as integrated technology. The shipping industry has had to look for innovative ways to keep the accelerated growth of the planet on track, in the face of development threats and vulnerabilities from the mild development of foreign markets, expanding protectionism, correcting natural guidance, the current episode of COVID-19 pandemics. One of the successful innovations in blockchain technologies was to promote a computerized market change. It is also making the utilization of blockchain innovation in the maritime industry will empower quicker, more secure and more productive businesses. The objective of this study is to review sustainable in supply chain management through blockchain technology in the maritime industry. This work was done by discussion of literature by classifying the application according to the operation in the shipping process.

Keywords Blockchain · Supply chain management · Logistic · Maritime industry

1 Introduction

Beginning with product design and development and continuing through material selection (including stuff extraction or agricultural production), manufacturing, packaging, transportation, warehousing, distribution, consumption, return, and diversion, that is Sustainable supply chain management (SSCM) includes the incorporation throughout the whole life cycle of the supplier chain of ecologically and financially feasible methods. Environmentally sustainable management of the supply chain and

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practice may help businesses not only reduce their overall carbon footprint but also optimize end-to-end operations due to avoid wasting money and generate additional revenue. All supply chains can benefit from using sustainable practices.

Other than that, environmental management, conservation of resources, carbon footprint reduction, financial and sustainable savings and also social responsibility all fall under the scope of sustainability in the supply chain. To succeed, supply chain sustainability practices must deliver improved environmental performance within a financially viable operating construct.

Supply chains (SCs) are becoming increasingly complicated according to the result of the current economic situation and globalization (Varma et al. 2006) and according to Gold et al. (2010) creating, coordinating, and engaging within the SC has become a difficult undertaking task. Due to the growing social and environmental issues, it is necessary to change the focus from organizational level to SC, and also to match organizational objectives with sustainability goals Gold et al. (2010). To achieve the sustainability goals, all stakeholders in the SC must work together. Organizations will continue to be hesitant to adhere to sustainable standards unless explicit regulations are enacted. The success of sustainable initiatives is measured differently from one company to the next (Searcy et al. 2009).

The supply chain also provides an integrated process of planning and execution which includes the flow of information material and capital. Supply chain management can be defined as the process of managing the flow of resources, goods and services in the context of their storage and transportation. Globalization, diverse regulatory policies, and varying cultural and human actions in supply chain networks make it difficult to evaluate the knowledge and risk management capabilities in the dynamic field. There is a need for better information exchange systems considering the factors such as uneconomical transactions, bribery, and weak supply chains as they lead to a lack of trust.

Other than that, supply chain businesses need consideration trust to rely on a single or broker to store their critical and confidential information. Single-point failure is another considerable of centralized information systems that leave the entire system exposed to distortion, hacking, corruption, and attack making them vulnerable. Such drawbacks raise concerns as to whether existing supply chain information systems are capable of supporting the information required for the timely provenance of products and services in a way that is transparent and secured sufficiently. The approach to these complicated problems is to increase the reliability of the supply chain, protection, durability, and quality of the processes. This, using blockchain technology is a potent solution to supply chain problems and drawbacks.

The functions of SC make a significant contribution to the field of sustainability and initiatives would not be possible without the involvement of the SC management function when viewed from a life cycle perspective. All structural components which affect the behavior in accordance with Supply Chain Management (SCM) literature include planning, monitoring, workflow design, organizational structure, and knowledge management and communication structure. On the other hand, the SCs can be less defined and more complex to coordinate with practices, leadership, risk control, incentives and recognition, culture and attitude, and trust and engagement (Winter

and Knemeyer 2013). Sustainability ideas have emerged in recent literature as one of the main breakthroughs in SCM. The current literature review provides an evaluation of SCM policy in three main areas.

With the emergence of blockchain technology, new technical innovations and implementations make these progress initiatives more organizationally, technically, and cost-effective. Blockchain is essentially an innovative technology for supply chain architecture, development, processes, and general management. The ability of blockchain to guarantee the transparency, traceability, and authenticity of the information, together with intelligent contractual relationships for the trustless world, all suggest a substantial reshaping of supply chain management.

Hence, four major entities are responsible in supply chains based on blockchain which is not seen in conventional supply chains. The first entities are registers, which provide actors in the network with specific capabilities; the second are standards organizations, which establish frameworks for values such as fair-trade for sustainable supply chain or blockchain policies and technical needs; the third is suppliers, which grant actors certifications for network participation in the supply chain; and the last are actors, which include suppliers, distributors, and consumers. The purpose of this research is to look into the interaction between supply chain management and blockchain technologies in the maritime industry.

There are also several existing initiatives in the maritime industry that use blockchain technology and recently examined to use a case to show. However, generally, these activities are at the primer stage and include the utilization of a private, permission stage among a select or restricted gathering of members. Before huge opportunities usage of blockchain, some various barriers and challenges should be tended to. A few of these boundaries and difficulties were presented in the company groundwork record (Green et al. 2020).

The costs of developing, utilizing, and managing a blockchain-based system are extremely complex and rely on the type of network, the data, and storage requirements, the number of users, and some other variables that will depend on the implementation and use of the platform. Although they cannot be calculated on a large, general basis, these costs are necessary to consider. In sense, for each program and case of use. The maritime sector's security issues and vulnerabilities have called for ways to safe and secure data. Blockchain is also identified as enhancing data protection and reliability over the conventional centralized databases until security and reliability problems are completely resolved or avoided (as example blockchain is presented as "trustless" and "unchangeable").

According to Ytterstrom and Lengerg (2019), there is also a separate geographic area with technical resources required for the use of blockchain technology. Further obstacles related to inclusion in maritime includes questions over high implementing costs, and the low levels of use of other players in the market, where stakeholders conclude that if such leaders take action or vital masses, others will be effective (Gausdal et al. 2018; Ytterstrom and Lengerg 2019). Therefore, the question that arise is does the blockchain technology in the maritime industry is ready to use in the maritime industry. Thus, the objective of this study is to review sustainable supply chain management through blockchain technology in the maritime industry.

The structure of this study is followed by literature review by all the factors of sustainable supply chain, and conclusion and recommendation.

2 Sustainable Supply Chain Management

According to Genovese et al. (2017), there have been several research articles published in both qualitative and quantitative domains that have focused on sustainable supply chain management (SSCM). As a result, sustainability concerns must be included in the SC's core activities, including sourcing, manufacturing, distribution, storage, warehousing, consumption, and recycling. Due to current trends of industrialization, market fluctuations, the uncertainty of demand, and economic challenges, commercial businesses have been under tremendous pressure to preserve the current SC. Focusing just on SC's internal efficiency will not provide a competitive advantage. When sustainability concepts are incorporated into a company's core operations, it achieves a strong market position in the global market (Khodakarami et al. 2015). Therefore, firms are under huge pressure to modify their existing SC to meet the new sustainability needs, as the conventional SCM becomes the SSCM (Busse et al. 2017). The SSCM management approach incorporates environmental considerations, social performance, and economic contribution. Customer demand was diverse, and product components were complex, resulting in severe inside company competition as well as global competition (Raut et al. 2015). SSCM also develops the necessary skill set for businesses to differentiate themselves from their competition (Khodakarami et al. 2015).

Moreover, certain firms have pledged to take sustainability initiatives to make their SCs more sustainable. Sustainable development enhances the use of ecologically friendly products and production processes that are free of pollution (Xie 2016). The sustainability theory encourages firms to adopt practices such as returning products to manufacturers at the end of their life cycles and managing returns in an environmentally friendly manner (Zhu et al. 2005), while also integrating green strategies at all levels of the supply chain, maintaining healthy working conditions, fair compensation practices, equal human rights, and cultural diversity (Zhu et al. 2005).

SSCM is such a strong tool in today's difficult and competitive world that it has the potential to transform company effectiveness regarding social and environmental performance while also improving profitability (Seuring and Muller 2008; Tseng et al. 2015; Fahimnia et al. 2017). Academic study on SSCM has received a lot of interest in recent years. However, a comprehensive academic investigation is required to assist SC management in their decision-making process without compromising the value of sustainability.

A socially sustainable supply chain can be developed with the help of blockchain technology. Since information cannot be charged without permission from approved actors, blockchain prevents corrupt individuals, governments, or organizations from unlawful seizing people's properties. Blockchain technology can also block sinister

agents and keep corrupt to account for social as well as individual misdeeds. Traceability of blockchain involves sustainability through greater human rights security and equal safe work standards.

3 Blockchain Technology

With blockchain technology, the scam can be avoided due to the integrity and transparency of blockchain. They established a reputation-based mechanism that addresses the inefficiency of ETS and encourages at participants to find a long-term solution to the reduction of emissions. Effective employment of blockchain technology to manage supply chain processes and products begins with effective participation and investments in sustainable practices. Therefore, the incorporation of blockchain technology can lead to the development of sustainable supply chain practices regardless of the business sectors. Inside the range of maritime industry, inter-firm information about the sharing systems is obsolete and manual cycles that win most of its supply chain. These outcomes make less coordination among industry players, raise a security risk and an expanded outstanding burden for specialists, diminish trust between the parties who collaborate in the maritime industry and eventually lessen the general the effectiveness of the business measures (Jensen and Govindan 2014). Besides, within the several of collaboration and connection, several guidelines and also the expense of the data, which is can make a decline or obstruct the worldwide exchange (World Economic Forum 2016).

The others challenges are privacy, security, and safety. Privacy is a possible issue in all situations involving blockchain, since ledger documents are meant to be immutable, and what might be considered private or confidential data may be accessed and exchanged by all parties (Andoni et al. 2019). Privacy and security issues are of specific interest in the maritime industry, based on the knowledge and data exchanged and on which or if any confidential information can be accessible to others. In recent research involving an interview with maritime stakeholders, participants noted that data security is desirable and data sharing and transparency are discouraged, provided that “competition is fierce” and that a lot of market players are practically competing with the same commodity” and also because of lack transparency and desired to keep trade secrets (Ytterstrom and Lengerg 2019).

Meanwhile, according to Clift-Jennings (2019), the ability to tamper with data is an important drawback of blockchain-based applications until blockchain reporting. Blockchain usage does not ensure that the evidence reported in ledgers is accurate and does not preclude data from being altered until entering a blockchain ledger. This may have significant consequences if the data stored in the blockchain were used to validate compliance with protection or environmental regulations. In the case of IMO 2020, as an example, there could be a major financial opportunity to use non-compliant petroleum, based on the price difference between compliant and non-compliant fuel. The company Filament has a business that established a mechanism integrating hardware and software that can be used to indicate whether the computer

has been tampered with and if so, would no longer ‘sign’ or ‘attests’ the accuracy of the data or enables it to be released on the blockchain (Clift-Jennings 2019).

The Filament method shows the importance of understanding the opportunity for tempering and the need to reduce the likelihood of tampering to the degree practicable when relying on evidence to validate compliance- while also showing that attempts are being made and are likely to continue to resolve this issue (Green et al. 2020). Although there is no such technology for maritime industry application has been identified (in this work), attempts are being made in the maritime field. Create and implement an application that can, for example, check the document and verify and validate the data until it is released on a blockchain.

Blockchain can, minimize or eliminate transaction costs in the form of broker fees, time and procedure fees or other transaction costs consistent with the status quo. But blockchains and the equipment, computers and other system element needed to use the blockchain that comes at their own risk. These costs are quite complex and, in some cases, extremely high. Blockchains themselves are costly to develop: it should not be recognized if the reduction in processing costs offered by blockchain would not largely be offset-if not exceed by the cost of adopting blockchain in reality (Andoni et al. 2019). Blockchain infrastructure expenses included hardware, software, computers, and other facilities, training and services and fees such as smart contract fees, application/services fees, transaction fees for blockchain platforms, or blockchain-as-a services charges- where users pay for blockchain nodes, data writing, storage, and hourly charges on continuous basic (Green et al. 2020).

Theoretically, until authenticated and entered into an open-sources blockchain, data is permanent, prohibiting data from being tampered with the blockchain technologies, however cannot guarantee the data has not been tampered with or compromised before to being checked on the network. For example, if machined sensors or networked devices malfunction, are defective, or are tampered with, or if data is distorted or inaccurate for a variety of other reasons then this data is incorrect then, store it in the blockchain (Reyna et al. 2018). For the public authorization further blockchain, for practical reasons, the faulty data or documents will be immutable; secret, approved blockchains, data are not permanent and can thus be changed- errors can be resolved more quickly, albeit at the cost of confidence that most or all (correct data has not been altered). Blockchain networks are often more vulnerable to attack and security vulnerabilities than is usually expected. Blockchain was previously perceived to be “unhackable” but is now being hacked at an increasing pace (Orcutt 2019).

Stakeholders in the industry agree that standardization between platform and implementation is required and interoperability is needed. This is one of the most significant important barriers to the use of blockchain technologies in the maritime industry (Ytterstrom and Lengerg 2019; Wagner and Wisnicki 2019). For example, in the spring of 2019, the Digital Container Shipping Association was founded by major players in the field of container transport such as A.P. Moller-Maersk, Hapag Lloyd, not only for blockchain, is working towards fostering universal market standards in the container sector. Additional initiatives include the Transport Partnership Blockchain and the program of the World Economic Forum to allow blockchain

usage in an “interoperable, accountable and equitable manner”, with members such as A.P. The City of Los Angeles, Moller-Maersk and Port of Rotterdam (Wagner and Wisnicki 2019).

4 Readiness of Blockchain Technology

Recently, the maritime industry has had to look for innovative ways to keep the accelerated growth of the planet on track, in the face of development threats and vulnerabilities from the mild development of foreign markets, expanding protectionism, correcting natural guidance, and the current episode of COVID-19 pandemics. The industry is witnessing the emergence of Industry Revolution (IR) 4.0 being attempted to trouble itself. One of the successful innovations in Blockchain technologies was to promote a computerized market change. It is also making the utilization of blockchain innovation in the maritime industry will empower quicker, more secure, and more productive business (Morabito 2017).

Blockchain, the underlying technology for Bitcoin, is one kind of Distributed Ledger Technology (DLT) known as a distributed, decentralized, cryptographic database that functions as a non-reversible and incorruptible centralized database (Wright 2015). The principle of blockchain therefore, is incredibly broad and thus the meaning has not yet been defined explicitly and generally accepted. Nevertheless, Seebacher and Schüritz (2017) could concisely and comprehensively describe blockchain as follows:

A blockchain is a public database shared among the peer-to-peer network and decided upon. It consists of a connected series of blocks holding timed transactions which are cryptographically encrypted and validated by the network group. If a blockchain feature has been added, it cannot be reversed, making a blockchain into an unchangeable archive of past operation. (Seebacher and Schüritz 2017).

Hence, as the description states, a blockchain contains a database or a directory that sequences all the transactions. In addition, blockchain can be known as a “continual digital transaction register” (Condos et al. 2016). The sender, transaction information, and recipient constitute the transactions. Each transaction has a time stamping which is exchanged with the participants of a network of pairs to pairs.

In addition, in the shipping industry, it also plays an important role in further strengthening the security of users and data. The blockchain can change and optimize transport and benefits for everyone—importers, exporters, air carriers, ship owners and even governments—in the transport process. The reduction in administration is one of the key advantages to implementing blockchain in shipping (Jugovic et al. 2019). For shipping, although know the traditional model, has adapted effectively to all of the new technologies through much of history and has therefore quickly accepted all the benefits of information technology.

According to Swan (2015), the blockchain ensures the accuracy of all entries, decreasing the probability that shipments will be damaged or lost. The replacement

of the electronic communications system by the blockchain means that all parties involved have access to information that facilitates effective operations planning, saves and ensures integrity for all entries, and thus reduces the risk of shipments being damaged or disappeared.

Blockchain technology is still quite unreliable, no underlying specification is available: definitions are hard to master, and even in simplest modes of implementation programming interference is required (Tijan et al. 2019a). In addition, lack of enforcement causes insecurity, since such facades of intelligent contract technologies can only be overregulated or even unlawfully implemented by the logistics industries.

According to Tijan et al. (2019b), scalability and efficiency issues have struck blockchain technology: any node in the chain needs to handle all the transactions and this is a concern for massive and particular in global reels. “Technology is also extremely energy-intensive and evidence simulations spend a considerable amount of computing time. In comparison, user data can be reduced because all nodes contain a complete copy of the directory and there is no single communication authority in the event of a clear breach of security.”

Appropriated trust and security and protection are at the center of blockchain advancements, and can either make them a triumph or cause them to fall flat (Karame and Capkun 2018). Personal data and confidential data in general, where they are vulnerable to threats and misuse, must not be relied on by third parties (Zyskind and Nathan 2015).

5 Factors of Influence Implementation Blockchain

5.1 *Physical Resources*

These resources are required to be the physical perception of the resources. Although physical capital resources are focused on technology, business facilities, location, and access to raw materials, human resources provide preparation, expertise, and insights for individual management and company staff, whereas organizational capital resources take into account both the company’s structured reporting system and informal ties within the companies’ classes (Barney 1991). The categorization exposes the scope of the resources-based view, as it is challenging to measure and highlight the resources which are more important and which can ultimately be a competitive advantage. Whether or not this can be achieved with the resources provided depends on the requirements whether the resources of the organization can be considered as valuables, uncommon, intimate, and replacement (Barney 1991; Diercx and Cool 1989). A resource is viewed as useful if it can use environmental factors to achieve benefits for the business.

A critical resource is often needed to tackle threats from the world of the organization, including competitiveness measured (Barney 1991). However, considering

the importance of capital, they do not have a strategic edge if each competitive organization can reach them. If any individual can purchase useful goods, the true gain is minimized by retaining them. If services are of a certain rare character and thus cannot be used by other firms, it is beyond the realm of possibilities to gain a strategic advantageous role. However, this choice is only available, if a third condition, which means, in fact, that a resource cannot be gained by competing for enterprise and is instead therefore managed by a single corporation is met (Barney 1991).

The historic achievement would then take an organization to a strengthened role in its current state (Dierickx and Cool 1989) there is causal uncertainty where the relationship between the assets and a sustainable competitive advantage is not understood (Peteraf 1993; Barney 1991). Therefore, no one can emulate a higher role if nobody knows why. Finally, social variability is the third state and source of capital that is imperfectly imitable. According to this phenomenon, services can be imperfectly imitated if they relate to complex social characteristics, such as employee relations, that can hardly be influence led by the organization (Barney 1991).

Physical resources are capable of acquiring and continuously adapting and innovating logistic equipment and services in the use of these resources. RBV theoreticians argue for the main source of strategic advantage in strategy literature (Penrose 1959; Wernerfelt 1995; Barney 1991). Technical capabilities include hand tools or robotics such as special equipment and physical instruments to accelerate manufacturing and cost savings (Barney and Clark 2007). The strategy literature argues that plants and machinery are especially important in the production, service and placement of the whole enterprise (Penrose 1959). According to Persson and Virum (2001) and Facanha and Horvath (2005), its state finding that physical resources will contribute to firm success. Likewise, the logistics literature admits that it can offer logistical services and improve the management of logistical activities through physical infrastructure including facilities and materials, for example, warehouses and vehicles. The transportation of raw materials, work in process or finished products requires physical resources (Closs and Thompson 1992; Stainer 1997; Bowersox 2007; Karia and Razak 2007). According to Olavarrieta and Ellinger (1997), physical resources can improve logistics management, save costs and improve customers loyalty and distribution efficiency. Based on (Karia and Razak 2007; Wong and Karia 2010), the ability to gain and use enough physical infrastructure will save money and increase delivery efficiency and customer loyalty. Greater use of physical energy, for instance, the use of cargo to supply many customers, would enable suppliers to gain economies of extent.

In addition, it can achieve cost-effectiveness by offering a wide range of facilities with the same physical infrastructure. This would contribute to cost-efficiency and productivity of service, enhancing the size and reach of physical infrastructure. In addition, such physical infrastructure will contribute to creativity in logistics, added value, consumer demands fulfilled, and warehouse and transport activities improved and cost improvement (Gammelgaard et al. 2006). Innovative logistics and intelligence systems may be used with physical resources.

5.2 *Human Resources (HR)*

Blockchain preparation permits valid labor contracts to be handled in accordance with local legalizations between customers and workers to be covered (Pinna and Ibba 2018). There is also a wide community of work in this field provided that the function of human resources (HR), alongside globalization, has increased constantly. Evolving business environment, the framework of organization, and cultural and technical advances are being implemented. HR experts are a central player in advising the company as a ‘change creation agent’ and leadership participants make real behavior improvements that impact the operational effectiveness of their respective activities (Deshler 2016).

According to Andrew Spencer, a UK research-based HR technology consultant and researcher who believes that the four regions where blockchain may be used are identification authentication, payments for jobs, platforms for job matching and identity management (Ahmed 2019). Under blockchain systems, it has given HR a forum to streamline operating processes and take further time for settling problems and contacting stakeholders. In operations involving services like personnel, time and capital, blockchain will consider potential risks and inefficiency solutions and can be managed as needed to convert blockchain technologies into less information collecting and verification. An example is a blockchain ledger, such that it is a true tool for analyzing the application history (Aishwarya 2018). To have confirmed, blockchain software must be effective in the procurement of audits, so correspondence and logistics costs should be spending outlay charges.

Using blockchain in HR activities would support the connections between parties in updating capability and understanding among employees (in specific agreement). It provides also an information function that addresses requirements for the sector and what the training provider has to make satisfying the business needs. HR may be flipped mechanism to create consensus between the different parties in the blockchain system. Therefore, on both sides of the job partnership, blockchain may give a great profit from the capacity of citizens to sustain and manage their schooling, expertise, and workplace efficiency as part of a large, secure blockchain-based track. In addition to blockchain the strength in working places (Bilton 2007).

According to Brymer and Hitt (2019), the power of blockchain is required to allow and sustain the workforce’s talents and skills and it will function right together. The rewards of the increasingly up-to-date education passport for the employee became all the more for themselves and employers-as the gig industry movement persisted and younger workers moved occupations more often or opted for portable careers.

The complexity and intensity of its significance suggest that blockchain can be extended as a technology to some areas of HR. While blockchain has started to build the competitive edge and HR features must follow it now or face staying behind. The latter value of blockchain’s HR is a way of concentrating productivity gains. The improved capacity to connect individual abilities and succession with employment would further boost market efficiency. Indicate by Fachrunnisa and Hussain (2020) and Hackius and Petersen (2017) it is anticipated that blockchain systems will boost

the openness and accountability of value chain networks while promoting more versatile value chains. Specifically, blockchain-based technologies can breakthrough in supply chains, by concentrating on the idea of visibility, optimization, and demand for all three. Blockchain can be used in logistics, detection of counterfeit goods, reduction of paperwork handling, facilitation of origin monitoring, and empowering businesses (Dorri et al. 2017; Polim et al. 2017; Dudder and Ross 2017) and vendors to process directly without coercion by providers and consultancies (Subramanian 2017).

Human Resources have the relationship between blockchain technology in the Maritime industry. After its initiation, few organizations have possessed adequate skills and technological knowledge to use the technology. One must have specialized information management experience to be able to understand the possibilities, costs, and advantages of this novel technology.

5.3 Information Technology (IT)

In the RBV system, IT is also considered an essential resource to gain a sustainable competitive edge (Barney 1991; Wade and Hulland 2004). The role of other resources as complementary effects of IT on corporate performance is studied in recent studies (Powell and Dent-Micallef 1997; Tippins and Sohi 2003; Wade and Hulland 2004; Jeffers et al. 2008; Kohli and Grover 2008). In particular, complemented by other tools or activities, IT is an important business resource. According to Kohli and Grover (2008) argued, "It does not just create value hardware and software tools alone, but must become part of business value process of creating other IT's and synergetic organizational factors".

The literature of the strategy suggests that, as the technological capabilities increase, a company's competitive advantage (Barney and Clark 2007). In the RBV literature, technology tools are key tangible sources that enable a company to connect with clients, network with business partners and sustain customer ties (Ray et al. 2004). Similarly, the logistics literature recognizes that technological tools such as IT logistics services, shipping information system and web-based links, monitoring and tracking, allow quick response and easy access to information and reduce time, save money and customer loyalty (Sanders and Premus 2005; Brah and Lim 2006). Previous logistics studies point out that the logistical performance was demonstrated as a strategic resource (Chiu 1995; Hammant 1995; Alshawi 2001; Aldin et al. 2004; Lai 2005). Technology will help any part of the company, from order management to logistics (Makatsoris and Chang 2004). Technologies promote better collaboration and allow consumers and suppliers of logistics networks to exchange and access information. Efficient collaboration and knowledge sharing allow to capture customer needs and enhance customer experience.

New technology advancement requires integrated information management and chain technologies to be provided that represent an important phase in the development of creative service (Wong and Karia 2010). In addition, doing IT would minimize data reentry and mistakes and result in cost savings (Aldin et al. 2004).

5.4 Reputation Resources

In a typical P2P network, credibility as a motivating tool is sometimes exploited (Xiong and Liu 2004) and (Zhou and Hwang 2007). In recent years, blockchain has infiltrated the integrity paradigm. According Dang et al. (2019) suggested a consensus and reward system focused on dependability that took account of economic gains and misbehavior. Their architecture is, however, tailored to CA but does not answer the question of scalability. To minimize Power of Works' (PoW) high computing costs, Blockchain-Internet of Things (B-IoT). According to Huang et al. (2019) and Proof of Trust (PoT) each suggests credit-based PoW schemes. PoT creates the integrity of a node depends on the trusted network. To protect against threats, however, they embrace a seeding of faith, which establishes a collection of trustworthy nodes and builds the trustee network around them. According to Yu et al. (2019), the reputation of blockchains was attempted as they suggested a reputational weighting framework consensus to ensure that high computational costs are avoided, as in PoW. Their reputation is based however on the total number of valid works which have been valid right from the beginning of the chain. If high-profile users collide with each other, a serious monopoly issue and double-spend attacks can result. In comparison, novice validators have very trouble reaching the consensus and earning the prizes. More seriously, if an intruder reaches the beginning, his device could be overcome.

5.5 Organizational Resources

When a new system design is introduced into an industry, executives are essential decision-makers as regards approval. Nevertheless, the stage of the managers perception of the technology is connected to their response. Decision-makers tend to exercise caution when encountering uncertainty. Blockchain is not only new, it is now regarded as advanced network technology. For the implementation of applications, device suppliers and engineers have a great influence (Prewett et al. 2020) placing consumer companies in unequal positions. Adoption, for instance, needs a lot of capital spending, making it impossible for other infrastructure suppliers to change into this supplier in the future. Since blockchain is a network framework close to RFID, it's not realistic to incorporate it alone. Both relevant sections are expected to be involved in the project. While connectivity is crucial, it is also demanding, because organizations need to be wary about communicating internal knowledge. Each party

is in this context attempting to ensure that access is provided only to information or data relevant to the application and good relationships with each other.

While blockchain is today one of the most relatively secure software, businesses are reluctant to invest in an innovation that may be used outdated. To first of all it has not a data set because blockchain is a distributed ledger so no record keeping is unfortunately needed for the deletion. Furthermore, there can be no guarantee that those who use the platform do not use this process once another technology like quantum computers has been developed. As always, costing constitutes a major obstacle to the construction or the development of new technology (Choi et al. 2020). The cost of implementation is high, as there is an involvement of facilities, software, facilities for downtime, and maintenance. According to Prewett et al. (2020) when building systems, blockchain platform vendors and developers keep a lot of influence, which places consumers in an unequal position. Blockchain vendors can try to lock their users in certain environments in this way.

Not much about the technical limitations can be realized in organizational terms. However, administrators can also be caustics for institutional difficulties. The launch of blockchain can be significantly helped by increasing staff consciousness on all levels with training and workshops. Furthermore, managers are strongly encouraged to produce new intelligence in novel technologies such as block channels and operational systems. Managers can foster information by interacting with education institutions and defining strategic specifications.

The competencies in the development of structures, routines, procedures, business processes and methods of doing things that have positive effects on the agenda and mission of a company are organizational tools (Hofer and Schendel 1978; Tomer 1987; Grant 1991). The literature on the strategy states that organizational resources are significant intangible resources (Hofer and Schendel 1978; Tomer 1987; Barney 1991). Organizational capital enables companies to develop and implement plans to address the customers' needs to achieve sustainable competitive benefits (Barney and Clark 2007).

Organizational resources are used to organize business activity and to leverage the expertise and skills of other companies effectively. Previous research determined that corporate capital in terms of culture, routines, and services may have important positive impacts on company success (Barney and Clark 2007). The logistics literature recognizes the primary success factor for the organizational capital (Karia and Razak 2007; Panayides 2007). The development and achievement of strategy and goals in routines and procedures require organizational resources.

6 Conclusion

Blockchain is certainly one of the most fiercely disputed issues in recent years, and it has the potential to have a long-term impact on the maritime industry. Business processes in the maritime industry were defined, and the present level of blockchain technology was examined in this study. To assess the direction in which blockchain

technology is growing, the research was performed by gathering the most significant ways of employing blockchain technology in the maritime industry, with a focus on marine transport. According to the instances studied, the influence of blockchain technology on the transportation sector is unquestionably beneficial. Because not all stakeholders are aiming to adopt comparable blockchain solutions and platforms, one of the problems that blockchain technology confronts is a lack of standards. As a result, there may be an interoperability issue. Although blockchain technology (Abeyratne and Monfared 2016) provides a novel platform for a new decentralized and transparent transaction mechanism in industry and business, it is still in its infancy. There are several trials and blockchain pilot projects taking place throughout the world, but they are now largely tied to smaller firms, such as industry participants (Maersk, IBM), who have begun to form their alliances to reap the benefits of Blockchain technology. Nevertheless, successful projects will almost certainly see rapid growth in the shipping business as well as the broader transportation chain. Various experts believe that successful blockchain adoption is only feasible if all parties, including shipping lines, terminal operators, manufacturers, banks, insurers, brokers, and port authorities, are involved in the process. Benefits of Blockchain technology, such as lowering document processing time, will not be fully used as long as it exists only in a restricted region inside a smaller pilot project. One of the primary advantages of Blockchain technology in this regard is that it reduces the need for paper documentation.

The global maritime industry, especially marine transport, still uses a huge number of paper documents, lengthening the time it takes to process data, and every move that improves the existing situation might have a big impact on the whole business. In this instance, blockchain may record all document modifications and make their location visible to all other interested parties. Nobody can simply fake the paper trail using openly available distributed blockchain that are not proprietary to a single firm. Positive elements of blockchain might also transform the whole shipping sector and global trading procedures if the risk of blockchain is managed appropriately. In the next ten years, blockchain may improve business by over \$1 trillion, by reducing risks, removing obstacles, and simplifying trade procedures (World Trade Organization 2018).

For the recommendation, the blockchain technology is importance for the transaction especially for the maritime industry. This study is based on the literature review and so provides an initial summary of the relevance of the positive effects, difficulties, and barriers of blockchain-based information sharing. Because there are so few studies that provide a complete overview of blockchain in the maritime transportation sector. Future research will look into the unique nature of maritime transportation in comparison to other industries in terms of accepting disruptive technologies like blockchain, as well as the role of government authorities in the acceptance and use of blockchain in the maritime transport sector, because rapid technological change poses new challenges for the industry. The limitation of this study is only examine the factors influence implementation the blockchain in the administration in the maritime industry.

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The Proclivity of Green Communication for Logistics Industry: A Framework



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Abstract Nowadays communication has become a strong part in transferring information. Wireless devices have thrived in number recently, which connects the world by people and objects. The demand of internet has become the backbone of our communication network recently. The energy consumption increasing drastically due to the current situation caused by pandemic COVID-19 disease which forced the economic activities to use online medium as the main platform in doing business. The extensive usage of online data for communication has contributed to the massive increasing number of high energy consumption. It has been identified that green communication is one of the alternative approaches in reduction of energy consumption. However, there exists a gap on the application of green communication in logistics industry which is to say that little research has addressed the implementation of green communication in logistics industry. The importance of having sustainable energy sources has led towards good implementation of different techniques and methods in reducing energy consumption. As logistics industry has become the backbone of our economic activity, it is important to have a good energy saving strategy in implementing a sustainable practice. This paper highlights a review of ‘Green Communication’ (GC) application especially in the usage of communication technology as the medium, with its main objectives in the implementation of good practices towards clean energy approach. This study has gone through a systematic review focusing only on ‘Green Communication’ in order to examine the current research findings regarding GC. The findings are particularly relevant for logistics industry especially for those that involve in irresistible communication networks while preparing and implementing a good and sustainable practices. To further enhance the energy efficiency for GC networks in logistics, an integrated

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data-driven framework is developed and exemplarily applied on logistics industry in Malaysia. This paper proposes a framework to introduce lists of factors that contributes towards GC in logistics industry.

Keywords Green communication · Energy consumption · Logistics industry

1 Introduction

Environmental problems and energy conservation were seen to be a serious problem nowadays. In the point of view from the scientific, socio-economic or cultural, these problems have been the main concern that need to investigate. In order to protect the environment, reducing the impacts of energy consumption and carbon emission is a must. One of the ways to improve energy efficiency is to look into the energy consumptions. One of the biggest users of energy consumption is through communication. Yan et al. (2018) highlighted that information and communication technology (ICT) is closely related to the future global energy consumption.

Information and communication technologies have great impact on the way logistics and supply chain processes. Current situation had forced communication sector to look for new methods of serving fast and efficient way for the needs of varied users. It's becoming much clear that technology recently helps the communication process become easier and more efficient. As technology continue to push the envelope on services and applications especially in logistics activities affecting the performance of this sector to become one of the leading economic contribution during this pandemic situation.

Modern technologies have forced rapid expansion of communication technology development. Almost all businesses nowadays used communication technology as a medium to transmit information. Nowadays, wireless networks technology has been widely used. The internet is one of communication technology that is growing at tremendous speed. This development imposes high demand of energy usage. It can be seen that no energy efficiency is possible without communication. Agreed by Zhang et al. (2010), the unprecedented expansion of wireless networks has resulted in a tremendous increase in energy consumption and left a significant environmental footprint. It has been reported that the energy consumption of networking devices gives huge impact on the environmental and financial growth. Thus, making information and communication technology (ICT) equipment and applications energy-efficient to be the main concern recently. Focus on application energy-efficient can give positive impact not only to the environment but also helps to attain long-term profitability. This initiative may also help reduce environmental impacts on high energy consumption in communication networks.

Figure 1 reported the amount usage of energy consumption in Malaysia from 1980 to 2017. The augmentation of the energy consumption underlines the total production of all electric energy by sector which was seen increasing year by year. The most important measure in the energy balance of Malaysia is the total consumption of

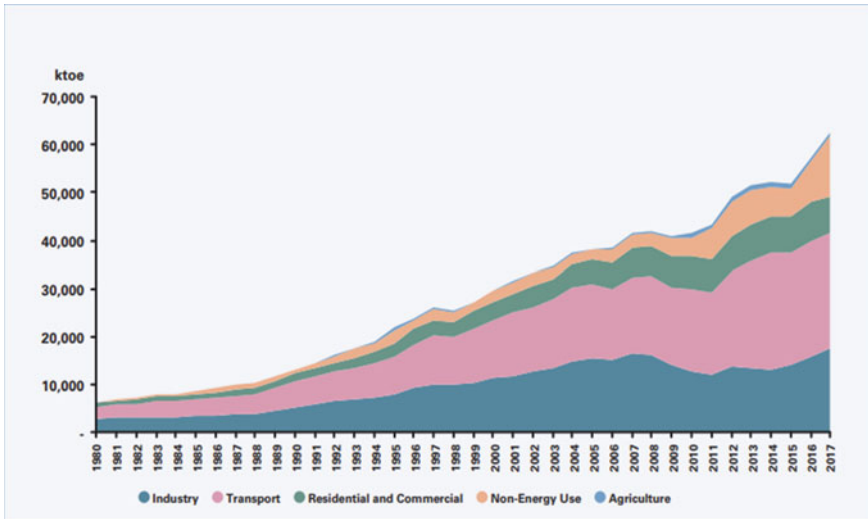


Fig. 1 Final energy consumption by sector (Energy Commission 2019)

electric energy per year (World Data 2021). This data also supported by (The World Bank Data 2021) that reported the same trends for Malaysia from 1971 to 2014. Studied by Rahman et al. (2017), it has been proven that awareness and practice towards energy efficiency affect the energy consumption. From this data, an important step needs to be done in order to develop appropriate energy-saving measures. Thus, with the strategic implementation and approach could help reduce the energy consumption.

2 Literature Review

This section presents the literature review done on relevant past studies which is intended to provide overview of studies that have been carried out, especially concerning on Green Communication (GC) to help the organisations especially on logistics industry in the implementation of good energy saving practices for the usage of communication technology and its applications.

2.1 Communication Development Strategies in Malaysia

In this global changing world, with incredible speed and high-performance technology advancement had forced the development of communication technology to become competitive in order to stay relevant. Recent theoretical developments have

revealed that the global economic crisis, COVID 19 pandemic disease, unsettling of industry 4.0 and climate change had created disruptive changes in our lives and livelihood. According to World Economic Forum in the (2021), digital inequality is one of the biggest risk facing humanity in 2021. It has been reported that half of the world population lives without internet which caused missed opportunities for them. It shows how critical the usage of communication network in the world economic development. Additionally, with the advent of Industry 4.0, it is technology that will boost the quality of life of the community, realise full economic potential, embrace sustainability, conserve our environment and bio-diversity and increase productivity (Ministry of Science, Technology and Innovation 2020). This field closely follows the paradigm of achieving high-tech nation. Thus, communication had recently be seen as a matured field that is updated with new infrastructure which is now being spun out into commercial technology development.

Two types of Malaysia's national imitative programmed that highlights the responsibilities of science, technology and innovation are DSTIN 2021–2031 and MySTIE where communication technology is one of the important initiatives been highlighted. Looking into logistics industry, this programmed helps the communication process to become more efficient through integrating the operations of all businesses using wireless transmission system. Thus, innovation-based economy driven by science, technology and innovation is imperative for a country's socio-economic growth, resilience and competitiveness (Ismail 2021). Patra (2017) mentioned with advance communication technology the network environment helps to provide better management of e-resources especially on exchange, transfer and provide information through a network to optimize the accessibility of the user.

Digital communication technology nowadays is pushing the boundaries of what we believe to be possible. With the new advancement of internet technology has made communication sector to be more efficient and thus, expedite the process of transferring information. National niche areas for ten socio-economic drivers in Malaysia has been widely observed and analysed critically. Another aspect that need to be considered in communication technology is the energy sector (Ismail 2021) which underline renewable energy that helps to enhance innovation and creation of impactful technology development in considering the environment. Ismail (2021) mentioned this sector is constituted by a complex and inter-related network of entities involved in the production, management and distribution of energy to fuel the economy and improve the quality of life of the community. This includes both renewable and non-renewable energy sources.

Hence, it is crucial to focus on socio-economic transformation that will pave the way for the nation to improve its innovative and creative capability in enhancing competitiveness and quality of life. This framework serves as an integrative tool for everyone including government, researchers, innovators, industry players and communities to work together to transform Malaysia into a harmonious, progressive, prosperous and sustainable nation (Abbas 2020). Abbas (2020) also addressed that this framework enables key sectors involved to become more knowledge-intensive and innovation driven.

2.2 *Communication Technology Challenges*

Communication technologies has gradually broadened as incongruence of socio-economic priorities and research priorities recently where high-tech nations blooms in adversity with its own time. Countries such as China, Japan, Korea and United States are competing between each other for its communication technology advancement. In line with the development of this technology, a fundamental change must be done to change the whole ecosystem into more sustainable and economically strengthen in order to stay competitive during this technological era.

Communication technology is an important part in IT infrastructure which comprise of networking, internet access, and website development (Patra 2017). Although these technologies advancement were systematic efforts in the development of communication technology, the advent of the internet brought about greater possibilities and demanded greater coherence in transforming the economic activities in becoming competent. By using network, people can easily exchange, transfer and provide information with the contingent of internet connection, type of internet connection and speed of network (bandwidth) that helps to optimized user access (Patra 2017). It shows that with the application of technology helps to boost communication medium to be more practical and attainable for daily activities.

The demand of communication technology has increase network usage drastically. This is in line with the usage of energy consumptions especially on communication system. The communication of energy that becomes very challenging task to the current technology development had raised the attention of many researchers to look into more applications and techniques on sustainable networks that can helps to reduce the over usage of energy.

Sustainable energy application is foremost target towards reducing energy consumption. The performance of implementing sustainable energy is the key pillars towards reducing carbon footprint. Therefore, research on effectiveness of energy efficiency usage has taken into way forward for the design for the new generation network namely Green Communication Network (GCN). The key success of a good implementation of green communication network practices was its ability to implement and put in place a good sustainable practice for energy consumption. As mentioned by Kumar and Patra (2016), with GCN practices helps in creating an efficient wireless communication without disturbing other performance.

2.3 *Green Communication (GC) Approach*

Rapid changes in communication technology has contributed to the development of advanced network. Green communications aim to explore and reduce the environmental issues situation through strengthen the responsibility to environment and upgrade an eco-generation of new network which include equipment and systems (Vinay and Rudresh 2018). Generally, 'Green Communication (GC) is well known

as the implementation of green and sustainable practices aimed in reducing carbon footprints in technology application such as the usage of wind and solar energy (Lloret et al. 2015).

A lot of terms have been used while discussing green technologies and are often used and misused. The carbon emissions currently receive most attention due to the problem of global warming and the change in climate. When considering the environmentally friendly solution, air pollution, water pollution and soil quality, protection of the ozone layer, use of natural resources, waste reduction etc. have to be considered as main impact (Vinay and Rudresh 2018). Thus, carbon emissions are not the only aspect to look into but considering all the aspects and initiatives which contributed to lessen the energy consumptions must be taken into action and consideration. Therefore, the summary of 'green communication' application and approach has been listed (Table 1).

As the worldwide keep growing with the advancement of this modern era, demands on electrical appliances increase together with the depletion of natural resources. This can be categorized as the major challenge which needs to be urgently addressed by the people (Lloret et al. 2015). Based on the summary table above, most of the recent findings that focus on Green Communication do agree that the energy consumptions play a crucial role in order to reduce greenhouse gas emission. They do believe that with the implementation of new techniques, model and current technology can reduce the usage of energy and thus helps to optimized the energy usage. Energy optimization can be seen through lessening the energy consumption and thus reduced carbon emission.

Most of the previous research highlights on the implementation of energy application on communication and networks usage and also the application by using either a system, model or network as their main concern in terms of 'green' approaches. Unfortunately, less research was found highlights on the implementation of cost reduction and time saving application as their main concerns in applying this 'green' concept. Additionally, it was found that the main resources in applying green and sustainable practices, is to look into renewable energy usage as a power like such as wind energy and solar power to produce a sustainable communication network for users. Lloret et al. (2015) agrees that new technologies investigation must be thoroughly been done to reduced carbon footprints in technologies application.

3 Communication Framework for Logistics Industry

Effective communication helps to support any decision-making process. A dynamic communication framework on GC has been developed to introduce the key factors in implementation of green communication. In this framework, the green communications attributes have been identified. This framework was designed to highlights the relationships of these attributes with green communication as to improve on the energy saving approach (Fig. 2).

Table 1 Summary of green communication application and approach

Green communication perspective						
Author(s)	Energy efficiency/reduce energy/power saving	Environmental aspect (greenhouse effects, sustainability, renewable energy, carbon emission, etc.)	Reduce cost	Integrated system or devices/optimization model or network	Time saving application/technique/scheduling	
You et al. (2020)	✓	✓				
Wu et al. (2018)		✓	✓			
Jamil et al. (2020)	✓			✓		
Popovski et al. (2009)				✓		
Wu et al. (2016)	✓	✓				
Tian et al. (2019)	✓				✓	
Gao et al. (2019)					✓	
Sasikiran and Padmavath (2017)	✓					
Hassan and Yuen (2019)		✓		✓		
Vereecken et al. (2010)		✓				
Premalatha et al. (2015)	✓		✓			
Bojic et al. (2012)	✓					
Gandotra and Jha (2017)		✓		✓		

(continued)

Table 1 (continued)

Green communication perspective						
Author(s)	Energy efficiency/reduce energy/power saving	Environmental aspect (greenhouse effects, sustainability, renewable energy, carbon emission, etc.)	Reduce cost	Integrated system or devices/optimization model or network	Time saving application/technique/scheduling	
Basturk (2021)	✓			✓		
Kumar et al. (2020)	✓			✓		
Din et al. (2018)	✓			✓		
Zhang and Chen (2020)		✓			✓	
Kumar et al. (2019)	✓			✓		
Huang et al. (2020)					✓	
Li et al. (2020)	✓			✓		
Mukhlif et al. (2020)	✓					
Khasawneh et al. (2020)	✓			✓		
Srivastava et al. (2021)	✓			✓		
Khosravy et al. (2020)	✓			✓		
Singh et al. (2020)				✓		
Total	16	7	2	14	4	

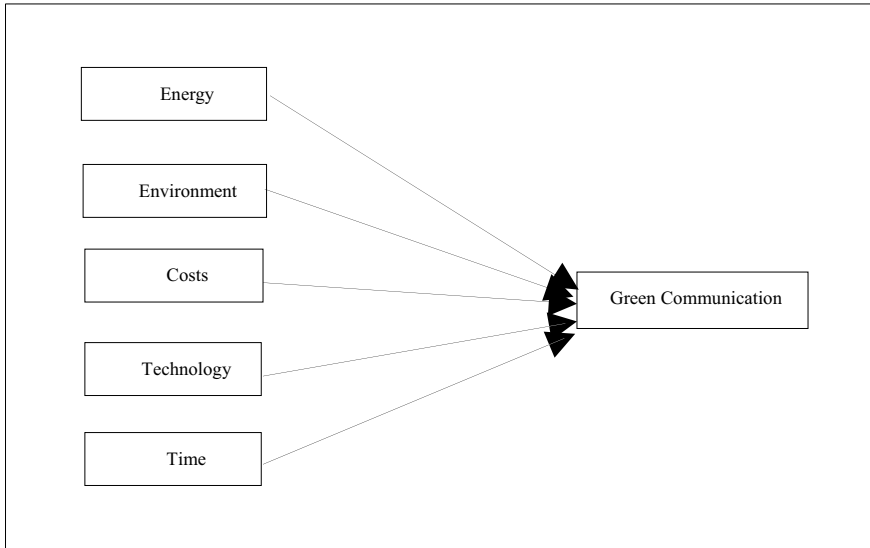


Fig. 2 Green communication framework for logistics industry

3.1 Application of Communication with Energy

Communication technology has been shown rapid growth in this modern era. The fourth industrial revolution (IR4.0) is expected to change how we communicate and thus change business environment that relies on the development and integration of Internet of Things (IoT), cyberphysical systems and associated services and process improvements (Boyle et al. 2017). Agreed by Ye et al. (2002) communication is widely accepted to be the primary consumer of energy. Additionally, the ability to connects and integrate communication process and systems had caused high energy usage. Boyle et al. (2017) mentioned that energy has become a major constraint for applications to operate in long time period.

It is assumed that monitoring and control of communication applications will require the use of devices that operate without persistent energy availability. Therefore, new approaches and findings has been found focus on reducing energy consumption through energy neutrality approach. Achieving towards energy neutrality, ample of researches has been done many years ago. This include such as low-power systems and devices (Gu and Stankovic 2005; Marinkovic and Popovici 2011), energy harvesting and hybrid-storage systems (Magno et al. 2014), compressive and predictive sensing (Baraniuk 2007; Raza et al. 2012), and energy-efficient communications protocols (Heinzelman et al. 2000). The importance of reducing energy usage is seen as a must in order to create a safe and preserve environment. Reducing energy use limits the number of carbon emissions in the environment. Therefore, by taking steps to reduce energy intake will contribute to a healthier and safer living.

3.2 Application of Communication with Environment

The meaning of 'Environment' began to receive considerable attention when many researches on sustainability and green approaches started to expand. Interest regarding preserving the environment and carbon emission have been discovered as one of the main concerns recently. This interest has continued and indeed grown, since then. The meaning of 'Environments' appears that people react in terms of its meaning the environment have for them (Rapoport 1990).

Frequently it is unforeseen and not always intuitively obvious can see the relationships between communication and the environment but however, it does exist. The important of environmental concerns in communication has been investigated and was found to be the key components in implementing sustainable approaches. Studies from You et al. (2020), Hassan and Yuen (2019), Wu et al. (2018) and many more had highlighted environmental factor as one of the key components in implementation of green communication. This approach highlights the usage of renewable energy, reduction of carbon emission and also reducing energy consumption in communication technology applied.

Hansen (2018) underlined on the relationships between communication and environment that focus on analysing and understanding how communication about the environment is being influenced and manipulated, with implications for how and indeed whether environmental challenges are being address and dealt with. This highlight draws on the significant and continuing growth and advances in the field of environmental communication research to show the increasing diversification and complexity of environmental communication.

3.3 Application of Communication with Cost

Communication was seen as a key element of running a successful business. Communication cost becomes significant where the costs of energy usage for communication purposes has been discovered. Stated by Songhurst (1999) the communication cost of transferring control and management information in a distributed system is a very important performance consideration. Additionally, (Renee n.d.) mentioned that implementing cost-effective telecommunication systems into operational procedures reduces a small-business owner's overhead expenses, improves customer service and increases profit margins. Telecommunication systems such as mobile access, internet, live chat, business email, landline, wireless, Voice over Internet Protocol (VoIP), Skype, personal digital assistants (PDAs) (Renee n.d.) and many more shows significant relationships on cost reduction. The way how communication system operates contribute to the effectiveness of cost saving application. Hence, the company or organisation can generate more profit out from implementation of an effective-communication application. A need for comparable reduction in telecommunication

costs has led studies such as Wu et al. (2018) and Premalatha et al. (2015) focus on costs reduction as the main objective in implementing GC.

3.4 Application of Communication with Technology

The role of technology in the evolution of communications has brought many attentions. Telecommunication technology has shown recent and rapid growth; the radio, telephone, television, computers and including satellites was found to give huge impacts on communications. Defined by Mitropoulos (1983), development means connectivity. As communication technology need to develop in line with the increasing of demand, the connectivity of the way communications systems can provide must be considered and take into action. Kumar and Kumar (2020) mentioned that Internet of Things (IoT) allows global connectivity to remote smart devices. With IoT application communication technology will be expand and thus, create a significant connectivity and powerful data analytic capabilities towards the way we work with minimal human intervention. Seeking alternatives that can reduce cost focus on communication system had pushed into seeking best application and looking once more into technological solutions. The impact of new technology applications will go fa beyond our ability in order to be connected simultaneously.

3.5 Application of Communication with Time Management

Communication delay was found to be one of the disturbances of system stability which brings an in-depth simulation studies for both constant and time varying interaction environments (Liu et al. 2018; Alimi et al. 2019). It is important to have a good communication system that helps time management and efficiency. It is vital to understand the communication process in every information transmission in order to improve its productivity. There are many ways to communicate using technology where the aim of it is to send information within a short period of time. Thus, monitoring the delay can easily lead to the development of efficient process and procedures. Since delay is difficult to control, most of the studies found to implement various of applications and techniques (Gao et al. 2019; Zhang and Chen 2020; Huang et al. 2020) that helps to enhance the productivity and performance. The applicability of every approaches is to overcome delay problems.

4 Conclusion

The reliance of society and the use of information had caused speedy increase of demand on communication application that contributed to high rise of energy

consumption. Keeping in view the challenges facing on the communication technology application has been discussed. This includes different kinds of techniques, models and technology proposed aimed in reducing the energy consumption with optimizing the energy usage. This paper highlights the gap on the application of green communication which highlights five attributes that related to green communication which are energy, environment, cost and time. These attributes play an important role in the implementation of green communication. The adaptation and implementation of these factors helps to reduce energy intensity and increase energy efficiency while using communication applications. This paper also proposed a framework for the implementation of green communication for improving energy efficiency. By providing digestible information and findings on green communication helps to measure and analyse performance and effectiveness of sustainable approach for its products and services.

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The Impact of Logistics Services on Customer Satisfaction in Embracing Transaction Disruption



Mohd Fathi Abu Yaziz, Muhammad Ashlyzan Razik, Mohd Ikhwan Aziz, Hasannuddiin Hassan, Dzulkifli Mukhtar, and Aidanazima Abashah

Abstract Every transaction in the emerging industry is disrupted in the digital era. Humans have no desire to live in a world where transactions are not disrupted. A day without shopping could be difficult, inconvenient, and even impossible. Many things in the internet shopping marketplace play important roles in the enjoyment stage. As a result, this research focuses on how logistics services may affect online shoppers' transaction enjoyment stage. The purpose of this article is to determine the primary logistics service parameters that influence online shopper satisfaction with transaction disruption. A total of 341 people who have done online shopping transactions answered the online questionnaire through a google form. The data was analyzed using Pearson correlation and multiple regression. The findings of this study will aid online retailers in identifying methods to improve their services, particularly in terms of logistics, which will ultimately improve customer happiness.

Keywords Logistics · Customer satisfaction · Transaction · Disruption

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1 Introduction

This research focuses on residents of Pengkalan Chepa, Kelantan. In this virtual age, e-commerce, or internet trade, may be quite popular. The Internet can be used to easily buy and sell services or things. For many of us, E-commerce has become an essential platform for carrying out day-to-day chores such as online payment and buying. Humans can no longer imagine a world without E-commerce. A world without E-commerce could be difficult, inconvenient, and impossible to imagine. E-commerce may not necessarily represent our opulent lifestyle, but it has become a necessity for many of us. Online shopping has been the standard in recent years, and people are flocking to it because of its numerous advantages. From the standpoint of the customer, online shopping offers low and obvious costs, a broad range of items and services, and a far more convenient purchase option that eliminates the need to wait in long lines at the cashier's counter. The most significant issue with purchasing for products on the internet is that there is no guarantee that the product will be of high quality. The difficulty in finding the proper length when purchasing clothing and footwear on the internet continues to be a significant drawback. This is one of the issues that pleasure e-shoppers. It will be difficult, inconvenient, and impossible to do business without E-commerce. There are numerous elements in the online purchasing market that play important roles in ensuring that online shoppers have a good time. One of them is logistics services, which may have an impact on the level of pride that online buyers have. In this scenario, the logistics provider is a critical component in ensuring that customers are confidence in their decision to purchase items via the internet.

2 Literature Review

The delivery service is linked to the provider's capacity and aptitude to offer items to customers depending on the specified lead time. It is crucial since it will bring enjoyment and loyalty to the patron. As a result, effective planning and the correct methodology are required to ensure that the desired products are added on time (Guo et al. 2012). The effectiveness of merchandise coordination in meeting customer demand is one of the most important variables in the E-commerce environment. The success of an e-commerce business is dependent on the provider's ability to deliver the goods regardless of the customer's location. As a result, it's critical to ensure that the required products arrive in the patron's region without delay due to a transportation provider's inefficiency.

Reverse Logistics is a method for businesses to become more ecologically friendly by recycling, reusing, and reducing the number of materials they consume. It can be regarded of as the reverse distribution of materials among channel members when viewed narrowly. The reduction of materials in the forward system such that fewer materials flow back, reuse of materials is possible, and recycling is enabled is a

more comprehensive view of Reverse Logistics (Quesada 2003). In an e-commerce environment, reverse logistics mostly refers to returns or exchanges, or the entity transfer process in which downstream customers return goods that don't meet the order's requirements to upstream suppliers. When things purchased online turn out to be of poor quality or unsatisfactory in other ways, they will be returned to suppliers or manufacturers following the terms of their return or exchange policies with merchants. The logistics flow, information flow, capital flow, and all or portion of the business flow should all be included in the reverse logistics flow. Because most domestic merchants are now unaware of reverse logistics, the issue of returns or exchange is always one of the most significant conflicts between merchants and customers. As a result, in e-commerce, the development of reverse logistics is critical (Wang and Evans 2015).

When it comes to internet buying, each customer has their own set of expectations. Obviously, customers are satisfied when their perceived likelihood exceeds their perceived expectation. They will be unhappy, on the other hand, if what they received falls short of their expectations. Product quality has a two-way effect, with good product quality improving the online retailer's reputation while also increasing the likelihood of customer retention. Additionally, when customers are satisfied with the service or product provided, they will serve as a marketing to attract new customers. As a result, the retailer's profitability will improve (Saadah and Ying 2020). With rising consumer expectations for product quality, the product pleasant manipulation in the online purchasing marketplace has gotten a lot more attention from the government regulatory agency, the internet shopping platform, and the seller in recent years. Several product quality control methods have been implemented within the online buying platform, which is at the heart of this business environment, to spare you from making bad decisions due to data asymmetry and the resultant market failure, and to help you make money in the end (Rossi et al. 2013).

Customer service in online purchasing is defined by how quickly an online retailer responds to a customer's request. Customer service entails more than just answering customers' concerns and delivering relevant information; it also entails an awareness of their specific needs. Customer service is divided into three stages, according to Saadah and Ying (2020). These stages include before, during, and after the transaction. As a result, excellent customer service is required to retain a long-term relationship with customers and remain competitive.

Service recovery is triggered by a service failure that is encountered with the help of the service or product provider. In every agency, service failure is unavoidable, especially in a digital transaction. The one-of-a-kind customer will have specific needs and desires. As a result, an online company should take appropriate steps to reclaim dissatisfied customers to comfort them, resolve their problems, and win their loyalty. In fact, to avoid consumer litigation and negative word-of-mouth, a good service recovery strategy must be in place to address any potential concerns. Environmental components, customer elements, dating elements, and organizational factors are all things that an online retailer must keep in mind (Liu et al. 2015).

3 Methodology

A research design is simply a study plan that outlines the procedures that researchers must follow to achieve their research objectives or test the hypotheses that they have developed for their investigations. As a result, certain previous studies are still used as references and guidance in this research. This study will concentrate solely on the survey method, in which data is collected via a structured questionnaire that employs a quantitative research strategy to obtain more information. The study used a quantitative approach to discover the logistical issues that online customers Pengkalan Chepa encounter. A questionnaire will be used by the researchers to collect quantitative data that will allow the study to obtain reliable and accurate results.

Data collection is known as the process of gathering and measuring data, information and any variables of interest that established and standardized in a manner that enables the collector to answer or test hypothesis and to evaluate the outcomes of the collection. In this study, both primary and secondary data were collected for the purpose of completing this research.

This chapter discusses about the techniques and methods that will be used in the study of the level satisfaction of e-shoppers toward logistics service to Pengkalan Chepa citizens. These technique and method are tools to achieve the goals and objectives of the study. Research design, population, sample size, sampling technique, research technique, and data analysis technique will be introduced in this chapter.

4 Analysis

This chapter starts with a preliminary analysis and a demographic profile of the respondents. In the scale measurement analysis part, descriptive analysis for items and variables was used, as well as a reliability analysis to guarantee that the sample was trustworthy. In addition, all the responses will be analysed. Descriptive statistics, reliability analysis, and pearson correlation are also included. The research data was analysed with the use of an application called IBM SPSS 25. After you've gathered all your data, you'll need to run IBM SPSS Statistics 25 to analyse it. The purpose of a reliability analysis is to determine whether a questionnaire is valid. It also carried out tests to assess the data's consistency and trustworthiness. Reliability analysis is a test that uses the Cronbach Alpha coefficient to estimate the method of internal consistency and to find item consistency. The higher the score, the more trustworthy the created scale is, implying that the items have a higher degree of intercorrelation. In the literature, the dependability of each factor's variable and a coefficient more than or equal to 0.70 were regarded acceptable and a good construct of reliability. This type of test is used by researchers to obtain a non-biased result.

The relationship between the Independent and Dependent Variables. The r-value for the relationship between delivery service and E-shopper satisfaction was 0.701, with a p-value of 0.000 (P0.01). The r-value for the relationship between reverse

logistics and E-shopper satisfaction is 0.763, with a p-value of 0.000 (P0.01). The r-value of the product quality correlation is 0.726, with a p-value of 0.000 (P0.01). The r-value for the relationship between customer service and E-shopper satisfaction was 0.652, with a p-value of 0.000 (P0.01). The r-value of the service recovery correlation is 0.745, with a p-value of 0.000 (P0.01). Therefore, it suggested that the value of the result is substantial (Alkhatib et al. 2015) and that the independent variable and dependent variable have a strong link.

5 Discussion

The primary goal of this research is to determine the impact of logistics on e-shopper satisfaction. Because the scope of the study was limited to Pengkalan Chepa citizens, future researchers are encouraged to broaden the scope of the research study to increase the generalizability of the findings of the association between logistical service and E-shopper satisfaction. The sample size should be increased so that the research can be conducted uniformly across Malaysia. The researcher can do in-depth research in other Malaysian states to evaluate a larger number of respondents. It will increase the number of respondents and broaden the perspective on the elements that influence logistics service satisfaction among E-shoppers.

Finally, the goal of this research is to gain a better knowledge of how logistics service affects E-shopper happiness. The research's objectives have been met. In addition, the researcher made some recommendations for future research. The findings of this study could benefit society because they can be used as a guide for future researchers who want to perform more research in this field. E-commerce businesses should create a loyalty programme that is unique to their clients. E-commerce companies are exceeding expectations. Customers may also enjoy a fun and cool approach of shopping on the internet. Finally, it can be stated that Malaysia's E-commerce business has a bright future. It merely wants a new way to capture oneself on the internet. Finally, the goal of this research is to gain a better knowledge of how logistics service affects E-shopper happiness. The research's objectives have been met. In addition, the researcher made some recommendations for future research. The findings of this study could benefit society because they can be used as a guide for future researchers who want to perform more research in this field. E-commerce businesses should create a loyalty programme that is unique to their clients. E-commerce companies are exceeding expectations. Customers may also enjoy a fun and cool approach of shopping on the internet. Finally, it can be stated that Malaysia's E-commerce business has a bright future. It merely wants a new way to capture oneself on the internet.

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A Review of Supply and Demand Digital Talents in Malaysia



Azwa Abdul Aziz, Ibrahim Abdulkarim, and Julaily Aida Jusoh

Abstract The supply and demand chain regarding Information Communication Technology (ICT) or digital talents and industrial needs in Malaysia have been unbalanced due to so many factors. However, ICT has become an important sector in Malaysia's economic development, acknowledged by the Government of Malaysia as a strategy in creating an industrial-based economy and a knowledge-based economy. The supply pool of (Degree and Diploma) graduates in ICT-related disciplines such as Computer Science, Multimedia, Animation, Information Technology, and much more still outweigh the demand pool by ICT industries. However, there is a vast disparity between the annual growth rate of ICT demand and ICT talent supply. This disparity indicates that they could be a shift of balance between ICT talents supply and ICT industrial needs demands. Hence, it is necessary to understand Malaysia's ICT sector's dynamics and evolution and identify the factors and challenges affecting the balance of ICT demand and supply chain. This paper using secondary data, mainly from the MSC Talents report, Malaysia Digital Economy Blueprint, and Malaysia National Policy on Industry 4.0, provide an overall landscape of ICT Talents in Malaysia. We also propose a process-based framework to bridge the gap between ICT demand and supply by using Business Intelligence technologies. In conclusion, to ensure the balance of demand and supply digital talent in Malaysia, a proper mechanism such as a talent data lake will help give the right input to the stakeholders.

Keywords Digital talent · Talent management · IR 4.0 · Business intelligence

1 Introduction

Regardless of the economic situations and workforce conditions, global organizations recognize Talent Management (TM) as an instrument for sustainable growth (Ibraiz and Randall 2010). Therefore, stakeholders beyond human resource (HR) researchers and professionals increasingly show concern to the issue (Boston Consulting Group

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2015). However, stakeholders believe that Talent is no longer a top priority after the global economic recession due to increasing unemployment and the growing pool of potentials in the developing world. Conversely, it was disputed that such views were illogical, as the primary demographic factors influencing the “talent war” such as population aging remain unchanged. Hence, policymakers should prioritize developing, attracting, and retaining Talent on their agenda (Heidrick and Struggles 2015). In 2011, Rosaleen Blair, CEO and founder of Alexander Mann Solutions, suggested, “As competition to attract this top talent hot’s up, it is essential organizations take a more strategic and innovative approach when implementing recruitment policies.” Therefore, it is expedient to have an innovative tool or technique to facilitate the successful implementation of TM practices.

Information and communication technology (ICT) tremendously improves the efficiency of processes, products, and service delivery and provides boundless opportunities in various sectors of human endeavor. Over the years, the ICT sector in Malaysia grows considerably beyond the ordinary collection of technological equipment into a robust business and socio-economic enabler (ICT Job Market Outlook and in Malaysia 2014). However, the growth comes with a demand for more human resources with required industry-relevant skills to fill in the provided opportunities. It was reported that there is an overflow of almost 80,000 jobs in the ICT sector in Malaysia within 4 years. In addition, companies within the respective area are projected to grow their workforce base at 8% per annum. Conversely, continuous shortfall with regards to talent supply was projected in the area, as a negative Cumulative Annual Growth Rate (CAGR) of -2% regarding IT graduates was recorded within the same period under review (Ipsos Business Consulting 2014). Consequently, these inconsistencies resulted in a gap between demand and supply of ICT talent, which eventually contributes to the global phenomenon of talent shortage in the sector. Companies requires new innovation to remain competitive in global market. Innovation is defined as new products, new processes, new services including new use of established products, processes and services, new forms of organization, new markets and the development of new skills and human capital. The companies needs new talents that can cope with rapid changing of innovation in real markets (Gholami and Al Tahoo 2021). Furthermore, innovation can be the key for small and big businesses survival, as it is recognized as having a central role of creating value and sustaining competitive advantage by distinguishing the factors that deliver superior value and taking advantage of them rather than focusing on all the factors the industry competes on (Aminova and Marchi 2021).

Therefore, the paper emphasizes reviewing details of ICT demand–supply is based on secondary data available, including journals, conferences, white papers, survey reports, and most importantly, the annual report from MSC Malaysia on ICT talents. It is including identifying the factors and challenges attributed to the ICT talents supply and demand gap. Consequently, a framework that can streamline and bridge the gap between ICT talents supply and demand is proposed.

This review paper approach combines reports, surveys, and presentations from three (3) significant publications by MSC Malaysia. However, our main review focuses on aspects regarding the dynamics of the ICT Talents and Industrial Needs

pool gap. We outline the challenges and identify the suggested solution for the proper balance between ICT talents in Malaysia and ICT demand needs. The publications from MSC Malaysia (secondary data), Economic Planning Unit (EPU), an organization under the Prime Minister's Office and Ministry of International Trade and Industry (MITI) used for input in this research paper include:

- i. MSC Malaysia Supply–Demand Study of the ICT Industry (Frost and Sullivan 2014)
- ii. MSC Malaysia Talent Supply–Demand Study 2010–2013 (Vocational Graduates) (Multimedia Development Corporation (MDeC) 2010)
- iii. MSC Malaysia Talent Supply–Demand Study 2013–2017 (MDEC) (Ipsos Business Consulting 2014)
- iv. Malaysia Digital Economy Blueprint, Prime Minister's Office (World Economic Forum 2021)
- v. National Policy on Industry 4.0, Ministry of International Trade and Industry (MITI)

2 Related Works

ICT is perceived as a building block in all major industrial sectors globally. Having a streamlined process where ICT talents employed by these industries are well-equipped with aligned skill sets and academic intellect based on the requirement of these industries is considered a major challenge. ICT industries usually experience immense dynamism that eventually leads to business scope, operations, and skillset requirements. However, these changes are sometimes not implemented in IHL for Talents' overall improvement and acquisition. It has become a return that affects the Quality of ICT talents graduated by IHL's.

Creating a sustainable and well-equipped ICT talents pool for the ICT industry is an initiative that requires continuous dynamics. It includes understanding what the ICT industry represents, what it offers, and how it's evolving. It also involves providing adequate skill set, training, and academic intellect to talents positioned for ICT-related fields. Within a period of 4 years, they have been massive growth for ICT talents, an uprising of nearly 80,000 jobs across different industrial needs for Malaysia ICT industry based on the study conducted by Frost and Sullivan (2014). However, ICT talents graduates from Malaysia IHL's are projected to experience continual shortfall due to some critical challenges.

Figure 1 shows graduate's across IHL's in Malaysia spread across five (5) different faculties (Information Technology, Creative Multimedia, Business, Arts, and Engineering). They are a negative Annual Growth Rate (CAGR) of 2% regarding MSC graduates (Information Technology, Creative Multimedia, and Engineering). A recent study carried out by MSC Malaysia shows that less than 30% of graduates from IHL's in Malaysia employed by companies are categorized as preferred talents. However, most (58%) of these graduates are usually labeled as an average

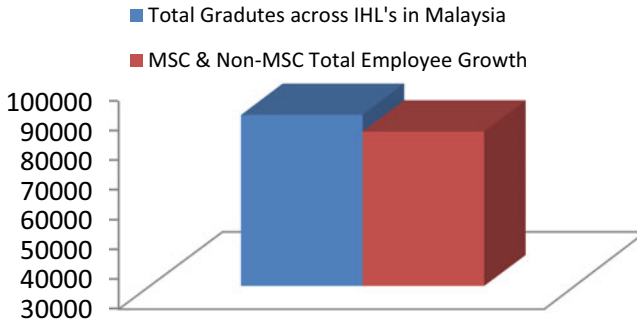


Fig. 1 Representation of graduates and industrial needs (Ipsos Business Consulting 2014)

quality while the balance is inferior performing talents (Multimedia Development Corporation (MDeC) 2010).

The supply and demand chain with regards to ICT talents and industrial needs in Malaysia has been unbalanced due to so many factors. With a considerable amount of graduates from IHL's in Malaysia, it has been increasingly difficult to appropriately map industrial needs to talents' academic performances and decrease the gap between skills demands by industries and talents supply by IHL's. Furthermore, IHL's in Malaysia uses different application systems for their respective student's management. These application systems used by IHL's are mainly independent of each other and having heterogeneous data.

With respect to Frost and Sullivan (2014), Malaysia has more than 150 IHL, including universities (public and private), polytechnics, and community colleges. Altogether, it's generated 87,000 talents annually for five faculties (Information Technology, Engineering, Creative Multimedia, Art, and Business). Furthermore, they are more than 1500 companies spread across three main ICT industrial clusters. These clusters are Information Technology (InfoTec), Shared Service Outsourcing (SSO), and Creative Multimedia Cluster (CMC). There are only 30% of these graduates are considered as preferred talents by these companies.

To facilitate the current and future ICT talents supply and demand by ICT industries in Malaysia, we reviewed consolidated data from IHL's in Malaysia relevant to ICT disciplines and data for ICT graduates required by industries based on fields of studies. Then, statistical data from IHL's are carefully analyzed to understand the Malaysia Talents supply and demand.

3 ICT in Malaysia

ICT is an umbrella term for different research fields, which comprises communication devices, networking and application, hardware and software, satellite system, internet

solutions, and various services provided by these research fields. Researches have used the phrase ICT since the 1980s (Melody et al. 1986).

The ICT sector is a combination of manufacturing and services industries driven by IT that captures, transmits, and displays data electronically. Manufacturing industries under the ICT sector comprise all industries that produce products related to and used by ICT research fields. Examples of products made by ICT sector manufacturing industries are accounting and computing machineries, cables, telecommunications equipment, electronic components, and other computer-related goods. Services industries under the ICT sector comprise industries that distribute, publish, sell, resell, lease, and offer services related to and used by ICT research fields. Examples of services rendered by ICT service industries are wholesale of pre-packaged software, computers and computer peripherals, software publishers, office machinery rental/leasing, navigation and communication equipment suppliers and distributors, and other related intangible services (April 2011). ICT talents are individuals that engage in the process of acquiring ICT knowledge and skills. ICT knowledge transfer and skillsets are usually categorized into a different disciplines, providing talents to the opportunity to attain a certain level of professionalism within a chosen profession.

ICT has been recognized by the Malaysian Government as a key driver to the national economy. For this reason, various policies and initiatives have been rolled out to invigorate the sector. The most vital among them is the establishment of the Multimedia Super Corridor in the mid-1990s. These strategies recorded huge success in forming tangible ICT sector, bringing forth many ICT industries, creating a thousand jobs, generating exports, and most importantly, placing the country among top world destinations for ICT investments (Ipsos Business Consulting 2014).

According to the Malaysian Standard Industry Classification (MSIC 2000), the country's typical ICT Services (ICTS) segment was made up of telecommunication and computer services only. Later, when MSIC 2008 was introduced, other services such as publishing, motion pictures, video and television programs, programming and broadcasting, and information services were included in the ICTS segment (Frost and Sullivan 2014). These new ICTS segments have seen significant growth in recent years, forming about 21.3% of the overall ICT sector value-added services contributions (Multimedia Development Corporation (MDeC) 2010).

ICTS segment grew at a Compound Annual Growth Rate (CAGR) of 12.4%, upgrading its value-added services from RM 11.77 billion in 2000 to RM 59.83 billion in 2013, and it is projected to reach 67.99% by 2014. Similarly, the share of ICTS in the national Gross Domestic Product GDP grows from 3.3% in 2000 to 6.4%, doubling over the time interval of 2000 to 2014 (Multimedia Development Corporation (MDeC) 2010).

4 Talent Management (TM)

4.1 Introduction to TM

According to Cappelli (Ibraiz and Randall 2010), TM can be simply defined as anticipating human capital needs and setting out an efficient plan on how to meet them. Moreover, a substantial part of strategic human resources (HR) Management literature recognizes human capital as a key to gain and sustain a competitive edge (Becker and Huselid 2006). For this reason, TM becomes an essential priority of HR managers, which is considered one of the five crucial HR challenges in Europe. As a result of this development, the concept enjoyed a significant degree of interest from practitioners and academicians. This culminated in the paradigm shift from traditional HR-related sources of competitive advantage literature to talent management that suits the modern environment (Collings and Mellahi 2009).

However, despite the growing recognition of the idea, its conceptual boundaries remain vague until recently, which resulted in varying opinions about the precise meaning of the concept among researchers. Thanks to Collins and Mellahi (2009), who contributed to the topic by developing a theoretical model of strategic talent management. The model was postulated from various discrete literature bases to aid future research in the domain. The first objective of the model is to outline clear conceptual boundaries for TM. Secondly, to provide a theoretical framework that will aid researchers in the future to shape their work in the area. In addition, they also describe TM strategy as activities that involve three distinct vital phases. Firstly, the

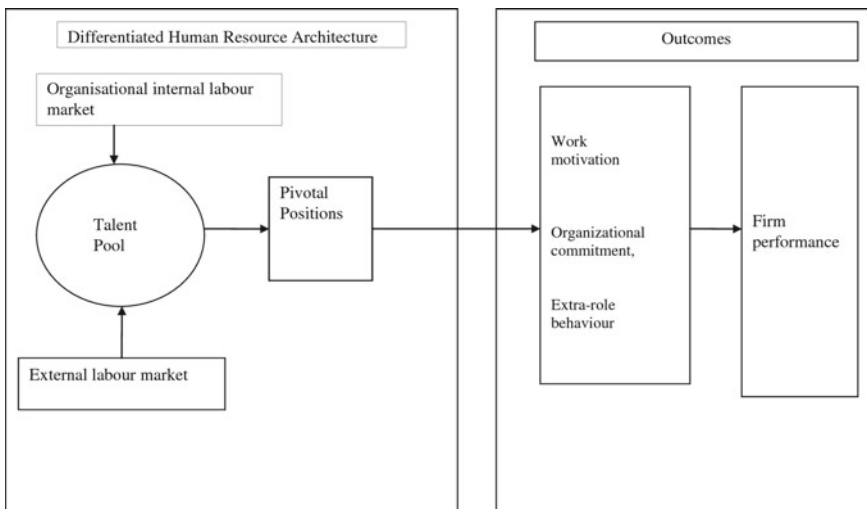


Fig. 2 Talent management strategy model (Collings and Mellahi 2009)

systematic identification of positions that differentially contributes to an organization's sustainable competitive advantage. Secondly, developing a talent pool of high potential and high performing incumbents to fill these roles. Lastly, the development of human resource architecture facilitates filling identified positions with competent incumbents and ensuring their continued commitment to the organization. Figure 2 below shows Talent Management Strategy Model.

4.2 *Global Talent Landscape*

According to Randall and Schuler (2010), Talent is globally recognized by industries as a vital instrument to sustainable development. In 2013, The GTI Report provided an overview of the global Talent trend (Heidrick and Struggles 2015). The report faults policymakers and business stakeholder's skepticism of "talent wars" as an artifact of a pre-recession poem. Although, their disbelief may be forgiven considering the increasing unemployment levels and growing pools of potential recruits in many countries. Contrarily, the report regards such opinions to be misplaced as the major demographic trends impacting the "talent war" such as population aging remain unchanged. Therefore, policymakers must prioritize how to develop, attract and retain Talent on their agenda.

Moreover, the report appraises talent trends around the globe in two proportions. The first proportion is at the international level through a benchmarking index of talent environments in 60 countries. Secondly, at the enterprise level, determining how executives view their own firms' ability to attract and retain the required individuals. With regards to the benchmarking, it was discovered that the US is the dominant GTI performer, clinching first in 2011 and 2015. Thanks to its excellent institution, qualitative workforce, and meritocratic environment.

Additionally, Nordic and developed Asia Pacific countries are found to be prominent in the GTI top ten. Their success, however, is attributed to their significant investment in education and openness to international trade and foreign direct investment. It was also found that Canada, Chile, and Turkey are the biggest gainers between 2011 and 2015. In comparison, stiff economic conditions contribute to the most significant falls in the GTI in 2015, recorded by Greece and Venezuela. Moreover, the study discovers that China outperforms other countries as it jumps to 31st place in the GTI in 2015 from 33rd in 2011. Brazil also registers substantial improvement between 2011 and 2015, with employment multiplying, expenditure on education rising, and the language skills of the workforce improving.

At the enterprise level, a little over 70% of surveyed executives are either "highly" or "somewhat" confident that their firms will be able to attract and retain crucial workers within the next 2 years, with 66% also reporting satisfaction with their recent hires. However, sizeable minorities, mainly from Asia, show dissatisfaction with their recent hires and are neutral or pessimistic. More so, it was established that firms are increasingly relying on developing employees themselves, particularly in Asia. Moreover, executives bemoan a lack of creativity in recruits. This challenge



Fig. 3 Global talent competitiveness index (World Economic Forum 2021)

is most sharply experienced in Asia and Latin America, which is regrettably something that may be difficult to fix. Figure 3 shows Malaysia is ranks 26 for Global Talent competitiveness Index for 2020 from 132 countries. Parameters such as demographics, compulsory education, university education, Quality of labor force, talent environment openness, and so on are considered during the evaluation.

4.3 Malaysia ICT/Digital Talent Supply

As stated by Creelman, Talent is at the forefront of organizational success. This implies that the success of an organization largely depends on the strength and ability of its Talent (workforce) to deliver on the prime objectives of that organization (Malaysia Talent Competitiveness in a Global Perspective 2010). The ICT workforce in Malaysia is largely made up of the talents who graduated from the IHL's within Malaysia. A survey conducted among ICT companies both registered and non-registered under Malaysia Status Company (MSC) indicated that local talents form up to 87% and 90% of both MSC and non-MSC companies' labor force. IHL's in Malaysia is categorized into Public Universities, Private Universities, Polytechnics, and Community Colleges.

IHL's often invites industrial players as guest instructors in guidance and counseling classes to facilitate employability and expose talents to required industrial skillsets. Unfortunately, skillsets acquired from ICT-related disciplines are more

focused on other fields of studies (e.g., Business) exposed to diverse skillsets. It is a recorded supply of 87,000 graduates across IT, Engineering, Creative Multimedia, Business, and Arts faculties from all IHL's in Malaysia. However, only 76% of the graduates are available for employment, and 58% of the total graduates are employable. Some dominance factors driving ICT Talent Supply Pool in Malaysia are:

- i. **Youth Encouragement to Pursue a Career in ICT**
Encouraging secondary students to pursue a career in ICT disciplines is a factor that will stimulate the growth of the ICT talent supply. With proper guidance and motivation about ICT, young students will be knowledgeable and exposed to the opportunities and benefits of ICT. This will encourage students to pursue a career in ICT.
- ii. **Availability of Current ICT Specializations in IHL's**
The availability of current and different ICT specialization within IHL's also drives the growth of the ICT talent supply pool in Malaysia.
- iii. **Enrolment and Intake**
Having less complicated requirements for young students to apply for ICT-based fields within IHL's in Malaysia raises students' enrollment into ICT. This also contributes to the factor driving the ICT talent supply pool in Malaysia.

Providing an enabling environment for companies to establish and expand their Business by the Malaysian Government has helped in developing a sizeable ICT sector, creating thousands of jobs and exportation of ICT products. Over the years, the ICT industry grows considerably, and with the growth comes the demand for more human resources with required industrial skills (Ibraiz and Randall 2010).

With a projection of an expected workforce growth of 82,100 in 2014 to above 100,000 in 2017, the demand for ICT talents by MSC and non-MSM Companies in Malaysia increases annually by an average of 8% (Ipsos Business Consulting 2014). Additionally, the overall ICT industry in Malaysia is forecasted to add at least 450,000 employees (Melody et al. 1986). However, the Information Technology cluster required by industries has the highest ratio of fresh graduate intake.

Core ICT field of study that was used in our consolidated data for ICT talents in Malaysia, including Software Development, Business Intelligence, Database Technologies, Networking and Technologies, Multimedia Tools, System Applications and Products (SAP), Operating System and Server, Hardware Design, and others. IHL's that were used in our consolidated data for ICT talents in Malaysia include Public Universities, Private Universities, Polytechnics, and Community Colleges. Table 1 shows the overview of the ICT Talents landscape in Malaysia, focusing on core ICT-based fields.

Malaysia's ICT sector suffers a gap between demand and supply of talents over the years. This development can be related to growth in the area coupled with an inconsistent supply of relevant graduates from the local IHL. A survey by Frost and Sullivan (Boston Consulting Group 2015) establishes that a significant increase in demand for talents of nearly 80,000 jobs across ICT sectors in Malaysia is recorded within 4 years (2010–2013). In the same vein, IPSOS Business Consultants further

Table 1 Overview of Malaysia ICT talent landscape (Ipsos Business Consulting 2014)

Core ICT based fields				
Consolidated students intake by IHL's in Malaysia	2010	2011	2012	2013
	26,000 Intake	20,000 Intake	23,000 Intake	23,000 Intake
Consolidated graduates from IHL's in Malaysia	2010	2011	2012	2013
	17,000 Graduates	12,000 Graduates	15,000 Graduates	16,500 Graduates
Consolidated graduates hire by MSC and Non-MSc companies	2014		Estimation by 2017	
	25,900		33,200	
Consolidated graduates hire by MSC and Non-MSc companies	Fresh Graduates Hire		Experience Hire	
	3506		22,394	
Percentage of graduates hired by MSC and Non-MSc companies based on Quality	Excellent	Good	Average	Poor
	6%	32%	52.5%	9.5%

asserts that ICT firms, both MSC and non-MSc registered, are expected to develop their workforce base at an average rate of about 8% per annum (Ipsos Business Consulting 2014). Regrettably, the reverse is the case with regards to ICT talent supply across IHL in the country. A survey indicates that ICT graduates from Malaysia IHL are projected to experience a continual deficit between 2013 and 2017 due to some crucial challenges. As a result, the ICT talent demand grows the supply, culminating in a gap between demand and supply of talents within the ICT ecosystem (Ipsos Business Consulting 2014). Figure 4 below illustrates the Demand–Supply Gap in 2013, 2014, and a projection of 2017, respectively.

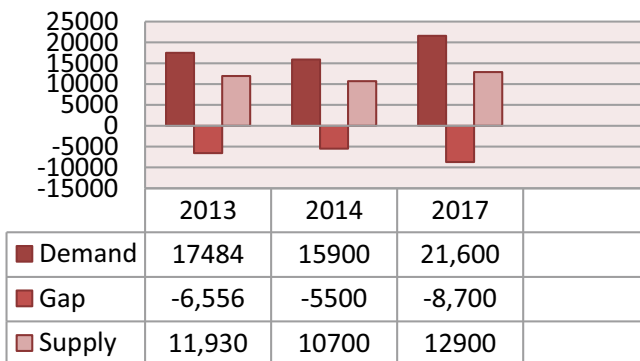
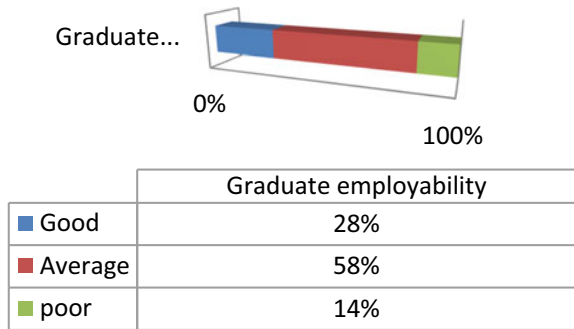


Fig. 4 Talent demand–supply gap (MDEC 2020)

Fig. 5 Graduate employability chart (Multimedia Development Corporation (MDeC) 2010)



Moreover, ICT industries often experience changes in business scope, operations, and skillset requirements due to the constant innovation of new concepts in the discipline. However, these changes are sometimes not updated in the IHL syllabus for talents’ overall advancement and up-to-date skills acquisition. In the end, this renders the talent produce by IHL deficient in industry-relevant skills and thus further widens the gap between demand and supply. Figure 5 illustrates the employability chart of graduates from Malaysia IHL.

Conclusively, from the above studies, it is apparent that an effective talent management strategy is needed for the overall improvement of talents in ICT and all other sectors. Thus, a more scientific technique needs to be employed to help in thorough analysis of the situation to understand the Malaysia talent trend to proffer a solution.

5 The Industry Revolution 4.0 (IR 4.0)

Industry 4.0 transforms how products are designed, fabricated, used, operated, maintained, and serviced. It will also transform the operations, processes, supply chain management, and energy footprint of factories. Industry 4.0 is the new approach of combining traditional manufacturing methods and technology such as the Internet of Things (IoT) to enable machines to capture and convey more data through machine-to-machine communications. These have to be mobilized by a workforce equipped with essential skill sets to develop systems, applications, and services such as Big Data, artificial intelligence (AI), advanced analytics, robotics, and automation. Figure 6 shows the evolution of industries from IR 1.0 to 4.0.

The Malaysian Ministry of International Trade and Industry (MITI) has launched the National Policy on Industry 4.0 to help the country’s companies and factories move forward. Ideally, this will allow local businesses to improve production, performance, Quality, and grow new skills and Talent with people. Due to the transition of the digital economy, the global workforce is projected to undergo a substantial change between work relations and purposes. Many industries across countries are already experiencing difficulties in hiring young students, and the situation is expected to

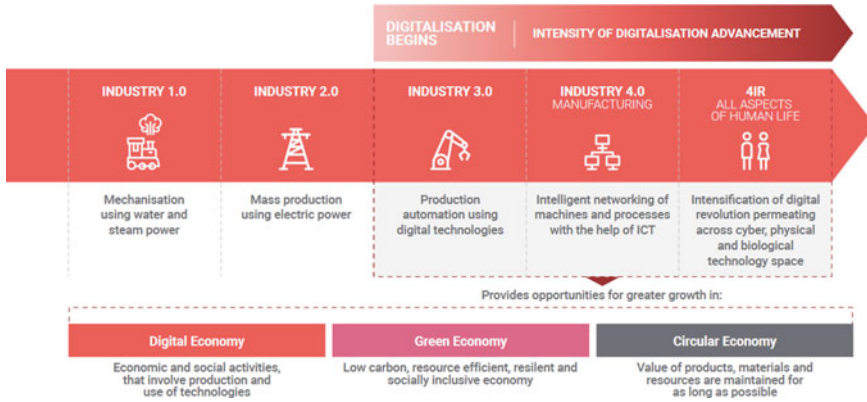


Fig. 6 Evolution of industries (Economic Planning Unit (EPU) 2021)

worsen dramatically over the 2015–2020 timeframe (World Economic Forum 2021). Reducing the mismatch between the skills available and those required for the digital transformation of the economy has been a key priority over the last decade. Research by Khan (Ministry of International Trade and Industry (MITI) 2018) proposes a framework for Malaysia Digital Competency Model as depicted in Fig. 7.

The Government’s Malaysia Digital Economy Blueprint (MyDIGITAL) was created with the objective to transform Malaysia into a digitally-driven, high-income nation and a regional leader in the digital economy (Economic Planning Unit (EPU) 2021). A digital economy is defined as economic and social activities that involve the production and use of digital technology by individuals, businesses, and the Government. The Malaysia Digital Economic Blueprint places as much emphasis on other fundamental components of the digital economy and growing the economy through digital technology. These include a digital government 15, fit-for-purpose digital talents, a digitally inclusive society, and a safe and secure digital environment. The Blueprint intends to continue the Malaysian Government’s efforts towards growing its digital economy.

Therefore, it is important the ICT/Digital Talent to make Malaysia as a modern nation prosperous. One of the approaches to avoid the shortages of digital Talent, Malaysia began deploying a revised ICT curriculum for primary schools and a new computer science curriculum for secondary schools in 2017. There are also various existing initiatives in place to cultivate digital skills in schools. These initiatives have evolved from focusing on basic infrastructure to deploying innovative informal learning methods over the years.

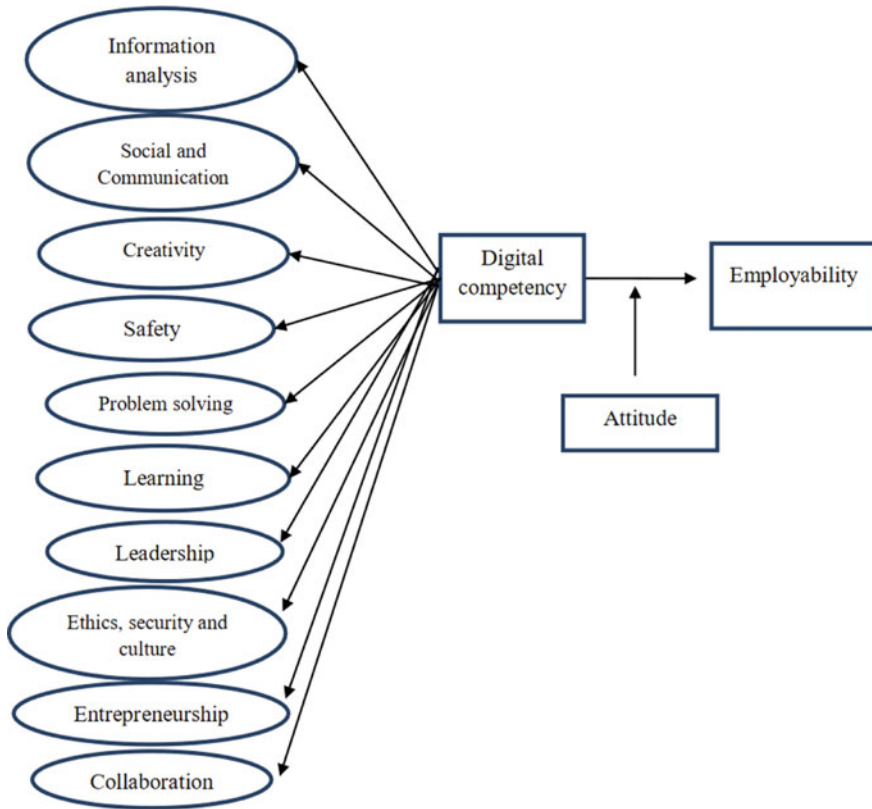


Fig. 7 Competency model for IR 4.0

6 Digital Talents During COVID-19 Pandemic

Coronavirus Disease (COVID-19) affected the life of thousand of million of humans around the globe. It is including the process of daily works. The survey by MDEC in 2020 involving 226 respondents where 59% from industries states COVID-19 has negatively impacted 85% of companies. Two out of third respondents have begun work from home and need a Tech platform for all work activities (MDEC 2020). Even before the current crisis, changing technologies and new ways of working were disrupting jobs and the skills employees need to do them. In 2017, the McKinsey Global Institute estimated that as many as 375 million workers, or 14% of the global workforce, would have to switch occupations or acquire new skills by 2030 because of automation and artificial intelligence (Agrawal et al. 2021). Workers across industries must figure out how they can adapt to rapidly changing conditions, and companies have to learn how to match those workers to new roles and activities. This dynamic is about more than remote working—or the part of automation and AI.

It's about how leaders can reskill and upskill the workforce to deliver new business models in the post-pandemic era. The roles of digital industries are more critical for business survival during the pandemic era. According to finding based on MDEC when tracking vacancies on five popular requirement platforms in Malaysia, digital job vacancies in Malaysia almost tripled from June 2020 to April 2021 (Nair 2021). MDEC found that the number of digital job vacancies increased from around 19,000 in June last year to more than 56,000 as of April 2021, with the largest share of vacancies posted on LinkedIn. The most popular jobs were in software development, data science, IT services, and e-commerce. It represents the critical of digital workforces in the pandemic era even more people have difficulties keeping their jobs in others skillset.

7 Result and Discussion

We concluded three significant factors that need to be highlighted to improve Malaysia's ICT talents based on secondary data analysis. The first one is, there is no proper encouragement among teeming youth to enroll in ICT-based disciplines. One of the significant challenges of ICT talent supply in Malaysia is the decline of ICT talents intake and graduates from IHL's. From Table 1 above, they are a decline of ~6% in ICT talents intake and ~2% decline in ICT graduates from IHL's between 2010 to 2013 (Ipsos Business Consulting 2014). This decline is mainly attributed to a lack of proper encouragement and motivation among youth to enroll in ICT-based disciplines. Student councilors and youth lack the right guidance and knowledge regarding ICT current trends, innovative ideas, and opportunities. The secondary School Education Board in Malaysia should use ICT industrial experts in learning activities to empower students with the creative ideas brought by ICT industries and the opportunities it presents. Furthermore, IHL's should make ICT-based disciplines less challenging to apply for and more available. IHL's can also send lecturers for industrial training for a proper understanding of current industrial needs.

Secondly, many talents migrate to other countries due to the fact about 4% of ICT companies in Malaysia are offering a starting salary above RM3000 (Ipsos Business Consulting 2014). ICT talents in Malaysia tend to migrate to foreign countries that provide more compensation compared to Malaysian ICT companies. In return, it affects the ICT talents supply pool. ICT industries in Malaysia should adopt a timely review of workforce salaries and increase bonuses and allowance of employees. Finally, ICT industries are rapidly changing technologies, knowledge, and work operations. However, IHL takes a longer time to review the curriculum. With respect to ICT courses, nearly 32% of IHL's in Malaysia review their courses curriculums yearly, 30% are most likely to check their courses curriculums every 2 years, 22% review theirs more than 2 years, while only ~8% review their courses curriculums within 6 months (Ipsos Business Consulting 2014). It shows a majority of IHL's in Malaysia only review their curriculum after 18 months, ultimately affect the Quality, competency, and employability of ICT graduates in meeting industrial demands.

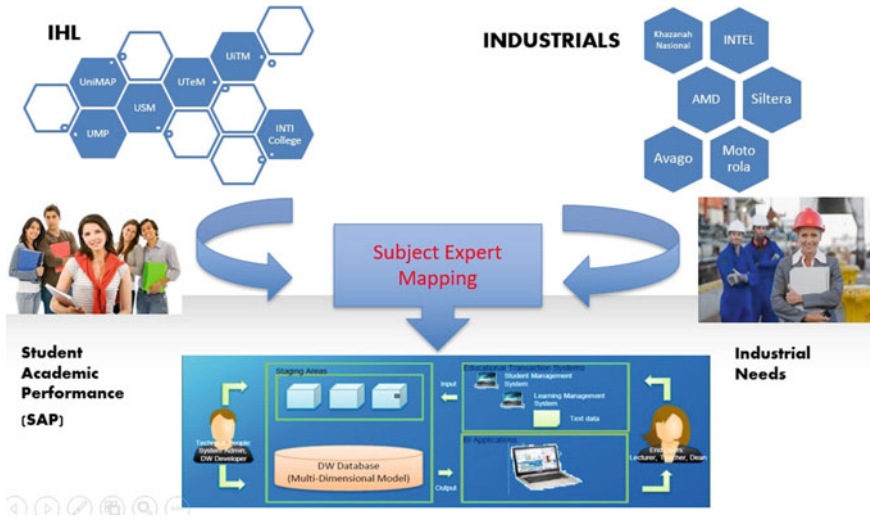


Fig. 8 Proposed framework for IHL's talent management

Additionally, the introduction of new ICT disciplines across IHL's is relatively low. This is mainly attributed to the lack of an innovative solution that can streamline ICT courses curriculums taken by IHL's with the current trends in ICT industries.

Therefore, new technology needs to be introduced to provide a real-time landscape of ICT TM in Malaysia. We propose applying Business Intelligence (BI) technologies to harmonize an up-to-date pool of talents from IHL's in Malaysia that can provide advanced analytics, as shown in Fig. 8. It will help to map current ICT industry needs to ICT talents performances across all courses curriculums in all IHL's. With an appropriate BI tool, IHL's can have better knowledge of current ICT industrial needs. This can guide IHL's towards timely implementation of relevant changes across ICT courses curriculum and introducing new ICT-based disciplines. Furthermore, ICT industries can access ICT talents' performance across all courses taken. As a result, ICT industries towards selecting appropriate talents that are best suitable to their industrial needs.

BI has many forms of definitions; however, all interpretations of BI conform with the concept behind its technique. A computer-based system used for hard business data analysis with the capability of spotting, drilling through, predicting and cross-referencing data from different data sources (Prat and Fruhlinger 2021). BI can also be seen as a hub constituting of various "fact based support systems comprising of unique tools with different architectures, approaches, methodologies, and databases (Chen et al. 2010)". They merge together to provide decisive knowledge to aid business owner's in making proper and guided decisions. The process of taking large amounts of data, analyzing that data, and presenting customised set of reports that summarize the essence of that data into the basis of business actions, enabling

management to make fundamental daily business decisions is viewed as BI (Stackowiak et al. 2007). Experts generally agree that BI gives companies certain benefits that are difficult to define precisely because of their indirect and delayed effort on business success, while other benefits are unpredictable and can only be seen after a certain period of using BI (Borut and Jurij 2010). One of the most critical benefits of BI is its ability to improve support for decision-making. To sum out, BI tools are set of different technologies that transform big data into meaningful and valuable information through real-time analysis, thereby aiding business managers to identify and create new business opportunities (Watson and Wixom 2007). These tools build a value chain of processes that involves the usage of various technologies with different architectures, techniques, and functions. Therefore, BI is a comprehensive solution for enhancing ICT talents management process in Malaysia.

8 Conclusion

This review paper approach combines reports, surveys, and presentations from three (5) significant publications by MSC, EPU, and MITI. It is also based on several journals, conferences, and white papers regarding global talent management. Based on data obtained, three factors need to be overcome to supply expected ICT talents for industries. Inconsistent supply of graduates from Malaysian Institutes of Higher Learning (IHL) and deficiency of industry-relevant skills resulted in a gap between talent demand and supply. Despite many IHL offer ICT courses, aligning the right courses to industrial needs to strike a balance between supply and demand is not an easy task. This problem can be attributed to the lack of a centralized repository of quality assured information about talents that can facilitate a comprehensive analysis of what we have and what we need to have concerning graduates to allow an appropriate measure of improvement. Secondly, the lack of integration of information about ICT talents across IHL in Malaysia, with trending industrial needs in a single repository, can facilitate TM practices such as mapping talents to industrial requirements. As a result, applying BI technologies is suggested to overcome the problem.

The future works will focus on using IR 4.0, such as Artificial Intelligence, on developing national talent pools in matching demand and supply between IHLs and industries. The real-time requirement to address future talents is an important task to ensure fresh graduates having the necessary skills needs by industries. At the same time, industries will give feedback to IHLs for relevant courses that must be included in the Teaching and Learning (T&L) process. The right balance between talents requirements will boost the national economy and keep the unemployment rates at the lowest point possible.

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The Role of Logistic Performance on Foreign Direct Investment-Growth Link: Evidence from Asian Countries



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Abstract The main objective of this paper is to determine the role of logistic performance as an absorptive capacity in moderating the FDI on economic growth in Asian countries. By applying panel data from 29 selected Asian countries over the 2007 to 2018 period. The main finding of this study indicates that logistic performance is contingent on FDI-growth link in Asian countries, however, based on the marginal effect calculated as proposed by Brambor et al. (2006), logistics performance shows a significant positive impact on inward FDI instead of outward FDI. Finally, the finding shows the role of the institution on logistic performance, the results indicated that a higher quality of regulation will support the performance of the logistic system which can boost economic growth.

Keywords Foreign direct investment · Logistic performance · Growth · Institution

1 Introduction

Economic growth becomes an important issue addressed by the economist. In the past sixth decades, the sources of economic growth have been explored. Solow (1956) introduced the neoclassical growth model, the main determinant to sustained economic growth, in the long run, is technological progress. To support the Solow model, economists introduce the endogenous growth model, where they stated that the role of technological progress on economic growth is through the accumulation of capital and labor (Romer 1986, 1987; Lucas 1988). The growth model had to be expanded to provide a better explanation of how there are countries that have grows faster than the others. Past growth literature had identified several major sources of economic growth, like Romer (1996), Gross and Helpman (1991), and

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Aghion and Howitt (1992) among many others had explained the roles of innovation on economic growth. Besides that Howitt (2000) and Jones (1995) indicated that research and development (R&D) is a determinant for a country's economic growth. The other economic factors like trade openness, international trade (export and import), FDI, financial market, labor market, total factor productivity also found as a determinant of economic growth and non-economic sources that affect the growth as stated by Acemoglu (2009), like institutions, government efficiency, political and administrative system, geography, cultural, social factors and demography.

Past literature has given more attention to the FDI channel as a major source of economic growth. Pan (2003) indicates that FDI is an important economic indicator worldwide which is consistent with the growing trend of FDI inflows in the last few decades. One of the earliest theories developed for FDI spillovers was by Findlay (1978). According to the model, FDI is among the important channels for technology spillover. The model also predicts that the technological gap will influence the degree of FDI spillovers.

The effect of FDI on country growth rate may also be enlightened by the endogenous growth model through the dissemination of technology (Barro 1990). Romer (1990), emphasizes the possible role of FDI in the growth process as technology dissemination and its relationship to economic growth. Romer (1986) introduced the theory of technological change into the production process, where he specified the technological progress as a function of R&D investment in knowledge that generates positive externalities. According to Grossman and Helpman (1991), the long-run economic growth was a result of an increase in competition and innovation that influenced technological progress and increased the country's productivity.

Based on the World Development Indicators database, the global FDI flows increase significantly especially in developed countries starting from 1995, and in 2012 developing countries become an important destination for FDI flows as they received more FDI than developed countries. As reported in the World Investment Report (2021), as benefited of FDI to host countries, rather than imposing restrictions and regulation on investments, most countries choose to liberalize and promote investment to sustained economic growth (Table 1).

The results from the implementation of investment policy measures had caused a substantial increase in world FDI, which directly affects economic growth. Figure 1 shows the flows of FDI and world GDP. As illustrates in Fig. 1, the inflows of FDI have increased from \$1,242.99 million in 1970 to \$1,227,501.35 million in 2019, and GDP in 1970 is \$870.45 million increase to 11,433.21 million in 2019. Thus, it is seen that FDI has become a vital source of economic growth. The existence of different channels of FDI spillovers leads to mixed findings in previous literature. Most of the positive spillovers were found in Sjöholm (1999). However, not all countries benefited from FDI. The negative spillover effect was found in Aitken and Harrison (1999), and Konings (2001), whereas the ambiguous spillover effect was noted in Harris and Robinson (2002), Kathuria (2000), Kokko et al. (1996, 2001), and Kugler (2001).

The ambiguous effects of the FDI-growth link were explained by researchers as the "absorptive capacity", where absorptive capacity is the capacity to internalize and

Table 1 National investment policies, 2003–2020

Item	Countries introduced policy changes	Regulatory changes	Liberalization /promotion	Restriction /regulation	Neutral/ indeterminate
2003–2007	67	128	107	20	1
2008	40	68	51	15	2
2009	46	89	61	24	4
2010	54	116	77	33	6
2011	51	86	62	21	6
2012	57	92	65	21	3
2013	60	87	63	21	3
2014	41	74	52	12	10
2015	49	100	75	14	11
2016	59	125	84	22	19
2017	65	144	98	23	23
2018	55	112	65	31	16
2019	54	107	66	31	16
2020	67	152	72	50	30

Source World Investment Report (2021)

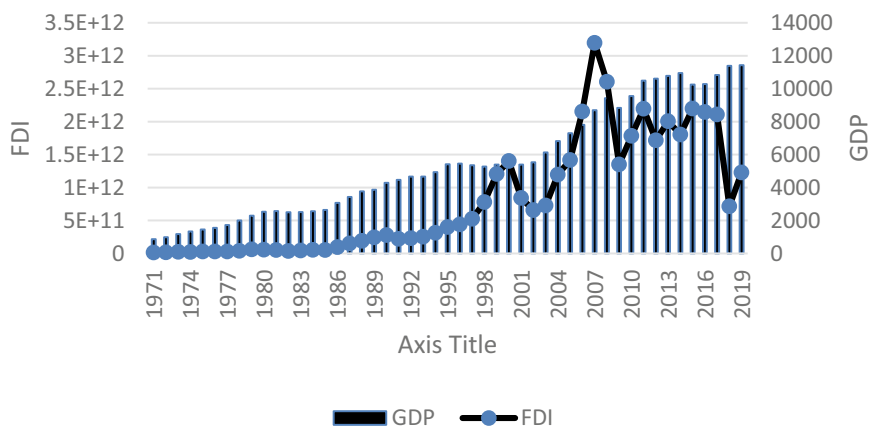


Fig. 1 The inflows of FDI and total gross domestic product. Source Data from WDI database

modifying it with other indicators for their specific objectives (Narula and Marin 2003). In previous studies, several factors were identified as absorptive capacity factors, such as financial market, Azman-Saini et al. (2010), human capital, Noorbakhsh et al. (2001), trade policy (Balasubramanyam et al. 1996), economic freedom (Azman-Saini et al. 2010) and institutional quality (Esew and Yaroson 2014). The

present study debate that, the effect of FDI on economic growth is possibly influenced by logistic performance. This factor is expected to benefit more to host countries because logistics is one important key of investment. Available literature has focused on the effect of logistic performance on trade, Study by Gani (2017) has indicated that logistic performance plays a significant role in general in international trade activities and specifically in exports. Tang and Abosedra (2019) proved that logistic performance level becomes the main factor for export-led growth in Asian economies. However, there is a lack number of empirical studies that focus on the role of logistic performance on FDI-growth links. Thus, this factor (logistic performance) should be scrutiny investigates and examine. In contrast to recent studies (Soh et al. 2021) that investigate the role of logistic performance and institutions on FDI, this paper will provide different empirical findings on the role of logistic performance on the FDI-growth link. The findings of our study are expected to provide new empirical findings and contribute to the body of knowledge and have significant implications for policymakers to formulation an effective policy on FDI-growth link. By utilizing panel data of 29 selected Asian countries from 2007 to 2018, Panel Dynamic Ordinary Least Square (DOLS) is employed. The analysis is also extended by investigating the role of logistic performance on outward FDI and the different measures of institutional quality impact logistic performance on FDI-growth links in Asian countries.

This paper is organized as follows. Section 2 covers a review of relevant literature on the review of FDI-growth studies, logistic performance and growth studies, and reviews of the role of absorptive capacity in FDI-Growth Link. Section 3 is methodology and data, presents the conceptual framework, empirical model, data, and econometric method. Detailed discussion on empirical findings is reported in Sect. 4. Finally in Sect. 5 presents the conclusion and discusses the policy implication.

2 Literature Review

2.1 *Studies on Foreign Direct Investment and Growth Link*

Discussion on FDI and growth relationship has been explored by many researchers (Ma 2009). A recent study by Bhattarai (2016) supported the important role of FDI on economic growth. By using panel data, Bhattarai (2016) estimated 30 OECD countries for the period 1990–2004. The finding established economic growth is significantly influenced by FDI, whereas the size of a country serves as an important factor. For a newly industrial economy to step up with the world's most modern countries, Yao and Wei (2007) stressed that FDI is a potent driver of economic development. Consistent with Chakraborty and Basu (2002), they began evaluating India from the year 1974–1996 in the short and long run then found out that FDI had a positive and important impact on growth.

Theoretically, a previous study supported the endogenous growth model, where FDI was viewed as a foreign capital that complements the domestic capital and contributes to the investment and domestic growth. This finding showed that the effect of FDI inflows at the microeconomic level, as channeled by the multinational corporations (MNCs). By using an uncertainty approach (Dixit and Pidyck 1994), the model indicated that FDI inflows were driven by the profit-maximizing objective of the MNCs. Although the investment objective was focused on profit-maximizing, host countries also benefited from the FDI inflows through technology transfer, diffusion, and spillover effects, in which spillovers occurred when indigenous firms gained in terms of efficiency and productivity from the entry or presence of the MNCs. By focusing on the developed and developing countries, Li and Liu (2005) provide empirical findings that FDI is a positive and significant impact on economic growth and supported by Lensik and Morrisey (2006). However study by De Vita and Kyaw (2009), the contingency positive impact of FDI on growth is found a positive effect on certain economic sectors but not the whole economy.

2.2 Studies of Logistic Performance on FDI and Growth

The existence of different channels of FDI spillovers, FDI by MNCs has always been associated with new technologies and provides a better integration into the world markets (Babic and Strucka 2001). Based on these optimistic outlooks, numerous countries have lifted several investment restrictions (World Investment Report 2021). However, the establishment of MNC in the host countries need to be complement with the better logistic infrastructure (Tang and Abosedra 2019; Luttermann et al. 2020; Saidi et al. 2020; Soh et al. 2021). Using panel OLS (POLS) on 31 Asian countries, Saidi et al. (2020), find that logistic performance is a positive and significant impact on FDI by incorporating the institutional quality.

Logistic performance is an indicator of country logistic performance. The level of national competitive power is determined by the logistic performance index (Soh et al. 2011). The past study had discovered a few channels of logistic development which is possible to provide linkages on economic growth. The first channel capitalization is found by Roller and Waverman (2001), where this channel is crucial for building and improving national logistic performance. Secondly, by using an efficient logistic system, Shirley and Winston (2004) stated that it will reduce the cost of production by firms which will encourage firms to increase the quantity of production. Hong (2007) determines the well organize logistic system at the host country as the other logistic development channel will attract additional inflows of FDI and increase the country's economic growth. Lastly, the firm productivity will increase through the utilization of logistic systems (Ciccone and Hall 1996). Therefore, the Logistic Performance (LP) index has been published by World Bank as a measure of the logistic performance of each country.

2.3 *The Role of Absorptive Capacity*

Past study has stated that financial market, human capital, trade policy, regulation, and institution are among the factors as an absorptive capacity in moderating the impact on FDI-growth link. The financial market is among the important factors in mediating the impact of FDI on growth. The important role of the financial market on productivity and growth was proven through empirical studies conducted by Beck et al. (2000) and King and Levine (1993). Several studies treated the financial market as an absorptive capacity factor and their findings showed that countries with better financial markets gain positive FDI spillovers. Hermes and Lensink (2003) establish that the positive impact of the financial market on FDI-growth in countries with well-functioning financial markets contributes to the technology diffusion allied with FDI. Azman-Saini et al. (2010) used a new econometric approach and employed a threshold regression model. This model suggested that the role of the financial market in promoting the impact of FDI on economic growth is enhanced at a certain level of threshold.

Another important aspect discussed in previous studies is the impact of trade policy on the FDI-growth relationship. According to Blomstrom and Sjöholm (1999), trade policy is one of the factors that influenced spillovers. Spillovers occurred when there are open trade regimes towards imports, where domestic firms benefit from embodied technology in capital goods and intermediate goods, and through the transfer of foreign technology to domestic firms. This finding was similar to Marino (2000), who studied the impact of trade regimes in developing countries. Countries were classified either as open economies or as closed economies. Estimation results indicated that an open trade regime has a significant positive influence on the FDI-growth nexus, whereas the relationship was found to be negative in closed economies.

Other studies highlighted the influence of human capital on the FDI-growth link. They suggested that the role of human capital as an enhancer in attracting FDI inflows. Human capitals with highly skilled workers were more productive and attracted the flow of desirable investments. Measurement of human capital was based on the schooling rate based on Barro and Lee (1993). A few explanatory variables used in this study, human capital based on school enrolment, trade openness, democracy, and risk. The results indicated that human capital was important and statically significant as a determinant of the FDI-growth link.

Several studies highlighted the importance of institutions in the FDI-growth link. The indicators of institution used in previous literature included government efficiency, rule of law, and regulation quality. A previous study by Alguacil et al. (2011) using GMM estimation analysis, showed there was a positive impact of institutional environment on FDI-growth relation in developing countries. Other indicators of institution used by Azman-Saini et al. (2010) investigated the role of economic freedom on the FDI-growth link in 85 countries by using a GMM technique and the findings indicated that FDI alone has no direct impact on growth.

By using the quality of institutional infrastructure, Slesman et al. (2015) showed that there was a positive effect of institutions on the relationship of foreign capital

inflows and economic growth. A study by Jude and Leveuge (2017) using threshold analysis in developing countries showed FDI has a positive effect on growth only beyond a certain threshold of institutional quality which is consistent with Agbloyor et al. (2016) study in Sub Saharan Africa. Using political development, Elkomy et al. (2016) confirmed the above results and indicated that the influence of FDI on economic growth was positive only in countries that achieve a certain level of political development. A study by Nordin et al. (2019) indicates the role of labor market flexibility as an absorptive capacity on FDI and growth relationship.

3 Methodology

3.1 Conceptual Framework

The common understanding holds that economic growth is connected with the accumulation of capital. However, there is no automatic connection between these two, because economic growth requires supports for this relationship. One of them is through the FDI channel, where the theory shows that FDI helps augment capital stock and it also serves as a significant source of human capital accumulation and technological progress. In addition, FDI is expected to promote knowledge transfer and labor skills which is important for economic growth. FDI might also affect growth with a better logistic performance. However empirical study states that FDI spillovers depend on the absorptive capacity in the host country and are not an automatic process (Borensztein et al. 1998).

3.2 Empirical Model

To examine the role of logistic performance impact on FD-growth link, this study follows a model which is similar to others (Ramirez 2000; Fedderke and Romm 2006). The externality associated with the FDI is modeled as follows:

$$GDP_{i,t} = \beta_0 + \beta_1 FDI_{i,t} + \beta_2 LP_{i,t} + \beta_3 X_{i,t} + \mu_{i,t} \quad (1)$$

where X is a control variable. Equation (1) serves as a baseline model for estimation purposes.

The objective of the study is also to report whether the FDI-growth link in Asian countries is dependent on logistic performance, Eq. (1) presented the integrating model with the interaction terms of $(LPI \times FDI)$.

$$GDP_{i,t} = \beta_0 + \beta_1 FDI_{i,t} + \beta_2 LP_{i,t} + \beta_3 X_{i,t} + \theta_1 (LP \times FDI)_{i,t} + \mu_{i,t} \quad (2)$$

where θ_1 is the coefficient of the interaction term between logistic performance and FDI, which will show the effect of FDI on economic growth depend on the level of logistic performance. If the coefficient of the interaction term is positive, it will indicate that an increase in the logistic performance in Asian countries, will attract more FDI inflows and increase the country's economic growth. Otherwise, if the interaction coefficient is negative, it will indicate that an increase in logistic performance reduces the contribution to FDI and economic growth. Specifically, with partial derivative, the marginal effect of FDI on economic growth contingent on logistic performance can be calculated, $\frac{\partial GDP_{it}}{\partial FDI_{it}} = \beta_1 + \theta_1 LP_{it}$.

3.3 Data

The data set is based on 29 selected Asian countries over the 2007–2018 periods. The dependent variable is measure with per capita real GDP. FDI data is expressed as a ratio of net inflows, and a net outflow of foreign direct investment to GDP. As explained in endogenous growth theory, FDI is a factor that tends to contribute to the growth rate. The importance of physical capital and human capital on economic growth is stated in the endogenous growth theory. In this study, the ratio of gross fixed capital formations to GDP is used as a proxy of physical capital which is stated by Zhang (2008). By referring to Davies and Quinlivan (2006), life expectancy at birth is an indicator of human capital. The population growth is computed as the growth rate of the number of population. The data were extracted from the World Development Indicators database (WDI). Data of institution of government efficiency, rule of law, and regulatory quality are extracted from Worldwide governance indicators (WGI). The data are in natural logarithm for standardization. Table 2 provides a summary of all data. Tables 3 and 4 report the summary of descriptive statistics and cross-correlation matrix respectively.

3.4 Panel Data Estimation Procedures

There are three steps of analysis. First, assess the stationary properties of all variables. Second, test whether these variables are cointegrated. In the final stage, we obtain reliable estimates of slope parameters using the dynamic OLS (DOLS) estimator. To examine the unit root test, this study uses two-panel unit root tests namely, Im-Pesaran-Shin (henceforth IPS) test and Levin-Lin-Chu (henceforth LLC) test. Kao's (1999) cointegration test was examined to examine a cointegration relationship among the variables. To obtain reliable estimates of long-run coefficients for each of the variables, this study uses dynamic ordinary least squares estimators (DOLS) proposed by Kao and Chiang (1999). This approach is an extension of Stock and Watson's (1993) procedure. The estimated dynamic OLS was obtained by:

Table 2 Summary of data

Variable	Measurement	Source of data
Growth	GDP per capital	World Development Indicator (WDI)
Foreign direct investment	Net inflows of FDI as a ratio to GDP	WDI
	Net Outflow of FDI as a ratio to GDP	
Institution	1. Government Effectiveness 2. Rule of Law 3. Regulatory Quality	Worldwide Governance Indicator (WGI)
Population growth	Population growth rates	WDI
Physical capital	Gross fixed capital formation to GDP	WDI
Human capital	Life expectancy at birth	WDI
Logistic performance index	Overall score of logistic performance	WDI

$$y_{it} = \alpha_i + x'_{it}\beta + \sum_{j=-q_i}^{j=q_i} c_{ij} \Delta x_{it+j} + \dot{v}_{it} \tag{3}$$

The dynamic OLS estimator can be applied to Eq. (2) as follows:

$$\begin{aligned}
 GDP_{it} &= \alpha + \beta_1 FDI_{it} + \beta_2 LP_{it} + \theta_1 LP_{it} \times FDI_{it} + \beta_4 X_{it} \\
 &+ \sum_{j=-q}^q c_{ij} \Delta FDI_{i,t+j} + \sum_{j=-q}^q c_{ij} LP_{i,t+j} \times FDI_{i,t+j} + \sum_{j=-q}^q c_{ij} \Delta X_{i,t+j} \varepsilon_{it}
 \end{aligned} \tag{4}$$

$$\begin{aligned}
 GDP_{it} &= \alpha + \beta_1 FDI_{it} + \beta_2 LP_{it} + \theta_2 LP_{it} \times INS_{it} + \beta_4 X_{it} \\
 &+ \sum_{j=-q}^q c_{ij} \Delta FDI_{i,t+j} + \sum_{j=-q}^q c_{ij} LP_{i,t+j} \times INS_{i,t+j} + \sum_{j=-q}^q c_{ij} \Delta X_{i,t+j} + \varepsilon_{it}
 \end{aligned} \tag{5}$$

where GDP is Gross Domestic Product, FDI is Foreign Direct Investment (inward and outward), LP is the index of logistic performance, LP × FDI is the interaction term between logistic performance and FDI, X are other control variables (i.e. physical capital, human capital, population growth and institutions), LP × INS is the interaction term between logistic performance with institutions. $\sum_{j=-q}^q c_{ij} \Delta FDI_{i,t+j}$ comprises of the leads and lags of the first difference of FDI (inward and outward),

Table 3 Summary of descriptive statistics

	GDP	FDI	OFDI	PC	HC	PG	ROL	RQ	GE	LPI
Mean	3.6933	0.6047	7.2445	0.8739	1.8692	0.3172	0.3819	0.4295	0.5103	0.4731
Median	3.7456	0.5051	0.7657	0.9322	1.8718	0.2323	0.2583	0.3258	0.3418	0.4770
Maximum	4.8207	2.4473	301.249	1.6943	1.9290	1.7456	2.4509	2.4415	2.8082	0.6222
Minimum	0.0068	0.0036	0.0000	0.0239	1.8090	5.30E-05	0.0016	0.0008	0.0075	0.3086
Std. dev.	0.8111	0.4759	33.1836	0.3635	0.0288	0.2770	0.4332	0.4106	0.5294	0.0795

Note: *GDP* gross domestic product, *FDI* inward FDI, *OFDI* outward FDI, *PC* physical capital, *HC* human capital, *ROL* rule of law, *RQ* regulatory quality, *GE* government efficiency, *LPI* logistic performance index

Table 4 Cross-correlation matrix

	GDPI	FDI	OFDI	GFCF	HC	PG	ROL	RQ	GE	LPI
GDPI	1									
FDI	0.2394	1								
OFDI	0.1888	0.5639	1							
GFCF	-0.0676	0.0174	0.0116	1						
HC	0.5495	0.3321	0.2560	-0.3007	1					
PG	0.1676	-0.0535	-0.1243	-0.0582	0.2543	1				
ROL	-0.2766	-0.2173	-0.1215	-0.0645	-0.0523	-0.08427	1			
RQ	-0.1557	-0.1033	-0.1381	-0.0281	-0.0936	-0.0316	0.3289	1		
GE	-0.0803	-0.1193	-0.1288	-0.0159	-0.0864	-0.0785	0.4212	0.5690	1	
LPI	0.4058	0.1628	0.1294	-0.3213	0.7161	0.1364	0.1743	0.01469	0.0425	1

Note: *GDPI* gross domestic product, *FDI* inward FDI, *OFDI* outward FDI, *PC* physical capital, *HC* human capital, *ROL* rule of law, *RQ* regulatory quality, *GE* government efficiency, *LPI* logistic performance index

$\sum_{j=-q}^q c_{ij} LP_{i,t+j} \times FDI_{i,t+j}$ comprise of the leads and lags of the first difference for the interaction term of logistic performance and FDI, $\sum_{j=-q}^q c_{ij} \Delta X_{i,t+j}$ is the leads and lags of the first difference of other explanatory variables, $\sum_{j=-q}^q c_{ij}$, $LP_{i,t+j} \times INS_{i,t+j}$ is the leads and lags of the first difference for the interaction term of logistic performance and indicator of institutions. The lags of the models were selected according to the Akaike information criterion (AIC).

4 Empirical Results

4.1 Descriptive and Correlation Analysis

In the last section, we have discussed the model specification, variables used, and sources of data, and the econometric techniques that will be employed to examine and estimate the impact of logistic performance on the FDI-growth link in Asian countries. The finding of the estimation is present in Tables 3, 4, 5 and 6. As a preliminary analysis, Table 3 provides summary statistics for all variables used in this analysis. The statistics presented in the table are based on annual data over the 2007–2018 periods across 29 selected Asian countries.

Table 4 presents the cross-correlation analysis for all variables. The results show that the interest variable of this study shows positive correlations between FDI, logistic performance with economic growth. According to UNCTAD (2006), the increase of growth performance of Asian countries is due to the policy changes towards greater openness that increase the number of establishments of Asian MNCs which they make investments abroad.

Table 5 Result of dynamic OLS estimation

Variables	Coefficient
FDI	0.0633***(0.000)
OFDI	-0.0002(0.2032)
PC	-0.0177***(0.000)
PG	8.9781***(0.000)
HC	0.0513***(0.000)
ROL	0.0597***(0.000)
RQ	-0.0846***(0.000)
GE	-0.0183***(0.000)
LPI	0.1877***(0.000)

Note: *GDP* gross domestic product, *FDI* inward FDI, *OFDI* outward FDI, *PC* physical capital, *HC* human capital, *ROL* rule of law, *RQ* regulatory quality, *GE* government efficiency, *LPI* logistic performance index

Table 6 Estimate of long run coefficients

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
FDI	0.3091*** (0.0000)	0.0629*** (0.000)	0.0306** (0.0104)	0.1653*** (0.0000)	0.0605*** (0.0010)
OFDI		-0.0057** (0.0243)			
GFCF	0.0515*** (0.0000)	-0.0201*** (0.000)	-0.0070 (0.4740)	-0.1701*** (0.0000)	-0.0064 (0.6000)
PG	16.6655*** (0.0000)	8.9870*** (0.000)	14.9812*** (0.0000)	19.8768*** (0.0000)	13.8944*** (0.0000)
HC	0.0277* (0.0702)	0.0524*** (0.000)	0.0894*** (0.0000)	0.2545*** (0.0000)	0.1448*** (0.0000)
ROL	-0.017551 (0.2226)	0.0598*** (0.000)	0.0562** (0.0000)	0.1608*** (0.0000)	0.7729*** (0.0000)
RQ	-0.2533*** (0.0000)	-0.0812*** (0.000)	-0.3034*** (0.0000)	-0.8041*** (0.0000)	-0.2813*** (0.0000)
GE	-0.0176 (0.1514)	-0.0176*** (0.000)	0.1679** (0.0357)	-0.0599*** (0.0000)	-0.0038 (0.8285)
LPI	0.375547*** (0.0000)	0.1515*** (0.000)	1.3895*** (0.0000)	-0.1497 (0.2648)	1.9882*** (0.0000)
LPI × FDI	0.859302*** (0.0000)				
LPI × OFDI		0.0111** (0.0293)			
LPI × GE			-0.2653 (0.1133)		
LPI × RQ				1.7256*** (0.0000)	
LPI × ROL					-1.3405*** (0.000)
<i>Marginal effects of LPI_{it}</i>					
$\beta_0 + \theta_1 LPI_{Mean}$	0.7156***	0.1749**	-0.1431*	0.5132***	0.1387*
$\beta_0 + \theta_1 LPI_{Max}$	0.8437***	0.0012***	0.0046*	0.7705***	-0.0611*
$\beta_0 + \theta_1 LPI_{Min}$	0.5742***	-0.0022*	0.0878*	-0.0611*	0.3592*

Note: *GDP* gross domestic product, *FDI* inward FDI, *OFDI* outward FDI, *PC* physical capital, *HC* human capital, *ROL* rule of law, *RQ* regulatory quality, *GE* government efficiency, *LPI* logistic performance index

4.2 Panel Cointegration Test

Having established that each of the variables is integrated of order one $I(1)$, the cointegration test suggested by Kao and Chiang (1999) is employed for the panel cointegration test. The results show that there is strong evidence to support the conclusion made earlier as the null of no cointegration can be rejected at the 1% level in all cases.

4.3 Long-Run Elasticities

As the variables are integrated of order one $I(1)$ and cointegrated, the next step is to examine the long-run relationship between variables using a dynamic OLS estimator. The results of estimating the baseline model which includes all variables are reported in Table 5. The result shows that the growth elasticities for Asian countries with respect to logistic performance and FDI is a positive relationship. This result is consistent with Bhattacharai (2016), Bengoa and Sanchez-Robles (2003), Dees (1998) among many others. The logistic performance is a positive and significant impact on economic growth. This finding indicates that a country's economic growth is influenced by a well-organized logistic system. This finding is consistent with Maparu and Mazumder (2017).

The role of human capital is also positively significant on economic growth, which means that human capital that is the labor market is one of the sources of economic growth. This indicates labor market will promote output growth and this is consistent with the findings in Besley et al. (2004) and Nickell and Layard (1999). The estimated coefficient on population growth also indicates a positive impact on economic growth. The other two variables physical capital and human capital are positively related to economic growth and statistically significant at the 1% level. This is in line with previous studies by Yan and Yudong (2003), among many others.

However, the impact of outward FDI on economic growth in Asian countries indicates a negative sign. This happens because, as a host MNC located their production facilities abroad, it will reduce domestic production and direct effect on economic growth. This finding is similar to (Stevens and Lipsey 1992; Wong 2010). A study by Denzer (2011) stated that to capture the impact of outward FDI on economic growth, the role of absorptive capacity should be incorporated in the estimation analysis.

The next step of analysis is to examine the role of absorptive capacity in FDI-growth links because the impact of logistic performance on growth depends on the level of logistic performance at host countries (Hong 2007). Specifically, the main objective of this study is to examine the role logistic performance plays in moderating the impact of FDI on economic growth. To test this hypothesis, interaction specification is estimated. Five models are estimated and the results are presented in Table 6. Based on the computed R-square, for all estimation models, it indicates that approximately 70–90% of GDP growth in Asia is possible to be predicted by the

explanatory variable used in the model estimation. The result of model 1 indicates that the coefficient of inward FDI and logistic performance is positive and highly significant on economic growth with 0.3091 and 0.3754. Having the interaction specification in the estimation between logistic performance and inward FDI, the result shows that logistic performance plays a significant role to attract the inflows of FDI in Asia countries and boost the Asian economic growth with the coefficient of the interaction term is 0.8593 with 1% significant level.

The second model estimate the outward FDI, the coefficient of outward FDI remains as reported in Table 6. The logistic performance indicates a positive and significant impact on economic growth, which indicated that, for outward FDI, the well-organized logistic system is important. To examine the role of absorptive capacity, and interaction between logistic performance and outward FDI was estimated. Interestingly, the coefficient of the interaction term indicates a positive sign. Thus, the results indicate that either inward FDI or outward FDI, logistic performance plays a vital role in FDI spillovers on economic growth.

According to Wong and Tang (2018), the logistic performance could be affected by institutional quality, thus, by using three indicators of institutions (government efficiency, rule of law, and regulation quality), we estimate the interaction term between these institutions' indicators with logistic performance. Results are shown in model 3 of interaction logistic performance with government efficiency (LP × GE), model 4 of interaction logistic performance with regulation quality (LP × RQ), and model 5 of interaction logistic performance with rule of law (LP × ROL). Going straight to the estimation of the interaction of the impact of logistic performance that supporting by institutions on economic growth, the estimation results show that only regulation quality is positive influence logistic performance is in tandem with finding by Tang and Abosedra (2019). However, the coefficient of the interaction of the other two indicators of institutions (LP × ROL) and (LP × GE) is negative. The estimation coefficient indicates that logistic performance concerning the institutions does not have a direct impact on economic growth in Asian countries.

To identify the most effective role of logistic performance on the FDI-growth link, it can be determined based on the value of marginal effects. At the margin, the total effect of logistic performance can be calculated by examining the partial derivative of GDP with respect to the FDI/institutions, and standard error of the marginal impact are computed following Brambor et al. (2006).¹ The marginal effect of (i) inward FDI is $\frac{\partial GDP_{it}}{\partial IFDI_{it}} = \beta_0 + \theta_1 LP_{it}$ (ii) outward FDI $\frac{\partial GDP_{it}}{\partial OFDI_{it}} = \beta_0 + \theta_1 LP_{it}$; (iii) government efficiency is $\frac{\partial GDP_{it}}{\partial GE_{it}} = \beta_0 + \theta_1 LP_{it}$; (iv) regulation quality is $\frac{\partial GDP_{it}}{\partial RQ_{it}} = \beta_0 + \theta_1 LP_{it}$; (v) Rule of Law is $\frac{\partial GDP_{it}}{\partial ROL_{it}} = \beta_0 + \theta_1 LP_{it}$. The marginal effect of inward FDI, outward FDI, and different measures of institutions on economic growth can be calculated at the mean (LP_{mean}), maximum (LP_{Max}), and minimum (LP_{Min}) level of logistic performance. Table 6 report the estimation results of marginal effect and standard error of estimation models.

¹ For example, in the case of the model is $Y = \beta_0 + \beta_1 X + \beta_2 Z + \beta_3 XZ + \varepsilon$, the marginal effect is $\frac{\partial Y}{\partial X} = \beta_1 + \beta_3 Z$ and the standard error is $\hat{\sigma}_{\frac{\partial y}{\partial x}} = \sqrt{var(\hat{\beta}_1 + Z^2 var(\hat{\beta}_3)) + 2Zcov(\hat{\beta}_1, \hat{\beta}_3)}$.

Based on the estimation marginal effect in Table 6, interestingly the results indicate that the marginal effect is statistically positive significant at value LP_{Mean} and LP_{Max} of inward FDI and outward FDI. The results indicate that the growth effect of outward FDI is slightly lower than the impact of inward FDI. From the value of mean for logistic performance, it shows that a 10% increase in inward FDI and outward FDI, will increase 7.156% and 1.749% increase economic growth in Asian countries. Besides that, the marginal effect shows that the effect of inward FDI on growth is at an increasing rate when logistic performance achieves a maximum level. More specifically, the effect of logistic performance on growth is 8.437% for every 10% increase in inward FDI. However, for outward FDI, the results show as maximum logistic performance reduces the impact on economic growth in Asian countries.

The result of marginal the effect of logistic performance through FDI on growth for the regulation quality shows that only this institution indicator when reaches a maximum level it will positive and significant impact on economic growth. This finding indicates that the high quality of governance can speed up logistics performance which in turn leads to economic growth (Koh et al. 2018; Wong and Tang 2018).

5 Conclusion and Its Implication to Policy

This paper examined the effects of logistic performance on FDI-growth links in Asian countries using panel data of 29 selected countries over the period 2007–2018. The findings revealed there is a positive correlation between logistic performance on economic growth. The empirical analysis using panel dynamic OLS reveals that logistic performance and FDI are important to growth for the Asian countries examined. The other important findings of this study are that the effect of FDI on economic growth in Asian countries is conditional on the level of the logistic performance at host countries. Besides that, the findings also indicated that the effects of the logistic performance on economic growth are depending on the institutional quality also, but the marginal effect is only positive and significant when regulation quality is greater than its maximum level. Thus, these findings are consistent with the growing view in the need of absorptive capacity to reap maximum benefit from logistic performance.

Further, logistics performance is contributed by both economic and non-economic factors. Therefore, non-economic factors such as an institution should not be neglected by the policymaker as an increase on the institutional quality, by control the corruption, political stability, economic freedom, and better governance could better impact the logistic performance. Therefore, Asian countries should learn from advanced economies like developed countries or OECD countries in their pursuit to improve the interactions of quality institutions along with logistic performance in better ways.

This study provides two major contributions. In the theoretical aspects, the logistic performance should complement the new endogenous growth model. Centered by a new endogenous growth model, this paper shows the relationship impact of logistic

performance through FDI on economic growth, and the level of institutional quality provides a contingent role to the level of logistic performance. The limitation of this study is data and indicators for logistic performance and institutions. Different indicators of logistics performance and institution would be more potential findings for future study on FDI and logistic performance on economic growth.

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Role of Supply Chain Collaboration and Organizational Agility on Promoting Relational Rents: A Literature Review



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Abstract Nowadays, valuable, rare, imperfectly imitable, and non-substitutable (VRIN) resource that is essential for a firm to survive in a turbulent environment might reside inside an alliance. A collaboration that benefits all alliance members is an alternative strategy, where alliance members will be able to use a relational resource, without any need to invest or acquire it. Utilization of relational resource by alliance members can create a relational rent, a supernormal profit that can be enjoyed by alliance members and will not be achieved by a firm individually. Supply chain collaboration ensures a stable supply for a firm as well as lower transaction cost. Supply chain collaboration also increases the ability of the firm to sense and respond rapidly, properly, and efficiently to environmental change, which means that supply chain collaboration promotes organizational agility. An agile firm will be able to reconfigure owned resources and combined them with a relational resource that potentially results on the ability to develop products that fit the market and increase revenue and at the end may increase relational rent. Our literature review finds that supply chain collaboration has a positive effect on relational rent, both directly and through the development of organizational agility.

Keywords Relational view · Supply chain collaboration · Organizational agility

1 Introduction

Organizational agility (OA) has been a very popular topic in the last 5 years. In 2016—early 2021, there were 241 scientific articles published by reputable journals (Elsevier, Emerald, Springer, Taylor and Francis, and Wiley) with total 5.952 citations.

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Most of the articles put supply chain agility on surface (53 articles), followed by information technology (34 articles), human resource (28 articles), and strategic agility (16 articles). Many researchers tried to reveal the effect of supply chain management on Organizational Agility, but little is known about the role of supply chain collaboration on Organization Agility. The majority units of analysis are a single firm that tries to ensure the security of supplies or to create a relationship where suppliers will be able to fill the raw materials needed to support the production of goods and new product development process. None of these studies try to reveal the reality that distinctive resources may reside in a relationship, and can be utilized only by alliance members or cooperation partners. This field needs attention in the future.

Dynamic Capability (DC) is widely used as a theoretical lens in OA research. DC is developed based on RBV which focuses on the ability of a company to sense environmental dynamics and respond appropriately. Several authors use dynamic capability to explain the relationships among variables in terms of OA. For example (Mandal and Saravanan 2019) examined several antecedents of supply chain agility in tourism sector. Supply chain agility is positively affected by entrepreneur orientation, supply chain orientation, technological orientation, DAN market orientation. Dubey et al. (2019) found that Big Data Analytics Capability has a positive influence on supply chain agility, and therefore increases competitive advantage. Another research conducted by Queiroz et al. (2018) describes that IT application orchestration capability has positive influence on OA. Resource based view (RBV) is another theoretical lens that is used in OA research. For example (Tallon et al. 2019) explained that IT promotes OA by increasing the company's ability to sense and react. Another research conducted by Mandal and Saravanan (2019) describes that relations development, shared vision, companies integration, and perception of technology have a positive effect on supply chain agility.

Dynamic capability mostly focuses on the ability that is developed using internal factors, while RBV mostly focuses on resources that are fully controlled by the company. Both dynamic capability and RBV can not clearly give explanation about distinctive resources that are created by alliance partners, which will become a relational resource. The most appropriate theory to figure this topic is Relational View. Dyer and Singh (1998) introduced the Relational View (RV) as an extension from RBV. This theory argues that valuable, rare, imperfectly imitable, and non-substitutable (VRIN) resources can be developed in a network of partnership or strategic alliance. This resource is very specific and can be utilized only by partners inside an alliance or partnership. Companies outside this alliance have no access to this resource. Therefore this resource is distinct and able to increase competitive advantage of an alliance. Since OA is an extension of Dynamic Capability, we can argue that relational resources can also promote OA. The alliance between a company with its suppliers can create a VRIN resources. Each party in the alliance has complementary resource and exchangeable knowledge, which comply with the main assumption of Relational View. Therefore we can explore a new constellation between supply chain collaboration and organizational agility.

This article is a literature review and is motivated by three research gaps. First, in the last 5 years, only (Liu and Yang 2020) explored network structure as a mediating

variable between enterprise agility and firm performance. There is an opportunity to explore this topic deeper. Second, we use RV as a theoretical lens that will reveal the role of supply chain collaboration in creating relational resource and knowledge exchange. Third, we need to explore how relational resource and knowledge exchange are facilitated by supply chain collaboration so that it will promote Organizational Agility.

2 Objective and Structure of Research

The main purpose of this study is to reveal the effect of supply chain collaboration on organizational agility through the lens of Relational View. This study is divided into four sections, those are: (1) Introduction, which consists of research objective, theoretical issue, and research gap, (2) Literature Review, which consists of a description of the theory and the relationship between supply chain collaboration and organizational agility, (3) Discussion, and (4) Conclusion.

3 Literature Review

3.1 Relational View

Relational View (RV) is an extension of Resource Based View (RBV) that assumes VRIN resources might reside inside an alliance or strategic partnership. Interaction among companies in the alliance can create a distinct resource that is specific and can only be used and accessed by members. Outside companies can not utilize this resource. Unit of analysis of RV is a network of companies that commits to collaborate on attaining the same goal. Dyer and Singh (1998) discover four factors that can create relational rent for alliance members, those are: investment in relation specific asset, substantial knowledge exchange, combining complementary and scarce resource, and effective government mechanism. An alliance that performs those four factors will enjoy a relational rent a supernormal profit that can be generated together by alliance members, which can not be achieved individually.

Alliance members will develop a relation specific asset that is unique and can not be imitated by others. To be successful, there are two subprocesses needed, namely: period of safeguards and scale and scope of exchange among alliance members. A relation specific asset will be able to reduce transaction cost, larger product differentiation, minimize defect product, and accelerate product development cycle, and finally will be able to create relational rent. Interaction between alliance members also will facilitate substantial knowledge exchange regularly and continuously. Knowledge exchange results transfer, recombination, or creation of specific knowledge that resides in the network. Two subprocesses of substantial knowledge exchange are:

absorptive capacity of alliance members and incentives to stimulate transparency and prevent opportunistic behavior.

Complementary and scarce resources are owned by alliance members. The combination of these resources will create a VRIN relational resource that is not available in the secondary market and inseparable from the alliance. Only companies in the alliance will have access to utilize this resource. Two subprocesses of combining complementary and scarce resources are: the ability of alliance members to recognize and evaluate potential complementary resources of other members and also the role of alliance members to obtain benefit from the complimentary resource. The knowledge exchange and creation of VRIN relational resources will be able to minimize the cost of product development and in the end will produce relational rent (Fig. 1).

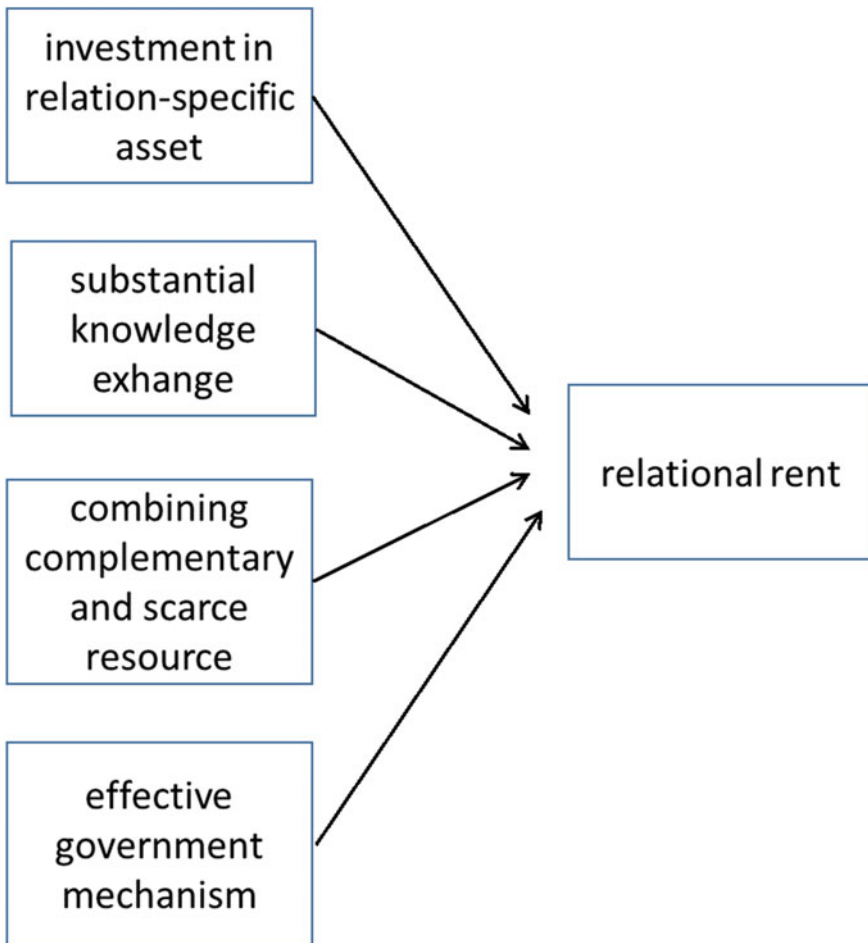


Fig. 1 Relational view (Dyer and Singh 1998)

Effective government mechanism that carried out by alliance member has a potential to reduce supervisory cost. The mechanism can also be modified in line with alliance dynamics. Alliance members commit to implementing safeguards so that they can prevent opportunistic behaviors such as free-riding. Two subprocesses of effective governance are efficient self-management and the ability to carry out informal and formal governance. The effective government mechanism will have consequences on lowering the cost of supervision and control, compared to a third party government mechanisms. This mechanism is also flexible, avoiding the cost of developing and implementing new government mechanism. Efficient governance ends on relational rent.

Dyer et al. (2018) di an improvement on RV, by considering dynamic lense on RV. They found that alliance will experience changes over time and there must be some considerations on variables that protect it from diminishing. They looked deeper into the complimentary resource and relations between alliance members and argue that interdependency among complementary resource and the value of an investment on a relational resource may complete the theory. Replacement of complementary resource and low interdependency will reduce relational rents. A focal company's investment in a relational resource can also have a positive impact on relational rents if there is no significant difference in investment among alliance members. This focal company potentially acquires a large resource portfolio that creates bigger value creation in the alliance. And finally, in terms of complementarity among resources is declining, then the role of informal safeguards is also decreasing.

3.2 Supply Chain Collaboration

Supply chain collaboration (SCC) is different from vertical integration. Collaboration means the utilization of suppliers' resources by a company without any intention to acquire it. Suppliers have complementary resources which could potentially create a competitive advantage if combined with resources owned by the company. The main point is that benefit of collaboration is enjoyed by every collaborative partner. Liao et al. (2021) defines SCC as the level of information sharing, decision synchronization, and incentives alignment between supply chain partners. Shou et al. (2018) defines SCC as close and long term cooperation between supply chain partners, that is build upon the willingness of all partners to share information and resources, and shared understanding to attain the same goal. Jimenez-Jimenez et al. (2019) defines SCC as a process of long term cooperation between supply chain partners who share the same goals, and working closely together to achieve mutual benefit that can not be attained individually.

SCC emerges when there are interactions between seven components, those are: information sharing, goal congruence, decision synchronization, incentive alignment, resources sharing, collaborative communication, and joint knowledge creation (Zhang and Cao 2018). Alliance members share several relevant and important information so that in this cooperation, a company knows the capacity and capability of

suppliers, and suppliers know what the company needs and will prepare appropriate resources. In this way, suppliers will minimize the cost of unsold materials, and a company can optimize just-in-time inventory management. Goal congruence is a perception of a company that its goals can be fulfilled by achieving the collaboration goals. Goal congruence motivates alliance members to work collaboratively to achieve mutual objectives. A company should coordinate and integrate decision making, especially in the planning and operation process, so that synchronized decision will benefit alliance members. Decision synchronization facilitates joint effort and co-utilization of resource and ability.

Incentive alignment is a process where alliance members share cost, risk, and benefit. The most important part is that incentive alignment will lead to maximizing benefit to all members as well as minimizing loss and risk, and also preventing members from undertaking opportunistic behavior. Resource sharing encompasses all efforts that are carried out together by alliance members to leverage and invest in capabilities and assets. Resource sharing also enables alliance members to create competitive products in efficient and effective manners. Collaborative communication is a process of transmitting information to alliance members. The process is two way and implemented regularly. All members will share the same information that will direct all efforts to achieve the same objective. Joint knowledge creation is a process where alliance partners develop a new and better conception that respond to environmental demand, where they will deliver the product. This relational knowledge has the potential to create VRIN resources, and increase the competitive advantage of the alliance.

SCC is an important element to create efficient and productive operations, to achieve collaborative benefit and competitive advantage, through coordination of resource and information sharing among suppliers (Uvet et al. 2020). SCC leverage a company's ability to enhance the transactional relationship into strategic partnership, based on mutual trust. A company can gain information about customer needs and access for a permanent solution based on supplier's ability (Haus-Reve et al. 2019). SCC involves the process and integration of cooperation among collaborative companies in the planning process and supply chain operation, which leads to gain shared goals and profit (Chi et al. 2020). Therefore, SCC will give benefit to all alliance partners in the long term perspective, and be able to create marginal profit that can be enjoyed by firms in the alliance.

3.3 Organizational Agility

Organizational agility (OA) is an ability within a company that allows it to move flexibly in a dynamic environment, and use available resources to exploit opportunities and gain its objectives. Walter (2021) defines Organizational Agility (OA) as a firm's dynamic capability that is obtained by learning, and permanently available, and can be used rapidly and efficiently as needed by the firm to increase business

performance in a volatile market. Žitkienė and Deksnys (2018) defines OA as an organizational ability to realize unexpected changes in the surrounding environment, and respond in a quick, accurate, and efficient manner, by utilizing and reconfiguring internal resources, as well as gaining competitive advantage from those processes. Singh et al. (2013) defines OA as an ability or a firm to sense and respond to the environmental change by altering the amount of product and services variation and frequency of product and services variation at a time.

As a firm capability, OA is formed by five abilities which are: sensing, searching, seizing, shifting, and shaping (Baškarada and Koronios 2018). Sensing is the ability to detect opportunities and threats from the external environment. Searching is the ability to seek opportunities from the internal environment. Seizing is the ability to make an unusual decision about strategy, business model, and transformation. Shifting is the ability to implement a new strategy business model, and capacity, and direct the firm to a new expected condition in the future. Shaping is the ability to implement new capability to fill requirements from the external environment, and attain operational efficiency and effectivity, as well as develop that new capability.

Walter (2021) describe four main categories of OA, those are: agility drivers, agility enablers, agility capabilities, and agility dimensions. Agility drivers are all factors from the organizational environment that require changes in the organization to survive and thrive, for example: changes in customer needs, competitive environment, social and legal factors, technology, and business network. Agility enablers are the potential owned by the company that can lead to the organization's ability to flexibly respond to environmental changes, for example: supple human resources, flexible operational policies, and databank that is accessible everywhere. Agility capability is the specific ability of a company to be able to flexibly deal with environmental changes shaped by agility enablers, which consists of: responsiveness, speed, flexibility, and competency. Agility dimensions are organizational components where flexibility exists, namely supply chains, human resources, business processes, strategies, information systems, and facilities. Interaction of those four categories above potentially increases OA and in the end will leverage the organizational performance in the volatile environment.

3.4 Propositions

3.4.1 Effect of Supply Chain Collaboration on Relational Rents

In this study, we define supply chain collaboration as cooperation with suppliers in terms of research, design, and production of goods or services, to be able to continuously utilize resources and knowledge owned by suppliers, as well as sharing risk, in order to achieve benefits that would not be possible to attain by the company alone. Supply chain collaboration consists of seven components that interact with each other (information sharing, joint knowledge creation, resource sharing, goal congruence, decision synchronization, incentive alignment, and collaborative communication)

which potentially resulting in efficiency. Those components of SCC have similarities with factors that leverage relational rents in Relational View, namely: substantial knowledge exchange, combining complementary and scarce resources, and effective government mechanism. Information sharing and joint knowledge creation can be clustered to substantial knowledge exchange, that according to Relational View, promotes relational rents. Resource sharing is a process that align with combining complementary and scarce resource. Goal congruence, decision synchronization, incentive alignment, and collaborative communication are components of an effective government mechanism.

Grekova et al. (2016) studied the influence of collaboration with suppliers and customers on firm performance in Ducst Food and Beverage Processing Companies. After testing her hypotheses using 139 returned and valid questionnaires, she found that SCC has a positive impact on cost saving, leading the firms to gain better profit. Um and Kim (2019) studied the effect of SCC on firm performance and transaction cost advantage. They run hypothesis testing using 304 returned and valid questionnaires and found that SCC has a positive effect on firm performance as well as reducing transaction cost. Cost saving and lower transaction costs are created inside an alliance and equals to relational rents in RV. Therefore we can conclude that from the RV point of view, supply chain collaboration may increase the relational rents of alliance partners.

Proposition 1: Supply chain collaboration has a positive effect on relational rent.

3.4.2 Effect of Supply Chain Collaboration on Organizational Agility

In this study we define organizational agility as the ability of a firm to respond rapidly, systematically, and efficiently through sensing, searching, seizing, shifting, and shaping, so that it can produce goods and services that match market demand, by using available resources inside the firm or by collaborative action. Supply chain collaboration increase OA through collaborative knowledge creation, as information sharing and joint knowledge creation, are part of SCC. In responding to environmental demand change as a consequence of Covid-19 pandemic, (Al-Omouh et al. 2020) found that collaborative knowledge creation positively affects OA. A firm can have a better sensing ability due to the flow of information obtained by alliance members. With clear information and insight about complementary resources owned by the alliance members, a firm can reevaluate internal conditions and find potentials to grab an opportunity, by creating a combination of internal resources and relational resource in the alliance. With decision synchronization between a firm and suppliers, a firm can also make a proper decision that considers changes in the business environment and also a combination of resources, and implement a new strategy and deliver a market-driven product. Firm and suppliers also create a goal congruency, which motivates all party to direct their effort to achieve shared goals, which will benefit every member in the alliance.

With decision synchronization, incentive alignment, and collaborative communication, a firm will increase its shifting ability and will be able to implement a

new strategy, a new business model, and strategic changes in work methods and processes. Ivanov (2020) carried out a systematic literature review about the viable supply chain in the hotel industry during Covid-19 Pandemic. He found that a viable supply chain increases firm’s ability to react flexibly in the changing environment and firm’s resiliency to face disruption. Therefore we can conclude that from the RV point of view, supply chain collaboration may increase the organizational agility of alliance partners.

Proposition 2: Supply chain collaboration has a positive effect on organizational agility.

3.4.3 Effect of Organizational Agility on Relational Rents

A firm that has an ability to sense and respond efficiently, properly, and rapidly to the changing environment will enjoy business continuity as well as cost reduction, compared to other firms that do not have such ability. An agile organization has an extraordinary abilities, namely: sensing, searching, seizing, shifting, and shaping. This might be seen in improved work process and methods, a combination of internal and relational resources, increase in product differentiation, lower downtime and defect product, and faster time to produce goods and services. Yang and Liu (2012) found that organizational agility has a positive impact on firm performance, which is measured by cost efficiency and quality improvement. The agile capability will result in lower production costs. Ashrafi et al. (2019) also found that organizational agility increase firm performance which is measured by profitability and return on investment. Both researches conclude that agile firms can deal with the volatile business environment, and therefore able to lower the cost or even open a new market and increase sales revenue. Both achievements gives a maginal profit higher than other companies, so it can be said that agile company in an alliance or partnership will enjoy relational rents (Fig. 2).

Proposition 3: Organizational agility has a positive effect on relational rents.

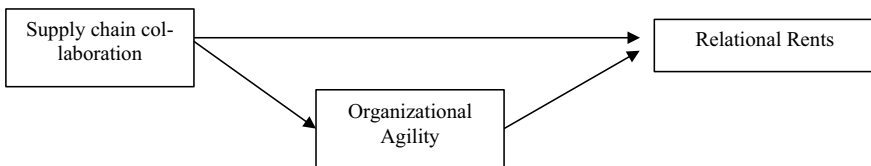


Fig. 2 Proposed research model

4 Discussion

Turbulence in a business environment is regularly faced by a company, for example: the Asian financial crisis in 1998, the subprime mortgage crisis in 2008, and the current economic crisis caused by Pandemic Covid-19. To be able to survive, a firm must adapt rapidly, efficiently, and properly. This is not easy, because, in terms of crisis, firms will only have limited resources and be unable to acquire resources freely from the secondary market. Therefore, engagement in a collaboration to utilize relational resources is a logical behavior. Naidoo (2010) examined factors that lead the textile industry in China to survive from crisis. After he tested hypotheses using 184 returned and usable questionnaires, he found that marketing innovation that is developed based on differentiation and cost leadership is an essential point. A firm must add a new production lines, and deliver some new products to the market, while still maintaining low production and transaction costs. This is not easy since an increase in product differentiation is usually followed by higher production costs. Based on longitudinal data from 97 top European service companies, (Martin-Rios and Pasamar 2018) found three clusters of strategi as a response to an economic crisis. The first cluster is companies that implement the commitment to expansion, which is shown by higher research and development expenditure, commitment to mergers and acquisition, and high employment growth. In terms of economic crisis, some companies acquire other companies to utilize their resources. These companies will enlarge their market network, implement new production processes, and broaden their product range so that they will be able to exploit a new opportunity.

The second cluster is companies that implement a cost-oriented strategy, which is shown by reduction in investment expenditure, layoffs, decrease in research and development budget, and no involvement in merger and acquisition. The third cluster is companies that implement resource balancing strategy. These companies have the ambidextrous ability that allows them to carry out business expansions as well as cost efficiency. They are able to manage the tension that appears between cost-control and new opportunity exploitation. The tension that is felt by executives in the company caused by choosing a contradictory solution is counterproductive (Gnyawali et al. 2016; Putnam et al. 2016), and (Hargrave and Ven 2017). To lower the tension, usually company will be motivated to collaborate with suppliers. This collaboration able a company to combine resources and utilize other resources outside firm's boundary to achieve some goals. Unlike resource acquisition, collaboration share benefit with alliance partners.

Supply chain collaboration will improve firm performance, especially financial performance. Supply chain collaboration potentially reduces the cost of inputs, purchasing cost, waste of unused material, and raw materials availability (Grekova et al. 2016). The firm can also improve a process that leads to better utilization of production facility, and also liability cost. In the end supply chain collaboration increases marginal profit of a firm, which in alliance, is equal to relational rents. Um and Kim (2019) found that supply chain collaboration can lower transaction costs. Suppliers can potentially engage in opportunistic behavior that causes higher

transaction cost. In terms of environmental changes, maladaptation also cause higher transaction cost because there might be less efficient material distribution methods and cost of supplies monitoring. By mitigating opportunistic behavior and maladaptation, supplier collaboration can reduce transaction cost, and increase marginal profit. From a collaborative lens, this increase marginal profit that is equal to relational rent. Ashrafi et al. (2019) found that form agility positively affects performance in a volatile environment. A firm with a fast and appropriate responses to environmental change enjoy a higher performance, which is indicated by Return on Investment, overall profitability, sales growth, and market share. Higher profitability that is achieved collaboratively with suppliers is equal to relational rents, from RV lens.

Supply chain collaboration also potentially improves relational rents through promoting organizational agility. Tarafdar and Qrunfleh (2017) introduces supply chain practices that consist of strategic supplier partnership, customer relationship, and postponement. Strategic supplier partnership is a firm activity of building a long term relationship with suppliers, which from our point of view is similar to collaboration, because not only the firm enjoys benefit but also suppliers in cooperation. Supply chain practices have a positive impact on organizational agility. Supply chain visibility, which is defined as the ability of a firm to get access and information about supply chain from partners, also has a positive impact on organizational agility (Dubey et al. 2018). Ivanov (2020) found that supply chain resilience, which is defined as ability to overcome disruption and achieve the desired performance, has a positive impact on organizational agility. Collaborative supply chain provides information that help firm to sense changes in the environment, and also the capacity of suppliers. The firm will be able to create relational knowledge and make a combination of resources, which enable the firm to respond rapidly, efficiently, and properly to changes. For example, a firm can be more proactive to environmental change (Al-Omouh et al. 2020) and create preventive strategies. Another example was (Zhou et al. 2018) who found that product performance is better if the firm could reconfigure resources and utilize it to develop goods or services. Therefore, many literatures have already concluded that supply chain collaboration can increase organizational agility.

When a firm can properly react to changes in business demand, then it will enjoy a superior sales quantity as well as better profit that is caused by cost reduction. The ability to sense and respond rapidly, properly, and efficiently is one of an agile organization's character (Singh et al. 2013). Superior sales quantity and increase on profitability are enjoyed by an alliance and can be considered as relational rent, because it will not be achieved by the firm individually. From our description above, it is clear that theoretically supply chain collaboration can improve relational rent directly, or through the development of organizational agility.

5 Conclusion

Organizational agility is one of many topics that interested researchers in the last 5 years. Most of the research are revealing the supply chain as an agility driver.

In this research, we studied several scientific articles and found that supply chain collaboration is an agility driver. Using relational view as a theoretical lens, we found that supply chain collaboration potentially increases relational rent. Besides that, utilization of relational resource in a collaboration with suppliers will also increase the firm's ability to sense and respond rapidly, properly, and efficiently to environmental changes. Nowadays it is relevant to carry out research in a turbulent environment. Firms faced economic crisis almost every 10 years since 1998, and today we are battling an economic crisis that is caused by pandemic Covid-19. That is why in this article we include organizational agility as one of the factors that potentially increase relational rent.

This article has two limitations. First, this research methodology used is literature review, and we proposed three propositions. These propositions are still needs to be clarified using quantitative methods. Second, we did not explore the effect of investment in relation to specific asset, because it does not intersect with dimensions of supply chain collaborations. It is necessary to improve our proposed model by including investment in relation to specific assets as one of the variable.

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Trust Reputation in Blockchain Environment: A Review



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Abstract Creating trust in online environments for users is the main goal of reputation systems. With the effort put into creating an efficient system there are some aspects that need to be further discussed. The aspects involved are the authenticity of the ratings, storage and the costly calculation methods. Blockchain offers potential in solving some of these issues and others due to its decentralized and immutable nature. The aim of this paper is to look into reputation systems and what benefits blockchain can offer and challenges that it could create.

Keywords Trust · Reputation · Blockchain

1 Introduction

The Internet has emerged into many aspects of modern life. It offers many services that cover different aspects such as e-commerce and social networking. And with all services provided on the internet comes uncertainty and risk of falling prey to hazards online such as viruses and trojan horse infected documents (Abdai-Rahman and Hailes 1998). One way to alleviate these risks is by developing strategies to establish trust and build systems to allow the users to provide the level of trust they should place on e-commerce transactions (Battah et al. 2021). Reputation systems is an example of a system that assists the users to form trust on the quality and

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reliability of the transaction based on the community's past experience (Xiong and Liu 2004). As most of the interactions done on the web are between peers who do not know each other in real life, therefore establishing a subjective trust is keen in order to perform any transaction. According to Jøsang et al. (2007) trust is defined as "subjective probability by which an individual A expects that another individual B performs a given action on which its welfare depends". With all the effort put into establishing reputation systems to solve the trust issues occurring online, there are still some difficulties that need to be addressed. Among these difficulties are behavioral evidence collection and storage (Battah et al. 2021). Blockchain technology is a promising field that could support solving these challenges due to its immutable and decentralized nature. In this paper we are going to discuss existing reputation systems and focus more on the blockchain based reputation system application and how it can solve the existing challenges faced by reputation systems.

2 Reputation Systems

Reputation systems are systems that aim to produce a reputation score for a provider peer by using methods that collect and aggregate user's feedback about an individual or an object (Abdel-Hafez 2016). These systems are used to aid users in the decision making process of choosing the best provider peer and protect the provider peers from malicious ratings. The methods used to compute the trust score of users varies depending on the factors chosen by the creators. Some reputation systems include the reliability of the feedback source in order to obtain the final reputation score. Reliability according to Abdel-Hafez (2016) is defined as how close the rating by the user to the average rating by all users is. RateWeb system by Malik and Bouguettaya (2008) is one example of a system that uses the reliability and takes into consideration the possibility that a rater may provide a rating that is far from the majority rating without malicious intention by modifying their method to include the consistency of the rater. The systems that use trust as a factor are called trust-based reputation systems. Trust-based reputation systems according to Jøsang (1997) "employ trust scores for individuals, to aggregate a global user trust score, which can be used as a weight in the ratings aggregation process". PeerTrust by Xiong and Liu (2004) is an example of trust-based reputation systems. PeerTrust's reputation score is calculated using five factors. The feedback a peer receives from other peers, the feedback scope, the credibility of the feedback source, transaction context and community context (Ronghua et al. 2018). The system uses these factors to create four different algorithms to compute the reputation score (Malik et al. 2019). TRUE-REPUTATION framework by Oh et al. (2015) evaluates the trustworthiness of the ratings (confidence) in $x + y = z$ order to compute the reputation of the provider peer. The confidence of the rating is based on three factors: activity, objectivity and consistency. The evaluation of confidence and the computation of reputation are done iteratively.

3 Blockchain Based Reputation System

3.1 Blockchain

Blockchain is a distributed system that deploys on the network for the public to see which provides integrity and transparency in data. Although blockchain has contributed to many industries due to its characteristic in being a reliable distributed system, it does not solve the trust problem associated with input data and human relations. It carries a distinctive value that helps build trust between user and the system for its forging mechanism of Proof-of-Work (PoW) that provides a finalized statement of a successful transaction which means that any interaction that has been agreed on between two entities has been concluded and written in the blockchain. From technical point of view, Blockchain is a distributed database that exists on a P2P network (Fig. 1) (Almasoud et al. 2020). This P2P network is a backbone of the system because every node in the network is on the same level as all the other nodes. Although nodes can come in many forms, there is no central node that is an authority. Every node stores a local copy of the Blockchain. If consensus of nodes agrees upon transaction's validity, then the transaction is considered valid (Almasoud et al. 2020).

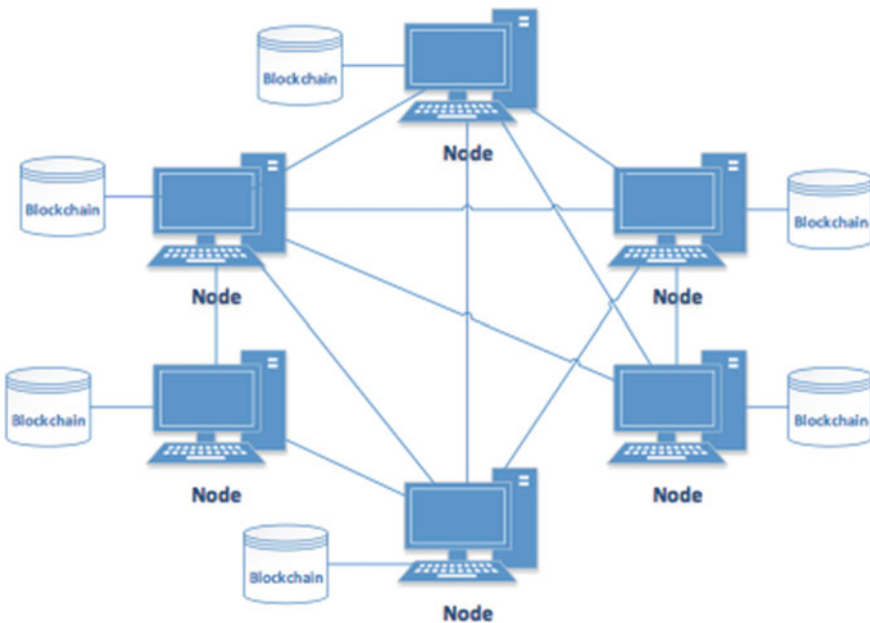


Fig. 1 P2P blockchain nodes (Almasoud et al. 2020)

3.2 *Blockchain-Based Reputation System*

The immutable and decentralized nature of blockchain makes it a suitable framework to apply the reputation systems and deal with the challenges presented in non-blockchain based reputation systems. FarMed is a smart contract based reputation system framework that is driven by service-oriented computing (Almasoud et al. 2020). FredMed is implemented using a two layers framework. The first layer contains the smart contracts that store all the reputation values of all users on the network. The second layer is the AI layer which calculates the analysis of the information presented on the smart contracts. The system aim is to meet five requirements which focus on the three time frame of applying the smart contract, before, during, and after executing the smart contract. 1) The ability to derive the reputation value for the provider peer from the values on the smart contract. 2) The ability to determine the trust value of a provider peer in a context. 3) The ability to treat the trust value as a digital asset that can be moved across different platforms. 4) The ability to detect malicious behavior. 5) The ability to include mathematical models and algorithms.

4 **Application Scenarios and Research Challenges**

The problem that has not been discussed is the authenticity of the data being exchanged and whether the immutability of data can incentivize future studies. The BLESS system, also known as Blockchain-Enabled Social Credit System, runs most of the calculations and transactions in the blockchain via a smart contract. The enabled credit rating for this system practices benefit those with a substantial amount of credit rating, which the certified credit rating entities will do. Like any other trust management system, they adopted the reward and punishment strategy for those who act accordingly in the evaluation. This will drive the system user to promote more honest feedback and give them the voice to speak out on injustice as one of the purposes of this strategy is to promote value and dignity in any jobs they can provide for the community. The paper, however, failed to mention how the credit rating system will be evaluated statistically (Ronghua et al. 2018). Adopting this strategy in the system is to say that the authorize role or the admin has been given the context of what is bad behaviour to categorize someone for credit reduction and what is a good behaviour that the system should reward. As there will be an investigation done on the claims of either behaviour, the guideline to act as an individual is based on a community perspective and in relation to the public affair (Malik et al. 2019).

4.1 Suggestion for Improvement for the Usage of Blockchain in the Reputation System

The main goal of applying blockchain in a system is to ensure that the data provided do not need any verification of its truthfulness. The challenge that will be faced is that: a) most services or products can be in bulk, so the receiving peer should be instructed to do an individual assessment of each item b) For a system to assess the login data before it is distributed in the blockchain to enhance the integrity of the information provided c) Increase accountability and responsibility of peer to ensure accurate data provided.

Trust as a form of statistics can be manipulated to improve the services and reputation of an individual. The problem is how can we use *trust* as a mechanism to verify a peer's integrity and reputation. With a strong foundation, *trust* can be formed explicitly between two entities if the underlying reason of the trust is understood in the context of a system or an environment. Overall, understanding the intention and purpose of an entity to trust can be unstable if the objective is to gain only individual benefit. That could impact the overall trust rating over time as trust is a human characteristic that changes. Therefore, we have to establish what is the principle of *trust* to apply for each distributed system because *trust* weighs heavily on the perception of that certain community.

For hundreds of years, humans tend to be unpredictable in their actions and thoughts as we change to adapt and survive. It will be hard to understand ourselves completely but with new rising technology, predicting human behaviour has been made much easier. The goal of creating a trust rating system is to honour nobility and honesty in feedback. But what happens if that is threatened with malicious intent? Offence is the new defense so our main goal should be to analyze what are the possible malicious threats a peer can do and imply that can jeopardize the other peer's reputation. By predicting, we set predetermined rules and validated methods in the smart contract that can detect hostile claims made from any peer before processing it to a reputation score (Almasoud et al. 2020). This is where machine language (ML) comes in handy in categorizing fraud behaviour via incomplete profile details of a peer, inaptitude to bootstrap newcomers or even the ability to factor a valid certificate which is proof that the peer is part of the network. To achieve non-compliant behaviour is to always update the and review the smart contract using plugins like Metamask.

In Trustchain, the focus is referring to the roles of the peer in an environment before evaluating trust value by observing their status, role and contribution in that environment to observe whether the data in different levels of authority is relevant to the trust value accumulated (Malik et al. 2019). The Trustchain is divided into three layers and each layer requires input from peer or system to further evaluate the reputation score which adapts hand-in-hand with the supply chain events given a certain weightage of recent and older events resulting in an overall reputation score to evolve in time. The general trust parameter is when the trader reaches below the minimum amount of trust score, as provided in the system, and gets eliminated

from the network. Though a trader's reputation can mature in a certain period, this approach can further make any peer in the network understand the trust between peers in the system and how they need each other to complement a successful event in trading.

After observing many reputation systems, we have come up with a few solutions to address the problem above. Considering how costly some calculations in a reputation system can be, it is essential to find a function suitable with the pre-defined conditions for the smart contract as there are limitations to implying smart contracts for different purposes. Another problem to consider is how smart contracts are expected to give deterministic results in calculating trust reputation. Therefore, the result representation should consider that smart contracts use the IEEE 754 standard, equating to inaccurate representation impact. For example, if 53×5 should result in 1.666; the result here is 5. The solution can be expensive and limited, but the founder of the Ethereum, Vitalik, provides Taylor Series to approximate a logarithmic function when dealing with smart contracts (Battah et al. 2021).

Time management in the context of smart contracts plays an important role in calculating the reputation system using a common method called decaying. A method to evaluate the trust value of a user by comparing the weight of recent feedback received with older feedback while still relying on the timestamp, an embedded property in a blockchain. Furthermore, the proposed method which uses publicly available dataset of Amazon product review, successfully maintains the original reputation value of a blockchain by using less than 50 feedbacks where the augmentation has a margin error that is lower than 1% of calculated feedback. This shows that the method works seamlessly with existing contracts and can be of interest to all contract-based blockchains (Battah et al. 2021).

A computation concern in applying blockchain in a reputation system is to accommodate the interactions from reputation system to the network. We suggest that designing the architecture should be optimized with the functionality of smart contracts in the system (Battah et al. 2021). It is detrimental for us to remember that the Peer-to-Peer (P2P) mechanism in a blockchain where each local node has to interact, gain consensus amongst each other and provide PoW will inquire more data and create the need for more space and real-time output. For efficiency, it is only logical that we separate where we store data whether it is on-chain or off-chain. Understanding how to apply smart contracts in the system and focusing on deterministic results as we acknowledge that trust data is the main form of data.

A smart contract is a type of digital contract that can store and display reputation status. This is done through the use of Oracles. Oracles are external services that provide the needed information to a smart contract. To implement oracles, we must authenticate data and the status from the point it is out of the blockchain to the moment it re-enters, maybe by stamping a signed message with the results for proof of integrity (Malik et al. 2019). The oracles can be managed by an independent smart contract whose job is to handle oracles. Besides, implying a decentralized storage system like Swarm or Inter-Planetary.

5 Conclusion

In this paper, we have introduced how blockchain can be implied in a reputation system and the different types of reputation systems that have been practiced for different purposes that range from a supply chain network to a mobile application. This systematic literature review provides the struggles of using blockchain in a reputation system and how we plan to solve the problem. The implementation of blockchain has yet to be realized as it was just discovered in 2008 and the potential it brings is part of the digital age evolution. The smart contract is a valuable asset for any system that needs to communicate with blockchain and can be structured and legalized to best suit any system. Reputation exists as a catalog to others who need the service they offer and we believe that protecting the integrity and craftsmanship with the service they offer should mobilize interactions between user and system besides understanding that there are still room to improve our advances in detecting malicious intent that could jeopardize the trust system.

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Tourism, Hospitality and Health Care Services: the Role of Technology

Re-interpreting ‘Luxury Hospitality’ Through Experienscape, Customer Satisfaction, and Customer Well-being



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Abstract Since customers are the ultimate perceivers or definers of their experiences, so they may carry different meanings and interpretations of ‘luxury’. Some may perceive ‘luxury’ when the state of satisfaction or delight is achieved, whereas for others, ‘luxury’ may be experienced when one feels an enhancement in his/her well-being resulting from a service experience. However, service providers nowadays are also trying to enhance customer well-being which is considered something beyond customer satisfaction as per contemporary service literature. Therefore, this research aims to re-interpret luxury hospitality from the experienscape perspective to predict perceived well-being (a human-centric outcome) through customer satisfaction (a behavioral affective reaction) in the context of Malaysian beach resort hotels. Using a questionnaire as a research instrument, data was collected from beach resort hotel guests who stayed at any one of the fifteen 5-star and 4-star beach resort hotels located in Langkawi, Malaysia. A total of 306 responses were obtained from the beach resort hotel guests, using a convenience and snowball sampling approach. A significant and positive effect of functional, natural, and cultural experienscape on customer satisfaction was found, while sensory and social experienscape had a non-significant impact on customer satisfaction. Also, there was a significant and positive effect of social and natural experienscape on perceived well-being, while sensory, functional, and cultural experienscape had a non-significant effect on perceived well-being. Moreover, there was a significant impact of customer satisfaction on perceived well-being and customer satisfaction also mediates the relationship between experienscape components and perceived well-being. Our findings are theoretically meaningful as it is the first empirical research that translated ‘luxury’ through the interaction between experienscape and perceived well-being through the mediation of customer satisfaction in the context of beach resort hotels.

Keywords Luxury · Customer experience · Customer satisfaction · Customer well-being · Beach resorts · Hospitality industry

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1 Introduction

According to the World Travel and Tourism Council (WTTC), travel and tourism are among the world's largest economic sectors, generating 10.3% of the global GDP. In 2019, the travel and tourism industry witnessed a 3.5% growth rate, outperforming the global economic growth rate of 2.5% (Travel & Tourism: Economic Impact Report 2020). In recent years, South East Asian countries also have experienced significant growth in the tourism industry, and Malaysia is one of them (Hirschmann 2020). Malaysia is one of the top destinations in Asia and the Pacific region (UNWTO/GTERC Asia Tourism Trends 2019). As of 2018, Tourism stood as the third biggest contributor to Malaysia's GDP, with a contribution of 15.9% to the country's GDP and recorded a total of 113.5 Million inbound and domestic tourists (Uzir Mahidin 2020). To cater to the accommodation needs of these tourists, Malaysia has a well-established hospitality industry comprising of various types of hotels offering a variety of services, since accommodation is the most consumed product by the tourists with a consumption rate of 92.6% (Uzir Mahidin 2020).

Over the years, the trend of providing a 'luxurious travel experience' has emerged where various renowned hotel groups built state-of-the-art hotels which were difficult to imitate by the industry rivals. However, there is no absolute definition for a 'luxury hotel', but still, one of the main characteristics of luxury consumption is the experience it creates for its' guests (Gil-Lafuente et al. 2014). Luxury could be when the customer gets the experience exactly what he wants at the exact time and in the manner, sometimes before even he starts consuming service. No matter if the hotel is old or new, small or big, a traditional or a contemporary design, what matters is creating a 'luxurious or magical experience' or meaningful experience. A 'luxurious experience' creates and offers an authentic, personalized, and exceptional service. Some researchers consider that luxury experience is a subjective term that creates different meanings in different contexts (Gil-Lafuente et al. 2014). In our case, it is to be interpreted by the customers who ultimately are the 'luxury clients' and tend to define or perceive experiences.

Generating memorable customer experiences is one way to stand out in the market, especially in the tourism industry. Hence, considerable attention was paid in the past studying customers' experience where factors such as Servicescape, Sportscape, Cyberscape, Winescape, Dinescape, Shipscape play a dominant role in creating a luxury experience. Even though marketing-focused research provided a solid theoretical base for understanding the nature of Servicescape but it included elements related to physical structure and aesthetics only and did not cater to the social, natural, and cultural components of a service setting. With the onset of service-dominant logic, experience-based consumption, and consumer co-creation concepts, the customer must conceptualize Servicescape. Thus, a comprehensive understanding of the *Experienscape* concept is imperative particularly in the context of luxury hospitality.

The Experienscape is a multi-dimensional concept that comprises sensory, functional, social, natural, and cultural components (Pizam and Tasci 2019). In the

luxury hospitality context, a holistic Experienscape designed with a human-centric approach may result in different affective behavioral reactions (customer satisfaction/dissatisfaction) to various elements of an Experienscape, and thus varying outcomes for consumers (perceived well-being). Despite the potential impact of customers' luxury experience on their life, there are limited studies to understand its mechanism in the luxury service setting. Therefore, we proposed to study luxury hospitality from Experienscape perspective to predict customer satisfaction and perceived well-being. The case in point for the empirical investigation of the proposed concepts is Malaysian beach resort hotels. The resort hotels are usually classified as luxurious which creates high involvement when customers consume the service (Channoi et al. 2018). In Malaysia, there are around 20% resort hotels (207 resort hotels out of 1048 hotels), out of which beach resorts are approximately 54% (111 beach resort hotels out of 207 resort hotels), making them prominently dominant (Membership Directory, Malaysian Association of Hotels 2020). Since various affective responses (customer satisfaction/dissatisfaction) to different elements of Experienscape can have differential influences on the human-centric outcomes (perceived well-being), thus, we aim to investigate the human-centric aspect of the Experienscape in order to re-interpret 'luxury' in the Malaysian beach resort hotels.

2 Literature Review and Hypothesis Development

2.1 *Resort Hotels*

Places like beaches, lakes, mountains are generally considered as locations with substantial potential for tourism. Resort hotels are usually established at such locations as full-service lodging facilities that provide a leisure experience, full-service accommodation services, develop leisure experience, and offer several recreation facilities and amenities. Since resort hotels provide all general public facilities along with a specialized surrounding area for carrying out tourism activities (Luturlean et al. 2018), therefore, they are considered to be the primary creator of guests' experiences in vacation-oriented locations (Brey 2011).

Resort hotels possess the characteristic of offering a multitude of services. These services, along with leisure and recreation activities may include spaces for business meetings, rooms for conferences, wedding facilities, banquets, spa, and shopping avenues. The resort hotels tend to meet various needs of a wide range of customers (Ahn and Back 2018). The facilities and amenities enable guests/tourists to consume an extensive range of services and experiences, resulting in a longer stay duration as compared to other types of hotels (Park et al. 2019). Due to the impact of resort on local tourism and hospitality industry, there is increasing development in many countries including Malaysia. According to the Ministry of Tourism, Arts, and Culture Malaysia, "Premises must be classified as Resort Hotel if it is nearby the beach or

lake or river or located in a remote island.” Resort hotels are a significant component of Malaysia’s accommodation sector and makeup approximately 20% of the country’s total rated hotels and resorts registered with the Malaysian Association of Hotels (Membership Directory, Malaysian Association of Hotels 2020). According to the Malaysian Association of Hotels, there is a total of 1048 rated hotels/resorts, out of which 207 (19.75%) are classified as Resort Hotels, and 111 (53.62%) of those satisfy the criteria to use the term Beach Resorts.

2.2 *Experienscape*

The importance of the physical environment of a service setting was realized by the researchers in the 1970s and they emphasized that this plays a crucial role in the formation of brand image and ultimately in the positioning of the service in the target market. Kotler (1973) coined the term “atmospherics” which forced many marketers to move their focus towards the influence of the environment on the consumers’ buying behavior. The main focus of the atmospherics research was on the individual attributes that tend to affect buying behavior. However, in the 1990s, an umbrella term, “servicescape” was devised, which referred to the physical characteristics of an environment where consumers and employees operate and interact with each other (Bitner 1992). The idea behind servicescape is the Stimulus-Organism-Response (S-O-R) model which was developed by Mehrabian and Russell (1974), according to which consumers are considered to be influenced by the environment. But with the advent of more contemporary views, like service-dominant logic, consumer co-creation, and experiential consumption, researchers have emphasized the need for the conceptualization of servicescape based on a more vigorous role of consumer. There is a need for an experiential approach to gain an understanding of the holistic meaning of servicescape for the consumers. The umbrella of consumer experience covers everything that a consumer feels, senses, and experiences in a particular service setting.

Although extensive research has been conducted on servicescape, its structure has not been meticulously well-defined in the existing body of knowledge. The components related to the physical structure and ambiance and the overall functionality of the service received attention at large, but, at the same time, the ignorance of cultural and natural components has been observed so far. Therefore, another stem of researcher came up with the term Experienscape (Pizam and Tasci 2019) and defined it as “the sensory, functional, social, natural, and cultural stimuli in a product or service environment, surmounted with a culture of hospitality, all of which accrue to an experience for different stakeholders and result in positive or negative cognitive, affective, and behavioral reactions toward products, services, brands, and firms.”

Conducting empirical studies on the experienscape concept would help in its better operationalization and also this will aid an in-depth understanding of the nature of diverse service environments (Pizam and Tasci 2019). Furthermore, considering the experienscape concept, attention should be paid to more human-centric outcomes

which may include consumers' life transformation or elevating their well-being and subjective happiness, which were previously totally overlooked in servicescape literature (Tasci and Pizam 2020).

2.3 Customer Satisfaction

Every company wants to bring some long-term benefits to the firm like loyal customers, positive word-of-mouth, profitable and sustainable business, so on and so forth. Undoubtedly, one of the basic ways to achieve such goals is to satisfy customers by fulfilling their needs and wants. Customer Satisfaction is usually conceptualized as the collective evaluation of the product's features and their performance as compared to customer's expectation. If the product's attributes and their performance meet or exceed the customer's expectation then it leads to satisfaction, otherwise, if it falls less to the expectation then customer dissatisfaction can occur (Han et al. 2020). According to a study, various hotel attributes with different star ratings could affect customer satisfaction (Li et al. 2020). Furthermore, hoteliers owning different kinds of hotels are expected to improve their service design to enhance customer satisfaction and at the same time reduce customer dissatisfaction (Xu and Li 2016). Moreover, Servicescape components were found to have a noteworthy impact on customer satisfaction in the context of the hotel industry (Artuğer 2020).

2.4 Perceived Well-being

The service logic theory states that "value creation entails a process that increases the customer's well-being, such that the user becomes better off in some respect" (Gong et al. 2016). According to research findings, a positive customer experience enhances customer satisfaction which further leads to customer service well-being (Roy et al. 2017). Service providers today are advised to focus on consumer well-being rather than just creating customer satisfaction because customers tend to choose those companies for themselves which represent their values; hence, such type of organizations are considered as change-makers in the society. Therefore, there is a high need to assess consumer well-being in specific service situations and that should represent various service industries.

In consumer behavior and tourism studies, well-being perception is an extremely crucial concept. It is about a consumer's perception of a product as to what extent that product has contributed towards the improvement of his perceived quality of life. Since tourists often look for relaxation and happiness during their travel experience, therefore, customers' well-being perception is specifically impactful in the tourism and hospitality industry (Han et al. 2020). A study revealed that usage of self-service technologies by tourists along with their interactions with service employees led to their enhanced well-being perception (Oh et al. 2013), thus a good travel experience

and well-being could ultimately lead to customer loyalty (Huang et al. 2019). Past researchers found that customer experience could lead to a high level of satisfaction and well-being, specifically in the tourism and hospitality industry (Kim et al. 2016; Joseph Sirgy 2019). Moreover, it was found that in luxury resort hotel settings, both inside and outside physical environments tend to increase the customers' well-being (Han et al. 2019).

2.5 The Conceptual Research Model

The proposed idea of predicting perceived well-being from the Experienscape concept in luxury hospitality is based on the prior conceptualization of Experienscape (Pizam and Tasci 2019). Based on the Stimulus-Organism-Response (S-O-R) Model (Mehrabian and Russell 1974), the sensory, functional, social, natural, and cultural components of the Experienscape concept, serve as stimuli and trigger an overall experience for the customer which may lead to cognitive, affective or conative reactions and ultimately may result in some human-centric consumer outcomes.

Further, the nature of luxury in hospitality services is still very vague and complex considering various definitions and explanations given to it in different contexts. Therefore, the researchers have proposed a conceptual research model (Fig. 1) to re-interpret luxury hospitality based on tourists'/guests' experiences in Malaysian beach resort hotels. The Experienscape (stimuli), customer satisfaction (affective response), and perceived well-being (consumer outcome) are the three constructs that have been integrated with relevant models to propose the conceptual research model for this study.

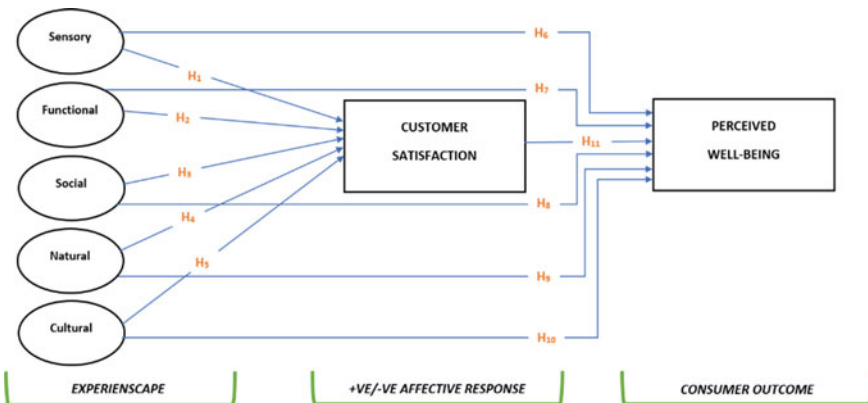


Fig. 1 The conceptual research model

3 Hypotheses Development

3.1 *Sensory Experienscape and Customer Satisfaction*

Aesthetics and ambiance are the elements that compose the sensory attributes of a service setting, hence referred to as the sensory component of the Experienscape (Pizam and Tasci 2019). The consumption patterns of customers and their emotions and perceptions associated with it are significantly predicted by the physical outlook of the Experienscape which can resultantly influence customer satisfaction (Ali et al. 2016). It is also evident from the research that when hoteliers use sensory marketing techniques, then they tend to have more content or satisfied customers than otherwise (Satti et al. 2019) leading further to revisit intentions (Kim et al. 2020). Based on this, we hypothesize that:

H₁: Sensory Experienscape positively influences Customer Satisfaction.

3.2 *Functional Experienscape and Customer Satisfaction*

The arrangement, size, and shape of furniture and fixtures, signs and symbols, and similar objects in a service environment are contained within the spatial functionality and layout (Pizam and Tasci 2019). A study found that the use of artificial intelligence for delivering functional experiences could enhance customer satisfaction (Prentice and Nguyen 2020). Also, the functional component of the hotel servicescape was found to carry a substantial effect on the satisfaction of the customer (Ibrahim et al. 2018; Lockwood and Pyun 2020; Prebensen and Rosengren 2016). Therefore, we posit that:

H₂: Functional Experienscape positively influences Customer Satisfaction.

3.3 *Social Experienscape and Customer Satisfaction*

The operationalization of social experienscape has been carried out in diverse arrangements which included, appropriate behavior, physical appearance, and social exchanges amongst and between service employees and consumers (Pizam and Tasci 2019). Employee proficiency along with lodging setup has been considered as the two most important factors that could predict customers' satisfaction with the hotels (Nunkoo et al. 2020). Further, the dyadic interaction between employees and customers could serve as a basis for customer satisfaction (Mat Yusof et al. 2020). Moreover, social experiences in hotels resulted in the emergence of some positive emotions in the tourists which consequently defined their satisfaction levels (Io 2017; Liu et al. 2020; Tran et al. 2020). Therefore, we hypothesize that:

H₃: Social Experienscape positively influences Customer Satisfaction.

3.4 Natural Experienscape and Customer Satisfaction

Despite the integral connection of nature to many experience settings, and its specific importance in destination contexts, which include towns, cities, resorts, etc.; its presence and vitality in servicescape has not attained sufficient empirical consideration as it should have. The leisure services help in recovering from many kinds of work/life stress. These favorable outcomes from a leisure experience can be further strengthened by adding the calming and comforting effect of the natural components in a service setting (Pizam and Tasci 2019).

The presence of natural attributes in a service environment has been considered as an essential and a “basic” part, rather than just a competitive edge (Robinot and Giannelloni 2010). Similarly, it was found that nature-based experiences pose a positive outcome on the satisfaction of the customer (Brochado and Pereira 2017). It has also been studied that wellness attributes (which include maintaining the natural environment as well) employed by hotels have a significant impact on customer satisfaction (Park et al. 2020). Therefore, we posit that:

H₄: Natural Experienscape positively influences Customer Satisfaction.

3.5 Cultural Experienscape and Customer Satisfaction

Based on the “social identity theory” (Hogg et al. 1995), different stakeholders may be positively inclined towards spaces that are similar to their socio-cultural identity and which depict familiar artifacts and signs. Therefore, there is a high need to treat the “culture” as a unique and an essential element in future research, considering its noteworthy influence on diverse service experiences (Pizam and Tasci 2019).

Past literature depicts the vitality of the cultural aspect and a positive relationship between customer satisfaction and culturally-customized hotel services and offers (Fong et al. 2019). Also, there is a need to train service employees and acquaint them with diverse cultural diversity and orientation among the customers (Kiunga et al. 2019). Furthermore, hoteliers must understand that the customers’ cultural orientation and motivation play a vital role in creating an emotional bond between customers’ perceived value and the image of the hotel (Zhang et al. 2020). Moreover, hotels that are culturally creative have been observed to carry a substantial impact on the satisfaction level of the customers (Chen 2017). Therefore, we hypothesize that:

H₅: Cultural Experienscape positively influences Customer Satisfaction.

3.6 Sensory Experienscape and Perceived Well-being

According to prior research, the emotional well-being of the customers is provoked by both the inside and outside physical environment of a service setting (Han et al.

2019). One study's results also showed that aesthetics posit a significant impact on well-being perception (Hwang and (Jay) Lee 2019). Past literature also says that the sensory component of hotel servicescape significantly affects customers' well-being (Lockwood and Pyun 2019; Meng and Choi 2017). Also, customers' well-being is substantially affected by the atmospherics and service performance of the hotels which could further lead to customers' favorable re-visit intentions (Lin and Chang 2020). Therefore, we hypothesize that:

H₆: Sensory Experienscape positively influences Perceived Well-being.

3.7 Functional Experienscape and Perceived Well-being

Functional Experienscape is imperative in enhancing the perceived well-being of tourists. Few studies found that a sound service design of a hotel enhances the well-being of customers which helps them to positively evaluate the hotel brand ((Ally) Lee 2020; Tuzovic et al. 2021). Overall, some research findings elaborate that the various components of servicescape (the functional component in our case) influence the satisfaction and well-being of customers (Meng and Choi 2017). Therefore, we posit that:

H₇: Functional Experienscape positively influences Perceived Well-being.

3.8 Social Experienscape and Perceived Well-being

Past literature argues that the social relationship between employees and customers must be considered when carrying out research. The findings contest that as compared to the on-the-spot experience of tourists, their memorable experience is more valuable (Zatori and Beardsley 2017). Since, social interactions carry a chance to create social bonds (Geiger et al. 2018) therefore, it may lead to enhanced well-being of customers. In another study, researchers found that social interactions have the potential to enhance the well-being of customers, and also customers may feel more attached to the hotel brand (Rosenbaum et al. 2020). Therefore, we hypothesize that:

H₈: Social Experienscape positively influences Perceived Well-being.

3.9 Natural Experienscape and Perceived Well-being

Natural experienscape has proved to be beneficial for the psychological and physical health of individuals as it may result in the reduction of stress, improvement of emotions, and a positive increase in well-being perception (Han et al. 2020). The presence of green elements and décor both inside and outside the building are important for sustainability (Han et al. 2020). Likewise, in the hotel context, employees' and

customers' health and well-being can be improved by establishing a green physical environment (Han et al. 2019, 2020).

It is the responsibility of the service organizations to focus on such architectural design which may help in promoting the well-being of customers and also their attachment with the place (Rosenbaum et al. 2020). Based on a quantitative approach, some research findings revealed that the eco-friendly design of hotels significantly enhances the reputation of the service and also the subjective well-being of customers (Balaji et al. 2019; Han et al. 2019, 2020). Therefore, we posit that:

H₉: Natural Experienscape positively influences Perceived Well-being.

3.10 Cultural Experienscape and Perceived Well-being

In the past literature, a positive relationship has been witnessed between customers' cultural attachment and their well-being. The hoteliers need to make their employees accustomed to diverse cultures to better serve their hotel guests, since sharing common cultural orientation may strengthen the bond between the customers and the hotel brand (Kiunga et al. 2019). Furthermore, the customers would feel more familiar with the service setting in which cultural components have been incorporated, resulting in enhanced well-being of customers. Moreover, culturally inspired hotels are seen to have a positive impact on customer well-being (Chen 2017). Therefore, we hypothesize that:

H₁₀: Cultural Experienscape positively influences Perceived Well-being.

3.11 Customer Satisfaction and Perceived Well-being

It has been observed that service experience in the hotel context usually results in hedonic consumption. In a study, it was found that customer satisfaction with a service has a prominent impact on memorability (Li et al. 2021), thus leading to enhanced perceived well-being. Also, social interactions with other customers and employees in a service setting carry a significant effect on the satisfaction and social well-being of customers (Altinay et al. 2019). Furthermore, few authors emphasized that there are specific brand experiences that play an essential role in transforming the satisfaction of customers into their well-being (Ahn et al. 2019). Moreover, the level of service quality that is experienced by the customers has a direct effect on customer satisfaction which may result in customer happiness (which is hedonic well-being) (Gong and Yi 2018). Therefore, we hypothesize that:

H₁₁: Customer Satisfaction positively influences Perceived Well-being.

4 Research Design and Methodology

4.1 Measures and Questionnaire Development

The survey questionnaire was adapted from previous literature. Experienscape items (33) were adapted from prior researchers (Pizam and Tasci 2019), Customer Satisfaction (4) items adapted from Tasci and Pizam (2020), and Perceived Well-being (5) items adapted from Han et al. (2020). The questionnaire was anchored on Seven-point Likert Scale ranging from Strongly Disagree (1) to Strongly Agree (7).

4.2 Data Collection Destination

We targeted Langkawi destination for this study as Langkawi Island is one of the top tourist destinations in Malaysia that has the highest number of beach resort hotels. Some of the key facts that directed us to choose Langkawi are: (1) The highest number of beach resort hotels in Malaysia are located in Langkawi which approximately makes 19% (21 out of 111) of the total beach resort hotels; (2) Langkawi was awarded World Geopark status by UNESCO in 2007, which made it the first tourist destination in South East Asia to receive this title and gives it a competitive edge over other islands in the region by attracting more tourists, nature enthusiasts, and scientists; (3) There is Langkawi International Airport which welcomes around 230 flights per week and consequently 3.92 Million tourist arrivals were recorded in the year 2019; and (4) Langkawi was in the list of world's 10 best ecotourism islands and destinations, elected as "Traveller's Choice" for three consecutive years by TripAdvisor, and declared by Google as one of the most searched locations (Membership Directory, Malaysian Association of Hotels 2020; Ibrahim et al. 2021; Langkawi Development Authority (LADA) 2020; ; ; Naturally Langkawi: Tourism, Malaysia 2017). Due to the increase in tourism arrivals with each passing year, significant economic growth has also been seen in the accommodation and restaurant businesses in Langkawi.

4.3 Data Collection and Analysis

The target population for this study was the tourists/guests who had stayed at least once within the past three years in any one of the fifteen (15) 5-star and 4-star rated beach resorts hotels located in Langkawi, Malaysia. The rationale for targeting such hotels was that the 5-star and 4-star rating hotels usually designate themselves as providing luxury hotel services (Liu et al. 2017). According to the Tourism Industry Licensing System, established by the Malaysian Ministry of Tourism, Arts, and Culture, there are different criteria for hotel rating system with varying weights

which include: qualitative and aesthetic requirement (10%), common areas (20%), bedroom requirement (20%), services (25%), safety standard and hygiene (10%), staff (15%). Based on these criteria, the minimum requirement for hotels to get a 5-star rating is to score 90–100%, and for 4-star hotels, they need to score 70–80%.

For data collection purpose, both hardcopy (print-outs) and softcopy (using Google Forms) of the survey questionnaire was prepared. We targeted approximately 400 tourists/guests using convenience and snowball sampling technique. The data was collected physically from the guests who were present at the resort hotels in Langkawi, Malaysia. At the same time, we also asked them to disseminate the softcopy of the questionnaire in their social circle if they know anyone from their friends/family/colleagues who also have experienced the services of the resort hotels in Langkawi. Since there were fluctuating movement control orders by the Malaysian government due to the Covid-19 pandemic thus, the data was collected over four months (September 2020 to December 2020). During this period, Malaysia was under the Recovery Movement Control Order (RMCO) as per which travel restrictions were lifted and domestic tourism was allowed. Before offering the questionnaire, two screening questions were asked to ensure the respondents qualify as our targeted sample. The first question was, “Have you ever stayed at any beach resort hotel in Langkawi, Malaysia?”. The respondents providing the answer with the ‘yes’ option were then asked “Which beach resort hotel have you stayed at within the past three years?” (the respondents had to select from the pre-defined list of 15 5-star and 4-star rating hotels located in Langkawi). The data was collected from domestic tourists only since inbound tourism was restricted for international travelers due to the Covid-19 pandemic. Out of the total distributed questionnaires (400), 306 were returned to the researchers showing a 76% response rate. The Co-Variance Based Structural Equation Modelling in AMOS 24.0 was used for data analysis.

5 Results/Findings

5.1 Respondents’ Profiles

There were 306 valid responses received in total. Out of these, 177 (58%) respondents were males and 129 (42%) were females. Furthermore, 66 (22%) respondents were aged between 18–25 years, 113 (37%) between 26–35 years, 70 (23%) between 36–45 years, and 57 (19%) were aged 45 years and above. Moreover, 88 (29%) respondents stayed at least once at a beach resort hotel, 94 (31%) stayed for 2–3 times, 50 (16%) stayed for 4–5 times, and 74 (24%) stayed for more than 5 times. Also, 74 (24%) of the respondents stayed at a beach resort hotel for 1–3 days, 106 (35%) for 4–6 days, 78 (25%) for 7–10 days, and 48 (16%) for more than 10 days. The purpose of stay for most of the respondents was vacation/recreation which makes 273 (89%) of the total respondents, while 33 (11%) stayed for business purposes. As far as the nationalities of respondents are concerned, so, 86 (28%) were Malaysian

nationals, 76 (25%) were Singaporean, 69 (23%) Indonesian, 58 (19%) Chinese, and 17 (6%) were from other nationalities.

5.2 Measurement Model Evaluation and Validity Testing

A measurement model was generated to evaluate the quality of the measure. As shown in Table 1, excellent goodness-of-fit statistics were found in the measurement model which was generated based on a maximum likelihood estimation method ($\chi^2 = 1708.861, df = 777, p < 0.005, \chi^2/df = 2.19, RMSEA = 0.063, CFI = 0.910, IFI = 0.911, TLI = 0.900$). The composite reliability of the measures was also evaluated and the calculation of reliability values is exhibited in Table 2. The minimum threshold is 0.700, where all the values, were greater than this which ranged from 0.855 to 0.940. Thus, making the internal consistency of the multi-item measures obvious. Furthermore, the values for Average Variance Extracted (AVE) were calculated. The values fell between 0.544 and 0.745, exceeding the suggested threshold of 0.500. In addition, as shown in Table 1, the AVE values were all greater than between-construct correlations (squared). Therefore, convergent and discriminant validity of the measures was also evident.

Table 1 Discriminant validity

	Sensory	Function	Social	Cultural	Natur	Cust	Perc
	Exp	Exp	Exp	Exp	Exp	Satis	WB
MSV	0.083	0.074	0.217	0.139	0.393	0.186	0.39
MaxR (H)	0.947	0.942	0.91	0.935	0.934	0.929	0.87
CR	0.945	0.94	0.908	0.935	0.931	0.921	0.86
AVE	0.633	0.722	0.663	0.704	0.692	0.745	0.54
Sensory Exp	0.796	–	–	–	–	–	–
Function Exp	0.228***	0.85	–	–	–	–	–
SocialExp	0.101	0.096	0.814	–	–	–	–
NaturExp	0.289***	–0.272***	–0.079	0.839	–	–	–
Cultural Exp	0.193**	–0.05	0.465***	0.190**	0.832	–	–
CustSatis	–0.082	0.083	–0.123*	0.373***	0.226***	0.863	–
PercWB	0.201**	–0.075	0.385***	0.357***	0.627***	0.431***	0.74

Note * = $p < 0.050$, ** = $p < 0.010$, *** = $p < 0.001$

Table 2 Convergent validity

Construct name	Item name	SFL	CR	AVE	α
Sensory Experienscape	SEXP10	0.75	0.95	0.63	0.9464
	SEXP9	0.84			
	SEXP8	0.83			
	SEXP7	0.79			
	SEXP6	0.74			
	SEXP5	0.79			
	SEXP4	0.82			
	SEXP3	0.78			
	SEXP2	0.81			
	SEXP1	0.8			
Functional Experienscape	Fexp6	0.83	0.94	0.72	0.9393
	Fexp5	0.84			
	Fexp4	0.9			
	Fexp3	0.84			
	Fexp2	0.83			
	Fexp1	0.86			
Social Experienscape	SNXP5	0.83	0.91	0.66	0.90676
	SNXP4	0.84			
	SNXP3	0.78			
	SNXP2	0.77			
	SNXP1	0.85			
Cultural Experienscape	Cultexp6	0.85	0.94	0.7	0.93466
	Cultexp5	0.83			
	Cultexp4	0.81			
	Cultexp3	0.84			
	Cultexp2	0.85			
	Cultexp1	0.86			
Natural Experienscape	Natexp6	0.82	0.93	0.69	0.93
	Natexp5	0.88			
	Natexp4	0.84			
	Natexp3	0.84			
	Natexp2	0.76			
	Natexp1	0.84			

(continued)

Table 2 (continued)

Construct name	Item name	SFL	CR	AVE	α
Customer satisfaction	Cusat4	0.91	0.92	0.75	0.91696
	Cusat3	0.9			
	Cusat2	0.78			
	Cusat1	0.86			
Perceived well-being	Percwb5	0.77	0.86	0.54	0.85049
	Percwb4	0.74			
	Percwb3	0.69			
	Percwb2	0.63			
	Percwb1	0.85			

Note SFL = Standardized Factor Loadings, CR = Construct Reliability, AVE = Average Variance Extracted, α = Cronbach Value

Table 3 Path co-efficient of the final model

Hypotheses	Estimate	S.E.	C.R.	P	Result
Sensory Exp → Customer Satisfaction	-0.298	0.06	-5.42	***	Not supported
Functional Exp → Customer Satisfaction	0.228	0.04	5.169	***	Supported
Social Exp → Customer Satisfaction	-0.209	0.06	-3.71	***	Not supported
Natural Exp → Customer Satisfaction	0.248	0.05	4.764	***	Supported
Cultural Exp → Customer Satisfaction	0.39	0.05	7.39	***	Supported
Sensory Exp → Perceived Well-being	0.079	0.05	1.652	0.1	Not supported
Functional Exp → Perceived Well-being	-0.073	0.04	-1.9	0.06	Not supported
Social Exp → Perceived Well-being	0.219	0.05	4.418	***	Supported
Natural Exp → Perceived Well-being	0.284	0.05	5.971	***	Supported
Cultural Exp → Perceived Well-being	0.064	0.05	1.325	0.19	Not supported
Customer satisfaction → Perceived Well-being	0.355	0.06	6.037	***	Supported

Note *** = $p < 0.001$, Estimate = Standardized Regression Coefficients, S.E. = Standardized Error, C.R. = Critical Ratio

5.3 Hypotheses Testing

Overall, the model included a sufficient level of prediction power for perceived well-being as it accounted for about 57.4% of the total variance in well-being. In addition, about 33.1% of the variance in customer satisfaction was explained by its antecedents. The proposed associations of the study constructs were evaluated and reported in Table 3. Firstly, hypotheses 1–5 under the construct of Experienscape were tested. As expected, Functional Experienscape (H2: $\beta = 0.228$, $p < 0.05$), Natural Experienscape (H4: $\beta = 0.248$, $p < 0.05$), and Cultural Experienscape (H5: $\beta = 0.390$, $p < 0.05$) had a positive and significant influence on Customer Satisfaction. However,

Sensory Experienscape (H1: $\beta = -0.298$, $p < 0.05$), and Social Experienscape (H3: $\beta = -0.209$, $p < 0.05$) had a significant but negative effect on Customer Satisfaction which is contradicting our expectations. Therefore, hypotheses 2, 4, and 5 were supported, while hypotheses 1 and 3 were not supported.

Secondly, hypotheses 6–10 under the construct of Experienscape were tested for their effect on Perceived Well-being. As per the assumption, Social Experienscape (H8: $\beta = 0.219$, $p < 0.05$), and Natural Experienscape (H9: $\beta = 0.284$, $p < 0.05$) had a positive and significant effect on the Perceived Well-being. However, Sensory Experienscape (H6: $\beta = 0.079$, $p < 0.05$), Functional Experienscape (H7: $\beta = -0.073$, $p < 0.05$), and Cultural Experienscape (H10: $\beta = 0.064$, $p < 0.05$) had non-significant effect on Perceived Well-being which is against our expectation. Hence, hypotheses 8 and 9 were supported, while hypotheses 6, 7, and 10 were not supported. Finally, the proposed impact of Customer Satisfaction on Perceived Well-being was assessed. The result showed that Customer Satisfaction (H11: $\beta = 0.355$, $p < 0.05$) had a positive and significant impact on Perceived Well-being. Thus, hypothesis 11 was supported.

5.4 Assessment of Mediation Effect

Concerning the analysis of the mediation effect of customer satisfaction between Experienscape and Perceived Well-being constructs, the results showed that Social Experienscape ($\beta = 0.268$, $p < 0.05$) and Natural Experienscape ($\beta = 0.386$, $p < 0.05$) had a positive and significant direct effect on Perceived Well-being. While Sensory ($\beta = 0.096$, $p < 0.05$), Functional ($\beta = -0.108$, $p < 0.05$), and Cultural ($\beta = 0.084$, $p < 0.05$) Experienscape had a non-significant direct effect on Perceived Well-being. Therefore, Customer Satisfaction partially mediates the relationship between Social and Natural Experienscape and Perceived Well-being. However, Customer Satisfaction fully mediates the relationship between Sensory, Functional, and Cultural Experienscape and Perceived Well-being. Going forward, the indirect effect of all components of Experienscape was statistically significant on Perceived Well-being which shows that mediation is occurring (Table 4).

6 Discussion

6.1 Theoretical Implications

After a thorough analysis of the results, the authors have come across some very interesting conclusions. Firstly, Sensory Experienscape has a significant but negative effect on Customer Satisfaction, while the direct effect of Sensory Experienscape on Perceived Well-being is in-significant. Also, through full mediation of customer

Table 4 Standard direct and indirect effects for the mediation model

Mediation effect	Direct effect	Indirect	Result
	(x → y)	Effect	
Sensory Exp → CustSat → PerWb	0.096 (ns)	-0.128**	Full mediation
Functional Exp → CustSat → PerWb	-0.108 (ns)	0.119**	Full mediation
Social Exp → CustSat → PerWb	0.268**	-0.9**	Partial mediation
Natural Exp → CustSat → PerWb	0.386**	0.119**	Partial mediation
Cultural Exp → CustSat → PerWb	0.084 (ns)	0.182**	Full mediation

Note Exp = Experienscape, CustSat = Customer Satisfaction, PerWb = Perceived Well-being, * = P < 0.05 (signifiant), ** = P < 0.01 (significant), ns = not significant

satisfaction, the indirect effect of Sensory Experienscape on Perceived Well-being is significant but stays negative. According to literature, most of the researches focus on positive customer responses and neglect the negative ones (Tasci and Pizam 2020). However, factors like overcrowding, noise, usage of inappropriate colors, music, or fragrances could lead to negative emotions. Since, Sensory Experienscape has a significant but negative impact on customer satisfaction and perceived well-being, so hoteliers must put efforts to convert this negative effect into a positive one.

Secondly, Functional Experienscape has a significant and positive effect on Customer Satisfaction, while the direct effect of Functional Experienscape on Perceived Well-being is negative and insignificant. But, through full mediation of customer satisfaction, the indirect effect of Functional Experienscape on Perceived Well-being turns both, significant and positive. Through this finding, we can comment that Functional Experienscape does not directly lead to Perceived well-being, but the customer first needs to get satisfied with the functionality, physical design, and spatial layout of the service premises, then only he/she could feel a state of well-being.

Thirdly, Social Experienscape has a significant but negative effect on Customer Satisfaction, while the direct effect of Social Experienscape on Perceived Well-being is positive and significant. But, through partial mediation of customer satisfaction, the indirect effect of Social Experienscape on Perceived Well-being is significant but turns negative. This result comprehends that having a positive social affiliation could have a positive influence on customers’ perceived well-being as by social interactions, they feel relaxed and happy. But sometimes, factors like other customers’ deviant behaviors or employees’ lack of skills and abilities to perform the expected service may lead to customer dissatisfaction, stress, irritation, and aggression. Since Social Experienscape is already having a significant impact on customer satisfaction and perceived well-being, but these effects need to be turned into positive ones by creating and offering a healthy and positive social experience.

Fourthly, Natural Experienscape has a significant and positive effect on both Customer Satisfaction and Perceived Well-being. Also, through partial mediation of customer satisfaction, the indirect effect of Natural Experienscape on Perceived Well-being stays significant and positive which means the presence of natural components

both inside and outside the resort hotels increase customer satisfaction and perceived well-being as well.

Lastly, Cultural Experienscape has a significant and positive effect on Customer Satisfaction, while the direct effect of Cultural Experienscape on Perceived Well-being is in-significant. But, through full mediation of customer satisfaction, the indirect effect of Cultural Experienscape on Perceived Well-being turns significant and positive. From this finding, we can say that Cultural Experienscape does not directly affect Perceived Well-being. The customer needs to get satisfied with the overall familiarity in culture, then only it could lead to customer well-being. Therefore, researchers need to understand that negative reactions or behavioral outcomes of consumers are as important as the positive ones and they need more empirical attention when defining 'luxury' in hospitality context.

6.2 *Practical Implications*

Based on the above meaningful results, this study derives some practical implications as well. Service providers in the hospitality and tourism industry should understand that since the concept of Transformative Service has been introduced which focuses on uplifting the well-being of members of the society, so considering the well-being concept is very crucial. Our finding is meaningful as it provides useful guidelines to enhance customers' well-being by managing luxury service attributes in the resort setting.

Considering the criticality of Experienscape components, some considerable efforts need to be made by the beach resort hotel owners and practitioners to increase customers' satisfaction levels and to improve their well-being perception. Furthermore, the hoteliers must think beyond satisfying the customers and put efforts to relieve customers' anxiety/depression/stress which will positively contribute to their well-being. This could be achieved by offering and creating certain *luxury experiences* in the overall Experienscape like, playing pleasant music or sounds, having lovely scents within the hotel premises, offering different menu choices, improving social interactions between staff and customers, and making the indoor and outdoor physical environment greener, which are some possible ways to boost well-being feeling, enhance mental refreshment, and reduce stress. Moreover, our results make the underlying mechanism and association between Experienscape and Perceived Well-being clearer to be understood by the researchers and practitioners in the luxury hospitality field. Last but not the least, our research findings have provided a unique indication that hoteliers need to work on enriching customer well-being which is something beyond creating satisfied customers. However, from a practical point of view, it could be inferred that resort hotels could boost customers' satisfaction and their perceived well-being by taking full advantage of Experienscape components which may create luxurious experiences for them.

7 Limitations and Future Research

While interpreting our research findings, certain limitations must be put into consideration. Since the present research was conducted in the context of beach resort hotels, therefore, our findings should be carefully generalized to other contexts/industries. Future research needs to be undertaken to test the effectiveness of our conceptual research model in other contexts of the tourism and hospitality industry. Lastly, the present study was solely customer-focused. However, the proposed research framework can also be effective with the focus on other stakeholders (e.g., employees).

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Taxonomic Manifestations of the Concept “Man” in Digital Communication



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Abstract The subject of communication and the meaning of words respond quickly to any changes in society. People’s views on problems, phenomena, attitudes to the environment, history, love, morality are subject to verbalization in modern media. The most current events are recorded in modern digital communication and we can say that it reflects everything new that is happening in the world. In digital communication, the varieties of current journalism look quite interesting, which attract with their pathos, metaphor, figurative means, expression of what is said. The article considers the ability of journalism to capture pragmatic values, the smallest deviations from the norm. This allows you to track the scope of concepts, the implementation of meanings, connotations and more. The paper attempts to study within the digital communication the content of the ontological concept of “man” and ways of its variability, impressiveness on the main various thematic web resources. The game of values and senses is covered on the basis of comparison of traditional, or dictionary, interpretation of the maintenance of this concept and the formed new maintenance in digital communication of mass media.

Keywords Man · Digital communication · Journalistic style · Meaning · Sense

1 Introduction

Man is an interesting object for scientific research. The ability of language to fix phenomena, objects, even emotions has created the opportunity to study ways of reflecting man in language, e.g., physical qualities, internal states, social interactions, moral values, and attitudes to material and spiritual.

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Today, the humanities approach in various fields of knowledge is taking root in science. It consists in creating studies which are not just human-oriented, but those that take into account sensory human perception, reflect human functions, highlight human characteristics. Nowadays, a market economy also cannot avoid an anthropocentric orientation, because everything that is produced must be bought, and people buy goods or services, with their preferences, habits, moral and ethical attitudes, nation-centric views, and so on. Marketing research is aimed primarily at buyers, to study the features of the latter. As a result, there is an opportunity to influence the buyer to achieve their goal. In this way, “humanistic marketing” is formed, and the humanities, in turn, contribute to the study of man and his functions, his perception, and so on. Marketing actually integrates with communication attitudes, care for the person, his/her comfort, which tries to ensure efficiency. Activities, services, goods are often aimed at achieving comfort for the buyer. Interesting in this comfort paradigm is the convenience for those around the consumer, such as animals, i.e., the consumer cares about animals and creates a comfortable environment for them. So, you can refine your understanding of marketing and call it “comfort marketing.” The issue of comfort is quite relevant today. Details about the existence of comfort, as well as the formation of personality in the conditions of media existence are considered in the work “Human Personality in the Conditions of Media Being” by Olga Nezhyva and Natalia Teslenko et al. (2020).

Words with their meanings convey the meaning of a certain message in certain coherent constructions—sentences. Different syntactic constructions of sentences have their own peculiarities of perception in the conditions of digital communication. From our point of view, precisely because journalistic, including marketing, communication seeks to express the maximum influence on the recipient, the definitive constructions which are perceived as axiomatic suggestion appear interesting. Consider this on the example of the token “man”, when in different communicative conditions of Internet communication, the word takes on additional meanings, and sometimes does not reflect the traditional vocabulary.

2 Literature Review

The concept of “man” and the contexts of its use have been the subject of research by many linguists. Among Ukrainian researchers, various scholars have paid attention to the formation of the meaning of the word “man”. So, Harbera Iryna investigated the secondary semiotic nomination of the concept of “man” in the phraseology (Harbera 2018). Moreover, Dmytriyev Sergii paid attention to the mechanisms of generation of nominations in the human mind and the influence of ethnopsychological factors on the choice of objects of nomination (Dmytriyev 2015). In addition, Lishchuk Tetiana devoted to the study of the components of the concept of “man”, highlighting the explorations, which depict the appearance of man on the material of Ukrainian literature, phraseology, folklore in her linguistic works of the twenty-first century (Lishchuk 2014). Thus, the methodological approach of the corpus study

of the emotional background of man, which is based on the material of idiomatic constructions of Ukrainian scientists, is important and interesting (Zahnitko and Krasnobayeva-Chorna 2020).

This is one of the few studies in Ukrainian linguistics based on new Ukrainian language corpora. In the study of the behavior of language units that reflect the psycho-emotional state, made with strict adherence to the psychological characteristics of man, the stages of psychological behavior. Volodymyr Hack considers linguistic aspects of linguistic transformations, in particular the correlation of meanings and forms of expression of these meanings in his fundamental work. The author proposes his own typology of linguistic transformations, i.e., the transition from one way of representing meaning to another. According to Hack, it is necessary to study all representations of a certain token in different conditions with different meanings, thus emphasizing the multifunctionality of each unit (Hack 1998).

Researchers of information technology study a word in its various meanings in terms of context-dependent variation, while determining that the key aspect of understanding human language is the contextual conditionality. Lexicographic resources (for example, WordNet) contain only some context-dependent variations (Nair et al. 2020). The study of human ideas and intellectual behavior is considered in the work of Italian scientists such as Simone Viganò, Valerio Rubino, Antonio di Soccio et al. (2021). Thus, the study of textual and syntactic capabilities of a word allows to expand not only the contextual and variable meanings of the word under study, but also to expand the ways of studying language representatives of a certain meaning in the text, in particular, in Internet communication.

The philosophical aspect of the study of digital communication today is extremely popular among scientists because of the predictive ability of such research to see the directions of information movement and ways to manage this information. Robert K. Logan in his book “Review of Human as Media: The Emancipation of Authorship by Andrey Miroshnichenko” examines the prognostic study of futurologist Andrey Miroshnichenko, comparing it with his own concept of the digital society and digital communication. Robert K. Logan actually identifies important for us dominants of the concept of Andrey Miroshnichenko, among which are: (1) all digital communication is defined as journalism with its own style, (2) the way of disseminating information is viral editorial work of each user and in fact “this information through personal interest filters, conducts his own microediting and publishes is message, and he does so without any restrictions”; (3) all communication is designed to respond: “The user’s main goal is to elicit a response”; (4) digital communication with its method of reaction helps to avoid the effect of the crowd, although, in our opinion, not to avoid, but to reduce the effect of “herd inheritance”; (5) the creation of social gravity is seen as one of the ways to form thematic or marketing online communities (Logan 2020). The author of the Review notes that “Miroshnichenko makes the shrewd observation that the Internet is less in accurate that we believe it to be”.

Researchers often study the influence of the media on the political beliefs of participants in digital communication. Robert N. Entman studies how political publications determine social gravity by political beliefs. He considers this process as political self-identification. The author’s conclusion that “media affect what people think

about, not what they think” is extremely important. That is, the media make a focus topic for the reader, first, and secondly—form the subject, i.e., the content of the focus topic (Entman 1989). Nezhyva Olga in her article Future Ukrainian’s Image: modern vision shows an important place of future human image and presents the future human as a harmonious personality, which is based on a highly developed intellect, spiritual wealth and physical perfection (Nezhyva 2015).

Such multi-vector attention to digital communication suggests that most areas of our lives are concerned with such communication and require constant study and monitoring in order to use these technologies and how to manage them.

3 Methodology

The language material was obtained by current sampling of definitive formations with the word “man”, using the Google search engine. Realizing that media discourse as a special style or background does not exist, but is only a way of transmitting information, the empiricism of the studied material is based on semantic-syntactic understanding of the features of definitive education and anthropocentrism of language. There is semantic-syntactic analysis of the transfer of meanings within specific constructions. The interpretive technique allowed to divide the whole array of language material into four main groups. In addition to the above methods, the following general scientific methods were used such as analysis, synthesis, comparison, generalization, systematization.

4 Results

4.1 *Linguistic Characteristics of Syntactic Definitive Formations with the Word “Man”*

Observation of the word “man” in our study focuses only on constructions with the word “man” or those semantic elements that are part of the dictionary extensional meanings. According to our observations, quite often in various types of Internet communications there are definite statements. Interesting representatives of the meanings of the word “man” are constructions with a definite use, which consist of a nominal syntagm—SN and a verb syntagm—SV (Hack 1998, p. 530), which has such a structure as “man is...”.

It is necessary to consider the meaning of this construction through the understanding that such a “modification is primarily related to the paraphrastic nature of interpretation, because to give a word definition is equivalent to composing a paraphrase that will be semantically quasi-equivalent” (Pavliuk 2018, p. 85). This means recognizing the possibility of at least two formulations that can define this option, so the use of paraphrases in the sentences of the definition causes the emergence of a number of variant types of definitions for the representation of the same type

of lexical meanings of one referent. Volodymyr Hack notes that the “referent of the statement is the situation, i.e., the set of elements that are present in the mind of the speaker in objective reality at the time of “speech” and to some extent determine the set of language elements in the formation of the statement” (Hack 1998, p. 358). The formation of structures occurs according to a certain scheme, and definitions that contain signs of the meaning of the word “man” may be many and not have a final set number.

Thus, the second part of the syntactic formation, semantically, has a paraphrasing character, and accordingly, creates a contextual equivalent to the word “man”. In this case, the meaning in the predicative construction is contextually determined, which corresponds to the phenomenological state of the speaker, who seeks to influence the recipient in a certain way.

4.2 Internet Communication as a Kind of Journalistic Style

The study of communicative resources on the Internet is important for understanding the nature and structure of sentences and texts. Internet journalism has a powerful influence on society, on the one hand, on the other—it can create conditions for changes in the policy of various industries, which makes the study of Internet communication relevant. Formed mental formations of both the individual and social attitudes serve as a basis for understanding and understanding the semantics of different types of structures at the level of communicators.

Communication becomes possible in the conditions of observance of semantic correspondences at the level of the sender and the recipient of the textual information which should be formed in view of the general public and which, on the other hand, forms this wide generality. It is this orientation of Internet messages that can quickly become stereotyped, which negatively affects the overall interest and influence of messages, which reduces their quality.

At the same time, it should be noted that the perception of society is not possible without the presence in the messages of meanings familiar to the recipients of information. Since ancient times, it has been understood that communicative influence must be exercised by operating with concepts known to people. What semantic guidelines underlie the formation of journalistic messages? There are the following “mental platforms” such as gender, racial, national, religious and ecclesiastical, universal (global) (Alexandrov 2012, pp. 12–13). Semantic dominants, as they can be called in view of the linguistic concepts of the formation of communicative meanings, appear as a kind of coordinate system for communicative orientation in the flow of information.

Definition is one of the influential forms of information transfer, because its very form has led to almost axiomatic perception of the text. Let us consider the structure of the definition of journalistic style as a form of information transfer. The explanatory dictionary of the Ukrainian language contains the definition of the term “definition”. It is a concise logical definition, which contains the most significant features of the defined concept. Interpretation shows that definitions determine the most significant

features of a concept. Other features of the concept that may occur in different uses are beyond the scope of the scientific definition.

The structure of the definition sentence consists of a nomination, which for our work will be expressed by the word “man”, and a predicative part with different attributes, the semantic interpretation of which must be explored. The traditional understanding of the concept of “man” can be established by the explanatory dictionary of the Ukrainian language: I. Man—singular to people. 1. People—social beings, representing the highest degree of development of living organisms, have consciousness, have articulate language, produce and use tools. 2. Outsiders, other persons in opposition to the subject; 2. Man—person as the embodiment of high intellectual and moral qualities. In dictionary definitions we can identify keywords that in one way or another in different interpretations can be used in other definitions of “man”. Some of them are predicates “being”, “person”, attributes are “social”, “highest”, “higher”, “consciousness”, “language”, “tools”, “subject”, “intellect”, “morality”. This definition reflects a generalized understanding of the concept of man, which is a constant in relation to various discourses. All other uses and meanings are considered deviations that have phenomenological properties. Deviations from the traditional interpretation in different uses belong to the sphere of pragmatics and are implemented in extensional contexts. It is under such conditions that phenomenology in the understanding of the concept of “man” acquires a pronounced individual application and the traditional interpretation is interpreted taking into account various factors.

Internet communication is a subspecies of journalistic style of speech. Scholars recognize the journalistic text as a separate type of creative thinking, which has a definite purpose and range. It is worth highlighting another important function of this style (Yatsymirska 2018). It is the formation of public opinion. Journalistic style performs the function of forming mass consciousness, influencing it through the selection of information. This is the style of the media. It is characterized by linguistic forms of standardization and expressiveness, the presence of elements of conversational and artistic styles to achieve expression (Yatsymirska 2018).

Definitive sentences of journalistic style follow the scientific style, and the structure of definitions is a form of axiomatic transmission of information, which creates the effect of obligatory perception. Given that the journalistic style does not seek scientific accuracy, the content does not necessarily correspond to a scientific interpretation, but may be based on certain elements of ontological meaning known to the average language user from the traditional notion of the object of definition. This idea is recorded in the glossary. After all, journalism is designed for this type of information perception. Definitions in journalistic style can combine knowledge from different sciences on a particular concept. Thus, journalistic definitions differ in content from scientific ones.

Journalistic style does not do without the means of expression, which could not help but affect the definitions. In the texts of journalistic style there are two types of definitions: (1) with a metaphorical meaning and (2) with a direct meaning. Metaphorization means not only the use of metaphors, but also the features of

the compositional construction of the text (Taranenko 2013). Both predicates and attributes can be expressive in metaphorical definitions, according to their structure.

Distinctive statements are used in various spheres of life. Today we see texts of philosophical purpose, various types of journalistic appeals, statements about moral and ethical attitudes and texts of an advertising nature. All these types of formations are designed to create a certain impact on the audience to which they are directed.

Interesting, from our point of view, is the definition of “man”. Analysis of the formation of the boundaries of the semantic load on this token can show the system of creating a definite statement, in particular, for moral and ethical purposes, advertising purposes, will show ways of language manipulation.

4.3 Communicative Characteristics of Syntactic Definitive Formations with the Word “Man”

Definitions with the definition of “man” in Internet discourse can be characterized in accordance with the purpose of use, which directly affect, as noted above, the basic knowledge about man. Indicators of this basic knowledge are, for example, the tokens “being”, “consciousness”, and “mind”. They form ontological definitions.

For the social environment, the definition of “man—being” is stable, which may have different discourse connotations. For example, “*Man is the greatest of all beings*” is a definition. This definition distinguishes man from other living organisms and aims to emphasize the superiority of man over other beings. The selection of man among other beings often has a pathetic context.

Journalistic definitions of traditional human superiority among other beings acquire imagery due to context. It is the attributes for such a definition as “man—being” that play a decisive role in the sensory perception and formation of a new image. For example, the title of article “*Man—a lonely creature: three books about loneliness and ways to resist it*” is sympathetic. Such uses form a metaphorical image designed to express not the concept of “man”, but the context in which this concept is used. A quote from Shakespeare’s famous work “King Lear”: “*An unadorned man is such a miserable, naked, two-legged creature ...*” It is about a man among a number of other interesting texts works. Attributes of “poverty”, “naked”, “biped” are the main characteristics of the definition. Evidence that in definitions that are based on generally accepted human characteristics, such as “man—being”, the basis of the definition is an attribute, is the location of the attribute in the predicative center. It is such definition as “*Man—a complex creature. There is a connection between us and the sky*”. Thus, figurative attribute “complex” acquires this meaning through the disclosure of the attribute, rather than the predicative unit. You can also give definitions with inconsistent attributes, which are also the basis of sensual, pathetic perception in the definition of “*man—creature*” i.e., man is a creature in search of meaning. Using the predicate “creature”, the authors of the messages use attributes that allow to express those qualities or areas of human life that require a certain

discourse, while the predicate itself has no signs of imagery, because it is basically an ontological feature of man.

The definition of “man—personality” includes general knowledge about man, as well as all definitions with the previous token “being”. Definitions with an emphasis on personality have an extensional context that narrows the intensional meaning. The attribute can be a separate, imported or contracted structure. For example, a man is a person who has the right to choose. As we can see, the construction “which has the right to choose” gives the definition the basic meaning and contains a sign of a person, which is emphasized in this context.

The idea of the evolution of man from animal led to a different definition, which can also to some extent be considered ontological. Let us consider it on the example of the occasional substitution “creature—animal”. Understanding man as an animal forms a vivid metaphorical image, colored by the author’s connotation, based on the reduction of human significance, but with an emphasis on a certain attribute that glorifies it, i.e., man is an animal with great imagination. This is how a person who responds to modern challenges is characterized. The media also use quotes from famous people: Aristotle said that “*man is ον πολιτικόν, i.e., a political (social) animal*”; “*man is a two-legged animal without feathers*” (Filippova 2012). The nature of journalistic definitions does not allow us to say that they contain the most significant features of the concept of “man”. However, they are clearly grouped on the typical features of man, combined with connotative elements that are grammaticalized in various attributes, in particular, “with great imagination”, “political animal”, “two-legged animal”. As noted above, attributes occupy a significant place in journalistic definitions. In the last definition, we can distinguish another type of attribute, which is based not on human characteristics, but on its differences from other beings—“*without feathers*”. Such metaphors are characterized by a certain structure of meaning formation. On the one hand, the intentional concept of the animal is broader than the concept of man. However, words with a wider intentional have a vague meaning, which requires concretization of the extensional context. Thus, metaphorization with a broader concept requires specification in a certain quality and causes the emergence of metaphorical attributes. These metaphorical definitions, as we see, are based on the already traditional, albeit occasional, idea of the person contained in the predicate, and realize their metaphorical meaning with the help of attributes, forming a vivid image.

Another type of definition of “man” is due to human properties. These are constructions such as: “man—mind”, “man—consciousness”. In this case, bright associative attributes are not involved, but the functional properties of the referent are called through the predicate of the construction. With the help of these predicates, a precedent context can be constructed. It is an example of the definition: *the basis of knowledge about man is that man is not a body, man is consciousness*. This is based on the antithesis. Such obvious characteristics are very rarely used in media definitions and are practically not metaphorized. In this example, the basis of journalistic imagery is the antithesis, not a metaphor. The paraphrase, with which this definition is created, reflects the property of man, not the man himself, but does not contribute to the creation of the image.

The idea of “right” in man can be observed in the moral definitions reflected in the tokens “value”, “love”, “dignity”, “perfection”. The clearly philosophical humanistic doctrine of “man—value” shows the intentionality of meaning, without requiring extensional contexts. Philosophical concepts themselves create a precedent text. For example, this is observed in this context of the text: *“Every person is a value. I understood this thanks to the service of early intervention and therefore continued to practice her advocacy when my daughter has grown up and left the program. The main dogma of humanism is: man is the highest value and measure of all things. For example, we still believe that art should be humane, that is, consider a person as the highest value”*. It is worth noting that such definitions have no metaphorical meanings, but create a pathos associated with the existence of concepts of well-known philosophical thought.

Let us consider in more detail the moral definitions. The ethical question “man—dignity” can acquire extensional contexts and extrapolate into attributes. This makes it possible not only to clarify the predicate, but to form a further sign transfer, which is close to contextual synonymy. For example, in the headline of the Ukrainian newspaper (*Argument*) *“The new Ukrainian man—a sharpened sense of dignity”*, the words “new—sharpened” are contextual synonyms, and the nominative-predicative correlation remains the same as in previous examples. It is with the help of nominative-predicative correlation that contextual attributive synonymy became possible.

The study of human nature in view of its formation and development in the system of modern ethics reveals man as an individual. On this basis, there are nominative-predicative contextual synonyms of the definition, for example, “man—uniqueness”. Moral definitions, which contain a predicate with a lexical expression of these ethical concepts, form precedent contexts without involving metaphorical attributes.

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Understanding man as perfection is inherent in Christian ethics. Christian anthropocentrism has a significant influence on the formation of the associative isomorphic referent of the concept of “man”. The understanding of perfection in the system of Christian ethics is connected not so much with the recognition of man as ideal, but with its resemblance to God, in whose image man was created. Man’s perfection, according to Christian ethics, has passed into moral perfection today. The Christian metaphor *Man—an icon of God* shows the perfection of man in the likeness of God. Thus, a system of definitions which reflects a certain concept can be formed on a common mental platform, but verbalized in predicates and attributes which are close to the basic concept and are its conceptual element.

Moral definitions can have different verbal interpretations. Preliminarily, definitions with tokens belonging to the intentional meaning of the concept of “man” and which, in turn, cover mainly the moral aspect. Vocabulary to indicate issues of

morality and morality may not contain direct names of a category from the list of this knowledge. However, journalism has enough influential means to focus on issues related to the rules of human life. For example, the title of article *Why is everyone our teacher?* is a definition. In this definition, we see an appeal to human qualities that we can see, hear, feel through external manifestations, as well as a form of appeal to the reader, which stimulates perception and provides activation of mental activity, i.e., a form of questioning.

Influence in the media is provided not only by considering the moral issue, which, like any moral category, can be debatable through a greater or lesser manifestation of a quality, but also provided by the cognitive characteristics of the speaker. Linguo-personology is a kind of “psychology of antiquity” when it comes to all known things, but by other linguistic and psychological categories, when the mechanism of conceptual repetition is used. The title of article “*A person is a fraction in which the numerator indicates how other people evaluate you, and the denominator shows how you evaluate yourself*” on the web page is a good example for this. After all, the understanding of moral categories on the scale of accounting units contributes to the activation of attention and forms an interest in the material, which has long been known in other lexical interpretations. Representation of various aspects of morality and morality in view of one’s own experience and way of perceiving the surrounding reality creates the effect of “looking with other eyes”, which reveals a long-familiar question in new terms.

Close to moral definitions can be called volitional. Their significance is not based on the system of universal values, but reflects the urgent need for certain qualities, in certain types of human activity. Here are some examples of definitions: “*A full-fledged person is first of all a person strong in spirit*”; “*Man is what first of all resists...*”. From the above definitions, we can identify the tautological formation “man—man”, which is a clear example of the attributive formation of meanings of journalistic definitions with contextual synonymy “full—strong in spirit”. This construction does not illustrate contextual synonymy, but provides disclosure of the meaning of the predicate.

Social definitions show the peculiarities of human interaction with each other, the place of man in society. Most often, these formations are a strong marketing tool to attract attention. We have considered the main ways of forming and transferring values on the example of previous classifications. Social definitions are interesting for us, first of all, by their semantic possibilities. The layering of social parameters in relation to man was interestingly manifested in the metaphorical definition of “man—status”. This definition “*I am a man—this is the main status!*” is created by mixing common and scientific vocabulary with generalization in the form of an axiomatic statement. The proposed design is a striking example of the creation of metaphorical imagery through the integration of styles. Thus, the social definition expresses the basic sense in a word the person, emphasizing through a predicate quality of concept “man”.

Generational learning has always been the focus of philosophers, sociologists, educators. Furthermore, today it is difficult to overestimate the importance of learning for each individual and for society as a whole. Educated people are able to make an

appropriate society and, conversely, in an educated society, an individual can be equal to him. The importance of education in the media is exacerbated by the definition of “man—knowledge”. It is an example of this definition: “*Every man is what he knows.*”

Numerous mentions in the press about a healthy generation have been actualized in the definition of one aspect of human health through the definition of one of the conditions of a healthy life. The tautological definition is evidence of attention to human health. Therefore, it is not surprising that the advertising campaign of the fitness studio is built by addressing one of the traditionally recognized aspects of a healthy lifestyle. The influence of this definition is achieved through axiomatic perception, which is achieved by constructing a sentence in the form of a definition. Here is an example of this definition: “*An active man is a healthy man*”.

Interrogative definitions are often found in media sources and give the impression of excessive interest in a question or problem. The title “*Is an outstanding person the result of talent or perseverance and diligence?*” on the web page of library is a good example for this. Moreover, this variable construction carries the experience of understanding the name and allows us to focus not on aspects of the concept of man, but on attributive characteristics that are not included in the intentional meaning.

Work for modern man has become not only the main way to achieve wealth, but has become a hyperbolization of the need for certain things, products, services and more. In a capitalist society, a person is not only dependent on work, but also feels the pressure of the system of instilled material values, which dictate the need for even greater wealth. all this has led to the fact that people can have several types of employment, work several jobs and have almost no free time, i.e., all the active time of the day to devote to work. So, it is not surprising that in different titles or narrative contexts one can find a metaphorical model of “man—work” in its extensional contexts. Such a definition as “*Man—not just a job*” is quite popular in the media. In the use of the definition of “man—work” there is a negation of the outlined definition, which indicates social tension. Another example of the definition “*A busy man—a happy man*”, where when a man is considered in the parameters of work, can be traced in this statement. As we can see, this is a tautological definition, the structure of which was discussed above.

Negativity of definitions can be achieved not only by negative particle “not”, but also by denying the meaning of the whole concept of “man”. It is an example of the definition: “*Man is something superfluous in nature, aggressive*”. The word “nature” in this construction shows that the attributive and predicative meaning of the definition is in a meaningful connection to nature, where man seems not only superfluous but also hostile component. Grammatically, this construction does not contain objections, but lexical means create an antonymous context, e.g., “*man—something superfluous*”, “*man—something aggressive*”.

One of the forms of political influence on society is the forms of definition, which can have a clearly negative imagery. There is such definition as “*In the customs union, man—rubbish*”. This definition was formed as a challenge to the political and economic development strategies of the country.

Thus, negation in definitive formations occurs in three main manifestations: direct negation, contextual negation, figurative negation. These types of formations do not form attitudes, but are designed to create an emotional effect.

Modernity forms new landmarks that can be seen in the referents of metaphorical transference. The identification of a person with a phenomenon, object, event, quality, etc. shows which areas of human life are inherent in a certain period of historical or social time. This is most often found in advertising slogans. These definitions must be persuasive in nature. Persuasive definitions show the intensification of attention to processes, phenomena, research, and so on.

Over the last 20 years, the interest of both scientists and the average person in nutrition and its importance for health has increased. Numerous publications have drawn attention to malnutrition, overweight and obesity. Understanding a person as a consumer lead to discussions about where exactly a person is in the consumer chain (herbivorous, omnivorous or carnivorous organism). The media did not miss it. For example, Feuerbach's definition "*Man is what he eats*" falls into the Internet resources.

The media can influence the reader by such means as language, thoughts, feelings, interpretation of one definite statement in different ways to convey an opinion, referring to the point of view that best illustrates the topic and purpose of the statement. The definition "*Man—a consumer*" does not deny, but only constructively brings us to the moral and ethical point of the question "*Man is what he/she eats?*". This issue has gained widespread popularity in the media and now includes many similar implicit definitions.

This is an example of the other kind of definition: "*Man—an aqueous solution*". Adding the phrase "aqueous solution", we interpret the definition of "man" as a chemical solution, where the main element is a combination of two hydrogen atoms and one oxygen atom. Consumption of 1.5–2 L of water per day maintains the body's water balance and helps people to continue their existence as a biological entity. There is also a paraphrase of this definition in the media, such as "*Man—thinking water*". Here we refer to the peculiarities of water as an element, a chemical solution, and in general most objects in the universe. Solid reserves of ice blocks have been found on the Moon and Mars. On Earth—70% of the surface of our planet is covered with water. Our brain is also 70% composed of H₂O (not to mention the whole body). So, we can say that man is thinking water. The media used this comparative construction of "man—thinking water" to partially express congruence, that is, to make the reader think about what is generally well-known facts, but presented from a different perspective. These definitive formations show definitions in the literal sense and metaphorical definitions that follow from well-known facts.

For many years, humanity has followed the path of humanization, always emphasizing it in numerous philosophical theories, ethical categories and so on. The importance of man is always emphasized in public life. In particular, political activity is based on a localized understanding of activity for the benefit of man, recently and nature, but still, connecting the latter with man. The tendency to this has been widespread since antiquity and persisted in various manifestations to this day. The

humanistic understanding of man in the definitions is based on the properties of man, his/her preferences, sphere of activity.

Recently, you can find slightly different definitions such as “*man—an insect*”, “*man—nothing*”, “*man—garbage*”. Such definitions negate the significance of man and cause a negative attitude towards man and his/her activities. They not only change the attitude, but also bring up the attitude to the person who is not a value, and therefore there is no value of life, the value of preferences and so on.

The dehumanization of definitions in this case is metaphorical, and the use of these formations forms a hidden negativity about man. Frequent use of such definitions in the same context can lead to devaluation and aggression against a person.

5 Conclusions

Definitive statements in the author’s explicit contexts create imagery based on the sensory perception of the named object, concept, and phenomenon. Images are known to be formed by various means, such as name, portrait, deeds, language, thoughts, feelings, extra-plot elements, and author’s assessment. The formation of images in journalism is not as systematic as in literature, because the discourse of the media operates by mechanisms of influence, rather than aesthetic perception, as in literature. The definitive form of utterances serves as one of the means of creating an image in journalism, the formation of which is carried out according to the following parameters: the sensuality of the short form—one or two predicative centers; reliance on well-known meanings, or “mental platforms”; linguistic representation, which contains attributive applications of different nature.

The active use of journalistic discourses and the interpenetration of styles create the preconditions for the formation of new definitions. Each journalistic discourse is devoted to a particular problem and reveals various issues, focusing on the phenomenological content. The author of the journalistic text does not claim general recognition and creation of a scientific universal that would satisfy all users of the language and would contain the most essential features of a certain concept.

Semantic interpretation of definitive sentences with the nominal part “man” occurs in two ways such as paraphrases and metaphors, where most often through the process of metaphorization. The study of definitions of journalistic style to denote the concept of “man” showed that definitions are formed on the basis of paraphrases and metaphors. Paraphrases demonstrate the existence of a descriptive construction that not only explains the concept of “man”, but that reflects the meanings embedded in a particular concept in a particular discourse.

Metaphorical definitions are present in the formation of the image, accompanied by the author’s connotations.

In this paper, we proposed a classification of lexical components of definite expressions in modern media such as ontological, moral, volitional, and social. Actually, linguistic observations allow us to outline some features of the interaction of these lexical components for different applications:

- the use of ontological and moral components of content in the formation of the meaning of the definition create pathetic statements, and they do not reach a vivid imagery;
- volitional and social definitive formations can have a vivid imagery;
- attributive relations between the nominative and the predicative part are important in various definitions;
- attributes can denote both similar for the nomination and predication of properties, and different in direct or contextual opposite;
- contextual opposition can be formed and predicates, if they are not an ontological concept;
- mental platforms in the system of linguistic transferences reflect meanings and precedents, but do not affect the general mechanisms of value formation;
- in constructions with the pronoun *this* is leveled contextual synonymy as a linguistic process, but the formation of figurative expression remains;
- to create figurative or precedent texts in definitive formations are used as long-familiar linguistic mechanisms—conceptual repetition, interrogative sentences, integration of styles;
- social, often marketing, techniques relate to the interpretation of concepts in definitions based on some scientific meanings and traditional vocabulary definitions. Vocabulary in this case refers to modern social values—status, education, health, physical activity, work, creativity,
- direct, figurative or contextual negativity is created in relation to social processes that cause tension or have a dehumanized meaning.

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Economic and Commercial Value Comparison Between Syariah Compliant and Muslim Friendly Approach in Hotel Industry



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Abstract The tourism sector contributes a lot to the income of a nation, provided that they can meet the travellers' expectations. With the industry worth trillion dollars worldwide, meeting expectations of the travellers able to provide advantages for a country on gaining a significant portion of the value. With the rise on the number of Muslim travellers in the world, which contributed to the rise of halal-based tourism demand, various parties start to improve their businesses so that they can have a piece of the action. Numerous changes need to be done to the services, as the concerns of Muslim travellers extended beyond the halal status of foods served only. In recent years, various approaches have been adopted to promote Halal tourism, including the introduction of Syariah compliant and Muslim friendly recognitions on hotel industry in Malaysia. Such approaches, even though yet to receive government-level approval, have been used by numerous hotels in Malaysia. Although those two recognitions' aim is similar, which is to be used as the attraction to Muslim travellers, but each of them carry different advantages, economically and commercially. This paper aims to look into the differences of values between Syariah compliant hotel and Muslim friendly hotels, from the aspect of economic and commercial values. The content analysis method was applied in this study to fully understand the economic and commercial value comparison between syariah compliant and muslim friendly approach in hotel industry. As a result of the economic and commercial value comparison between Shariah-compliant hotels and Muslim-friendly hotels,, they able to provide service providers on which approach that is suitable to be used, in the effort to increase not only its visibility to the world, but also the business opportunities in years to come.

Keywords Commercial value · Syariah compliant · Muslim friendly · Hotel industry

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1 Background

1.1 Tourism Industry

The development of the tourism industry has recently become a topic of global debate. Tourism increases the economy's revenue, produces thousands of employments, improves a country's infrastructure, and fosters cultural interchange between outsiders and natives. Tourism sector is hard to define since, unlike other industries, there is no single product. It encompasses a wide range of businesses, including hotels, transportation, attractions, travel agencies, and more. Tourism is described in its broadest sense as when individuals travel and stay in areas other than their regular surroundings for less than one year for leisure, business, health, or other reasons (Lock 2021).

Tourism in essence helps in boosting up the national growth. Tourism has both direct and indirect benefits for a country. The direct advantage could be aided by increasing national income and improving the country's balance of payments. The indirect contribution is made through the multiplier effect and by connecting countries with hard infrastructure to countries with soft infrastructure (Nurrachmi 2019). Notably, from international context, international tourist arrivals had increased by 4% in 2019 to 1.5 billion. According to a report by World Travel & Tourism Council, in 2019, travel and tourism had contributed 10.4% of global GDP amounting to US Dollars 9.2 trillion. What is more interesting these international visitors spending was amounting to US Dollars 1.7 trillion (Travel & Tourism Economic Impact | World Travel & Tourism Council (WTTC) n.d.).

From Malaysian context, international tourists was reported to a figure of 26.1 million visitors in 2019, which led to a contribution of RM86.1 billion to the country's revenue (Musa 2021). Meanwhile, Malaysia's domestic tourism performance also showed the same increase trend in 2019 than it was in 2018. Department of Statistic Malaysia reported to a total of 239.1 million visitors in 2019, representing an increase of 8.1% over the previous year. Domestic visitors spent a total of RM103.2 billion, representing an annual increase rate of 11.5% (Department of Statistics Malaysia Official Portal n.d.).

With this tremendous expansion, more creativities and initiatives of the government is definitely essential. Malaysia's local population is growing every day, and the current 2021 population of Malaysia is 32.7 million as compared to 32.6 million in 2020, based on the latest statistic shown by Department of Statistic Malaysia (Department of Statistics Malaysia Official Portal n.d.). According to this figure, 63.7% of the population is Muslim. As a result, the success of the halal industry must be continuously monitored, as it is considered as a rapidly developing sector that has attracted a variety of stakeholders (Musa et al. 2019).

As a result, the tourism and hotel industries are working hard to catch up to the other halal industries and are excitedly developing Islamic tourism items. Thus, Islamic-based hotels, either it be as "Shariah Compliant Hotels" or "Muslim-Friendly Hotels" (MFH), are among the items that must be considered to meet the current

worldwide demand. Halal tourism is becoming increasingly important in today's globe. It entails delivering trip packages and destinations that are primarily geared to cater to Muslim concerns and focus on Muslim requirements. The performance of Islamic hospitality in the different Muslim cultures varies, but the "heart" of the offer of hospitality by Muslims remains consistent (Alserhan et al. 2018).

Halal tourism which comprise of various aspect including hotel industry is thus a type of tourism that adheres to Islamic values, and in this sense, it can be compared to the growth of Islamic banking practises in that both allow members of the faith to successfully participate in the contemporary world while maintaining their values and practices (Mohsin et al. 2016).

Since a decade, Malaysia was mentioned in many literatures as top country on Halal hospitality and Islamic tourism concept be it from global or Asean perspective (Henderson 2010; Musa 2021; Nurrachmi 2019; Salleh et al. 2014) and a pioneer in introducing various standards for Halal matters (Samori and Sabtu 2014). Among the ten Organization of Islamic Cooperation (OIC) countries, Malaysia was awarded as the best top halal friendly holiday destination based on facilities and services offered to Muslim tourists for 9 years in rank except in 2019, in which Malaysia shared this top rank position with Indonesia (Mastercard and Crescent Rating 2019).

July 2019 was a remarkable moment as Malaysia government through the initiative of Islamic Tourism Centre has introduced the "Muslim-Friendly Hotel Recognition" initiative, a form of accreditation which recognises syariah compliant accommodation for tourists. 12 hotels throughout the country were recognized as Muslim Friendly Hotel having fulfilled all needed requirements to get such an outstanding recognition. The hotels are: Movenpick Hotel & Convention Centre KLIA; Hotel Grand Bluewave Shah Alam; The Light Hotel Penang; Adya Hotel Langkawi; PNB Perdana Hotel & Suites On the Park Kuala Lumpur; PNB Perdana Kota Bharu; TH Hotel & Convention Centre Terengganu; Zenith Putrajaya; Tamu Hotel & Suites Kuala Lumpur; PNB Ilham Resort Port Dickson; Hyatt Regency Kota Kinabalu; and Grand Darul Makmur Hotel in Kuantan (Star 2019) and on 3 September 2020, an official launch of logo for this distinguished recognition was made by the government through Ministry of Tourism, Arts and Culture Malaysia (Launch of Muslim-Friendly Accommodation Recognition—Islamic Tourism Centre of Malaysia | ITC n.d.). Interestingly, within a year, in 2020, the list of hotels getting this recognition was increase to 42 lists of hotel due to the good support from the Malaysian Association of Hotels (MAH), the Malaysian Association of Hotel Owners (MAHO) and the Malaysia Budget Hotel Association (MyBHA) (Santachannel 2020).

Despite all these glorious news, still remain in question is the difference attributes of Shariah Compliant hotel vis a vis Muslim Friendly hotel as there is no clear government documents or legislative guidelines on this matter. However, few literatures recently were able to give a clear picture on this issue hence gave a clarity to a public on this matter even most of it has been descriptive in nature.

According to Sahir and Azizan (2018), Malaysian laws on management and administration of tourism sector is adequately covered, however, when it comes to the practices of MFH, there seems to be very much insufficient. He argued that

no government policy so far explicitly governs the matters of Islamic tourism what more on the Islamic hotel matter.

Therefore, the purpose of this paper is to provide an understanding of Shariah compliant hotel practices (SCH) and Muslim Friendly hotel practices by Malaysian hotels. It aims to explore on the economic and commercial value of these two types of hotel branding as it is unanimously agreed that, the Islamic tourism market has been recognized by the Malaysian government as an economic contributor to the country. (Hashim and Fauzi 2019; Jeaheng et al. 2019; Zulkifli et al. 2011). In a good sense, it signifies that the SCH business is currently available and widely accepted in the market. High demand for Islamic products and services appears to be the impetus for current SCH business trends in the hospitality industry (Salleh et al. 2014). The novelty of this paper would be from the comparative discussion of economic and commercial value between Shariah Compliant hotel and Muslim friendly hotel. This study was conducted with an in-depth interviews with the experts in the hotel industry in Malaysia, including government officials, hoteliers, and hotel associations to give the best idea and a light to the discussion.

2 Syariah Compliance Approach

Syariah Compliant hotel is described as a hotel whose services and financial transactions are based on Syariah principles, including but not limited to serving halal food and beverages, as well as all other criteria designed for the health, protection, climate, and economic benefits of all mankind, regardless of race, religion, or culture (Ahmat et al. 2012b).

Serving halal food and beverages is not the only requirement for compliance. The Sharia Compliant hotel should be built with health, safety, and economics in mind for the good of all people, regardless of race, religion, or culture (Majid et al. 2015). The availability of Shariah-compliant hotels allows for a wider idea of worship to be realised even when travelling to another country or location. It assists visitors in glorifying Allah by reminding them to follow all of Allah's directives and demands of duty as Muslims, even when they are busy and having fun travelling. In reality, it can live up to the phrase that "finding what is halal is the duty of every Muslim individual," regardless of where they are (Izzuddin and Nadirah 2018).

When compared to the word "Muslim friendly," the term "Shariah compliant" has a more restrictive definition. It is usually preferable to travel to a country that offers halal food and beverages, as well as a Muslim-friendly hotel that is not Shariah compliant. In Muslim-majority countries such as the Middle East, Malaysia, Brunei, and Indonesia, Shariah-compliant hotels may be easy to find. Finding a Shariah Compliant hotel in a non-Islamic country where Muslims are the minority, such as Australia, New Zealand, Japan, Korea, the United Kingdom, and so on, is nearly impossible (Bahli n.d.). To keep Muslims with a high level of religiosity loyal, Shariah Compliant Hotel should provide praying equipment and a separate swimming pool,

spa, and gym, and also position the beds and bathrooms not face the Qibla (Sulaiman et al. 2021).

Muslim Friendly Approach. Academics commonly refer to tourism products and services that cater to the demands of Muslim travellers as “Halal Tourism” or “Islamic Tourism” in the literature. Muslim-Friendly Tourism was previously equated with Halal Tourism in a COMCEC-commissioned study, and was defined as “the activities of Muslim tourists who do not want to sacrifice their faith-based needs while travelling for a permissible purpose” (Commercial Cooperation of the Organization of Islamic Cooperation (COMCEC) 2016).

Muslim-friendly hotels are designed to offer shariah-compliant and comfortable accommodations to Muslim visitors. This is consistent with Islam’s encouragement of excellent hospitality. Despite the fact that Malaysia has almost 3000 hotels, only about 10% of them are designated Muslim-friendly (Siti Syahirah Saffinee et al. 2017).

Muslim-friendly service/facility is refer to a service, a facility, or a destination, it means that it has taken into account some but not all of the faith-based needs of Muslim travellers. While Halal-friendly may also convey the same meaning, Muslim-friendly service/facility is more appropriate (Writer 2016).

Muslim-friendly tourism refers to the tourist segment that caters to Muslim travellers’ faith-based needs. The level to which services are Muslim-friendly varies. This segment is also known by the terms are Muslim travel/Muslim-friendly travel, Muslim tourism/Muslim-friendly tourism, Halal travel/Halal-friendly travel, Halal tourism/Halal-friendly tourism, Islamic travel, Shariah Tourism and Ziyarah Tourism (Writer 2016).

2.1 Dalil ‘Aqli

According to the aforementioned definitions, Syariah Compliant is concerned not only with the operational side, which includes the products and services offered to customers, but it also begins with the initial stage of hotel design and the most important part being to ensure that all financial transactions strictly adhere Islamic law (Nur’Hidayah Che Ahmat and Norrina Din 2013). Shariah-compliant hotels must adhere to overall Islamic rules, which cover everything from capital sources to daily operations (Yusof and Muhammad 2020). The Shariah Compliant hotel can be described as a hotel that provides services in accordance with Shariah principles, which includes not only serving halal food and drink, but also ensuring that the entire operation throughout the hotel is run in line with Shariah principles (Samori and Rahman 2013).

A halal environment will be created by a Shariah compliant hotel as well as providing a safe and healthy living environment for the visitors. It’s merely a matter of selecting the appropriate themes, ambiances, architecture, and interior and external

design elements which might bring Muslims at peace throughout their visit (Samori and Rahman 2013). Halal food represents hygiene, safety, and quality assurance in Islam, requiring that items be prepared in a clean, safe, and proper manner. These standards were met by the JAKIM Halal Certificate (Samori and Rahman 2013).

Consumer perceptions of halal products and services are pleasant, especially when they use them while staying in Shariah-compliant hotels (Shariff et al. 2020). In order to qualify for a Shariah compliant hotel, particular criteria for the hotel industry must be fulfilled. A Shariah-compliant hotel, for example, serves only halal food and does not provide alcoholic beverages. Other regulations must be closely adhered to, such as the hotel having a separate entrance for ladies and separate leisure facilities, such as a swimming pool and a gym for different genders. Furthermore, a Shariah-compliant hotel is obligated to pay zakat on time, and its financial assistance comes solely from Shariah-compliant banking systems. To conclude, Shariah-compliant hotels and their operations must follow Shariah standards (Yusof and Muhammad 2020).

To be classified as Shariah compliant hotel, it must ensure that the entire hotel system, including operations, architecture and finance systems, is Shariah compliant. The hotel must follow Islamic regulations and principles contained in the Quran, Hadith (Prophet Muhammad's practises and sayings), and Muslim legal scholars' opinions (Yusof and Muhammad 2020).

2.2 *Dalil Naqli*

Al Quran & Sunnah. In Islam, the primary goal of travel is to instill a sense of man's insignificance in comparison to Allah's magnificence (Salleh et al. 2019). In total, the word journey appears in 17 verses in the Quran, for example, Surah An-Naml verses 69 and many more in Q27:69; Q29:20; Q6:11; Q30:42 (Salleh et al. 2019).

The Quran has various verses that encourage travel and tourism. "Allah SWT declares.: Travel across the earth and see how Allah SWT created it: thus will Allah produce a later creation: because Allah has power over all things," (20 Surah al-Ankabut) (Samori and Rahman 2013).

"Allah SWT continues declares: Travel over the earth and witness what was the end of those before you: most of them worshipped others except Allah (Surah al-Rum, verse 42)," (Samori and Rahman 2013).

"Allah SWT emphasises in another Surah: Travel over the earth and observe what was the outcome of those who rejected truth," (Surah al-Anam, verse 11).

Touring and travelling are encouraged in this context, and they generally go hand in hand with hospitality (Samori and Rahman 2013). The concept of 'ilm (knowledge) is a major tenet of Islam, and it is still at the forefront of Islamic education. All Muslims, men and women, have an Islamic obligation to pursue knowledge "from cradle to grave," even if it means "travelling as far as China" (Abbas 2018).

He is the one who controlled the earth for you, so wander among its slopes and eat of His provisions, and the resurrection belongs to Him. Verse 15 of Al-Mulk (Salleh et al. 2019).

Alcohol derived from grapes in linguistic terms. This is what the Quran forbids in various verses. As a result, alcohol is categorically prohibited (haraam) and regarded as impure (najis). It is illegal to consume any amount of alcohol, even if it does not cause intoxication (Albattat et al. 2018).

The Prophet Muhammad of Islam informed, “Intoxicants are from these two trees,” pointing to grapevines and date palms. According to the Islamic website Seekers Guidance, alcohol made from dates or raisins is similarly banned, regardless of the amount drunk (Albattat et al. 2018).

Initially, a general warning was issued prohibiting Muslims from attending prayers while intoxicated (Quran, 4:43). Then a second verse was revealed to Prophet Muhammad, declaring that while alcohol had certain medical benefits, its negative effects exceeded the positive ones (Quran, 2:219) (Albattat et al. 2018).

Finally, “intoxicants and gambling” were labeled “abominations of Satan’s handiwork,” reminding self-conscious people not to turn away from God and forget about prayer, and Muslims were instructed to avoid intoxicants and gambling (Quran, 5:90–91) (Albattat et al. 2018).

“It is the duty of every Muslim to host a guest for the night, the Prophet Muhammad SAW once informed. Anyone who visits his courtyard in the morning owes him (hospitality) if he (visitor) asks for his right and if he likes, he may refrain.” (Sunan Abu Dawud) (Samori and Rahman 2013).

The Prophet Muhammad informed his followers “If it intoxicates in a large amount, it is forbidden even in a small amount”. As a result, most practicing Muslims abstain from all types of alcohol, including small amounts used in cooking. (Albattat et al. 2018).

2.3 Commercial Values to Hotel Sectors

The competitive advantage of service sector especially for hotel industry depend on customer experience the value and quality service they offer. The value they offers such as efficiency, service quality, aesthetics, fun, joy, delight and happiness have direct and indirect effects on customer satisfaction and customer loyalty.

Meanwhile commercial value means the fair market value that a goods or services would have if it was offered for sale to the customer. It was the expected value of a goods and services that may be the subject of commercial exchange. It may result, among other things, from average prices charged by unrelated parties on the market or from valuation by a specialist in the field of sales of specific goods. However, the basic principle is that commercial value is an objective amount shaped by factors which are independent of each other.

It is expressed in terms of the value the buyer actually paid for the good or service in question. This is the final confirmation of its value. Therefore there is no commercial

value associated with the free production or transfer of goods, which under normal market conditions would express a certain value in the form of money or equivalent benefit, the so-called barter.

2.4 Economic Values to Hotel Sector

Hotel sector acts as an contributor for economic development and community. Some cases and cities offering the suitable incentives in order to enhancing the process of hotel development.

These incentives can be in the form of tax breaks, favourable land leases or assistance with financing. Prior to establishing incentives for hotel development, a city or municipality should conduct an economic impact study to estimate the economic benefits that results from the development. This assessment should evaluate the economic benefits of the initial investment both in the short term and over the long-term.

Definition of Economic Values. Economic value is a calculation of the profits an asset has either produced or may produce in the future. It is a measure of the benefit a product or service provides an economic agent (person or company).

The highest amount a consumer is willing to pay for a product or service in a free market economy, or in a socialist economy how long a person is willing to wait in order to get a government-provided good or service. This value estimation begins by determining the price the next best competitor(s) charge(s). Then, becomes the reference value.

2.5 Importance of Economic Values

Hotels contribute the output of goods and related services which build well-being of their nations and communities. Visitors spend the hotels and contribute the local economies directly and indirectly. When foreign visitors avail the facilities of these hotels the foreign currency is earned through the visitor's payments. Thus, the hotel activities acts as the important player by giving the economic values such as; (i) the foreign exchange, (ii) generates employment and (iii) creates economic activity.

2.6 Benefits of Economic Values

It is generally accepted that tourism provides considerable economic benefits, such as foreign exchange earnings, employment generation for locals, investment opportunities, tax revenues for government and hotel development and tourism impacts

development of small and medium enterprises for countries, regions and communities but among its notable negative economic impacts are dependence on leakage, infrastructure cost, increase in price and seasonal character for jobs.

The most direct effects occur within the primary tourism sectors -lodging, restaurants, transportation, amusements, and retail trade. Through secondary effects, tourism affects most sectors of the economy (Aqaba 2017). Moreover, according to Sivertzen et al. (2013), economic values refers to the economic benefits such as the earning and compensations that employee received. It also includes with the components such as average earnings, the compensation package, job security and promotion (Reis and Braga 2016).

3 Methodology

The content analysis method was applied in this study to fully understand the economic and commercial value comparison between syariah compliant and muslim friendly approach in hotel industry. There are references to numerous literatures between syariah compliant and muslim friendly approach in hotel industry. The goal of this methodology is to develop or support an argument while also investigating key komponents of syariah compliant and muslim friendly approach in hotel industry. The method in reviewing the literature related document is to understand the concept of economic and commercial value and both approaches as current applied in syariah compliant and muslim friendly hotel industry.

4 Economic Values

There are a lot of challenges that need to be overcome by Muslim travellers when they travel, especially when they visit countries which have less awareness on the need of Muslims upon complying to Syariah law. Islam is very precise when it comes to the can and can't for a Muslim. It does not only cover the aspect of individuals, but also other surrounding aspects. The term Halal, which most of the time is being referred to the status of foods, actually extended beyond that. The term itself that originated from Arabic language, carries the meaning of permissible or lawful as accordance to Islam. As mentioned in Surah Al-Maidah, verse 87, which carries the meaning as follow:

“O believers! Do not forbid the good things which Allah has made lawful for you, and do not transgress. Indeed, Allah does not like transgressors.”

Through the stages of progression of economic values, which start with commodity or raw materials, moving to product, later converted to services and lastly provide experience, both of the approaches, Syariah compliant and Muslim friendly approach, started with the same needs and basis of services, namely hotel services. Both of

the approaches aim to provide the wants of the market. But, due to its foundation, both approaches headed into different directions afterwards. The different directions applied able to provide each segment with different type of advantages that later contribute to differentiation of pricing structure. Based on the approaches on determining the pricing of products or services, be it through the perspective of cost-based pricing or value-based pricing, each of the approaches able to have differentiation in terms of final product pricing. This will, economically, establish a rather different economic structure over the services provided. All of these happened due to the different approach adapted by the service providers.

4.1 Product

As for the Syariah compliant hotel, the products that they presented are almost similar to those of Muslim friendly hotel but different in various other specifications aspects. Previously explained by religious authority on Syariah compliant, quoting from Surah Al-Baqarah, verse 208, which means as follow:

“O believers! Enter into Islam wholeheartedly and do not follow Satan’s footsteps. Surely he is your sworn enemy”

Products under the principle of Syariah compliant should extend beyond selection, rather it must be in an highly obedient level or applied throughout the services. What has been stated clearly under the Syariah law should be follow accordingly, with no option to differ available. Foods, rooms’ specifications and toiletries are among the product of the hotel that need to be prepared accordance to the strict Syariah requirements. As explained by Kedah Islamic Religious Affairs Department’s Halal food auditor, when it comes to preparation of foods for hotels, in order for them to receive Halal status, a lot of strict rules and regulations need to be followed. The food preparation chain, including the status of raw materials, handling methods and arrangements, all of them must abide the standards set by Department of Islamic Development Malaysia, which were constructed based on Syariah law. Products containing any prohibited ingredients, such as alcohol and pork, should not only exist in the preparation of foods, also should not exist in the premise itself, it Syariah compliance is the focus of those hotels. Thus, products-wise, strict and non-compromise compliance is the principled that should be hold by them.

Meanwhile, the situation differs with Muslim friendly hotels, as their approach to product is different. Instead of providing services according to Syariah law in total, they aims to provide much needed necessities of Muslims, by providing option to others. Although they received Halal certification for their foods, they normally segmentized the foods that they prepare, by not dismissing the preparation of non-halal foods. For Muslim friendly hotel, visitors could not expect the hotel of not having any pork or alcohol serving since they also served them except the fact that they separate them. In most Muslim friendly hotel, the products that are essentials to Muslims are being made available, but the specification might be as minimal as

only having them for Muslims. Rooms arrangement for example, as for Muslim friendly hotel, they only will ensure that the room is roomy enough to provide the customers with room to enable them to perform their prayers. But the location of the restroom and whether there is a separate ablution area from the restroom, among others relating to products, will not be the concern of the hotels, rendering the hotel unable to reach the Syariah compliance standard. Still, they able to attract Muslims travellers as their necessities are being made available.

4.2 Service

With the available facilities that comply to Syariah standards, services served by those of Syariah compliance must also follow the strict regulations of Syariah law. It is not an option, rather a must. The services of the hotels, which covers from the moment customer arrive until they depart, according to the principle of Syariah compliance, must follow Syariah law strictly. For example is how to greet the customers which should begin with how the religion asked Muslims to act. Narrated from Abu Hurairah that Prophet Muhammad said that there are six (6) rights of one (1) Muslim over another that begins with the need to greet with salam (greetings) upon meeting another Muslim (Sahih Muslim). Thus, details action as such need to be present, from the arrival of guests until they leave the facilities.

On top of that, dressing code also need to follow strictly the value set by Islam, for Syariah compliance hotel. In Surah An-Nur, verse 30 and 31 had highlighted the need for Muslims to abide the code of dress, for both male and female and left no room for alteration based on the needs and wants of human being. Surah Al-Mu'minun, verse 71 carries such meaning:

“Were the Truth to follow their desires, the order of the heavens and the earth and those who dwell in them would have been ruined. Nay, the fact is that We have brought to them their own remembrance; and yet it is from their own remembrance that they are turning away.”

Based on this verse, it is very clear that when there are guidance, human desires should be guided by them, rather lead them. In recent years, there are issues on dress code of hotel staff where it circulated around the issue of, among others, hijab wearing. Malaysian Association of Hotels (MAH) highlighted that the dress code of hotel staff is determined by the hotel management and the association has no authority to force the hotels to lean to either ways, be it follow or reject the practice of Islamic code of dressing (The Star 2018).

Rather, the service in Muslim friendly hotels focus on, again, making available necessities required by Muslims, but optionally follow or abide the Syariah law. For example, in some Muslim friendly hotels, their dress code is not very strict, as per Syariah law. Rather they adhered to the market and trend references. Will the differences that exist on the services provided give advantages to either of them is a subjective question to be answered. One thing for sure, due to such differences, both of them able to give the guests different experience while were in their hotels.

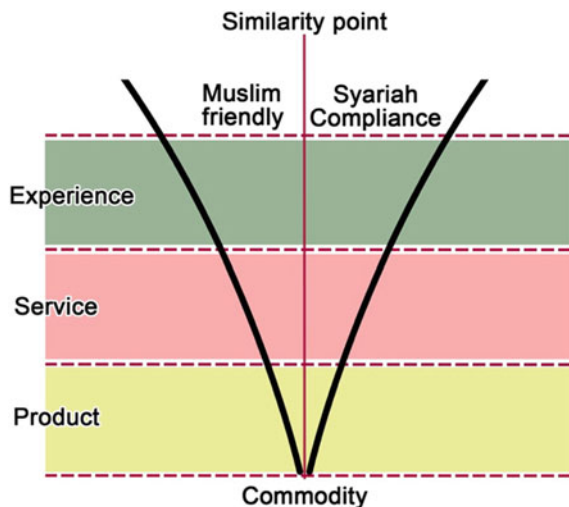
4.3 Experience

Due the differences that exist between the 2 approaches through their products and services, it indirectly has bend the curve of similarities between the 2 approaches even further to each other's (Fig. 1).

The curve of similarities indicate the distance of differences between the 2 types of approaches. Indirectly, it explains that even though both of them begins with almost the same intention, which is to tackle the need of Muslim's guests and travellers, but due to the differences in terms of the products and how the services and products been served, the experience experienced by the guests or travellers is very different. Through some perspectives, the experience is totally not the same in numerous, even though not all, ways. As for Muslim friendly hotel, the economic value that they have able to suit the need of both categories of guests, namely Muslims and non-Muslims by having the fundamental needs of both travellers and compromising on some of the non-fundamental needs of them. While for Syariah compliance hotel, the guests might not be able to experience all aspects of Syariah compliance within the operation of the hotel, for example the financial structure and operations of the hotel, but they might be able to apprehend how the hotels should operate if Syariah is their main guidance on their operations. On top of that, they can also expect all of the Syariah compliance hotel share the same exact values on their services, which is different from the Muslim friendly hotel.

To put the question of which one is better than the others is inappropriate as based on the approach of economic value, each of them owns special advantages over the others and the value will depend on how appreciative are the guests towards them. But one thing for sure, both of the approaches offers Muslims travelers what they need, in terms of products and services.

Fig. 1 Curve of similarities between Muslim friendly and Syariah compliance approach on hotel sector



4.4 Commercial Value

Looking into the economic value of both approaches on hotel services, it can be seen that both of them, although share the same intention, but in penetrating the matter, the direction taken is very different. Maqasid Syariah approach emphasizes on producing benefits and prevent harms towards all. By definition, Maqasid Syariah means:

“Purposes, meanings and wisdoms set by Shari’ah Islamiyyah in the sanctioned rulings as well as the secrets behind it with the purpose of protecting the welfare of humans (Tarmizi 2019).”

In simple, Maqasid Syariah functioned in the way of protecting the needs of human being according to the guidelines of Islam. It, Maqasid Syariah, could be divided into 3 sections namely Maslahah Dharuriyyah, Maslahah Hajiyyah and Maslahah Tahsiniyaah. Table 1 below explains on the 3 sections of Maqasid Syariah:

Figure 2 illustrates the availability level of needs based on Maqasid Syariah in both approaches of hotel services. It can be seen that the difference is obvious, in terms of the need to make the services available. For Syariah compliance, as per discussed earlier, the compliance over the rules and regulation under Syariah law is a must and throughout as compared to the Muslim friendly hotels, which is different on their response on it. That is one of the reasons why in making available needs

Table 1 Concepts of sections of Maqasid Syariah

Type	Concept/meaning
Dharuriyyah	Basic necessities of human being, which is crucial in the life of human being. The absent of these necessities will put life in danger
Hajiyyah	The needs of human being that able to alleviate hardship and difficulties of human
Tahsiniyaah	Needs of human being that able to refine and beautify life

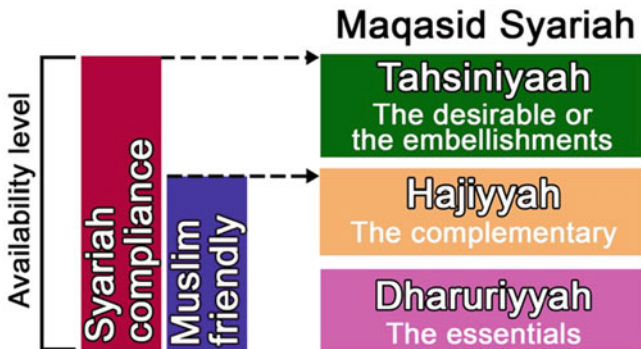


Fig. 2 Maqasid Syariah adoption level between Muslim friendly and Syariah compliance hotels

under Maqasid Syariah, the response are different between the 2 approaches and affect the curve of similarities between the 2 approaches.

The differences that exist eventually influence the economic values possess by each approach, which indirectly affect the commercial value of the services. With available recognition, for example from Islamic Tourism Centre (ITC), even though not from authority bodies, it able to enhance the value of Muslim friendly hotels. Categorisation of silver, gold and platinum categorisation of Muslim friendly hotels able to provide guests and travellers idea on the level of compliance over Syariah law by these hotels. Higher ranking means that more Syariah requirements are complied by the hotels, as compared to the lower tiers, but it still does not carry the meaning of that hotels complied completely Syariah law to render them Syariah compliance hotel. Even so, the commercial values that they hold are comparable between those other hotels that fall under the same exact categories and they have higher values in the eyes of Muslims guests and travellers as compared to the other hotels, which status in not within that realm. But, as for Syariah compliance hotel, since there is no comparative value that can be made, due to unavailability of recognisable references and recognitions, it is very challenging to find a correct value that it can fall under. But, one thing which is certain is it holds a very significant value to Muslim world as it follows every single aspect of services that is guided by Syariah law to the core. The value, from Islamic point of view, commercially, is at the highest level as it is the example of total compliance of Allah's orders.

5 Conclusion

Comparatively, Syariah compliance hotels focus on obeying in total to the Syariah law, meanwhile for Muslims friendly approach focus on providing the needs of Muslims, but still totality in abiding Syariah law is not. Comparatively, even though both of them able to assist Muslims with their needs, still the differences are obvious in terms of economic values, rendering impossibility of categorising them in the same exact league. Nevertheless both of them hold special commercial values to Muslim guests at large, even though one of them is yet to be able to be compared to.

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Developing a Conceptual Framework: The Case of Gastronomic Tourism in Malaysia Among International Tourists from the United Kingdom



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Abstract Gastronomic tourism is becoming popular among tourist destinations because most of the tourists visiting the destination are to explore and taste the local cuisine. Malaysia has an advantage in this niche tourism market because it consists of several residents such as Malays, Chinese and Indians. However, this country indicates an unfavourable condition of tourist arrivals. Hence, the present study proposes a new conceptual model comprising four constructs: perceived value, local food-related motivation, food satisfaction, and destination loyalty to mitigate the issue of destination loyalty among international tourists from the United Kingdom visiting Malaysia for gastronomic tourism. This model is crucial to serve as a guideline for tourism management, restaurant owners, and food event organizers to maximize tourists' experience and motivation, thereby increasing international tourist arrivals to this country.

Keywords Perceived value · Local food-related motivation · Food satisfaction · Destination loyalty · United Kingdom

1 Introduction

1.1 Gastronomic Tourism in Malaysia

Nowadays, globalization has made the world more 'connected,' and travelling from one destination to another seems plausible with the development of infrastructure technologies (Cham et al. 2021). Before their visit, they would be able to search for

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the best tourist destination through the internet. This situation makes the competition among the destinations more intense. Hence, any destination that would cater to tourists' need and want during their visit would be able to sustain long in this competition.

Local food is an important component of tourism because it attracts foreign tourists to visit the tourist destination. In other words, food is pivotal for the growth of the tourism and hospitality industries. The tourists who travel for food to a certain destination is called gastronomic tourism or food tourism. Gastronomic tourism is referred to as the exploration of food as the purpose of tourism (Son et al. 2016). The tourists will appreciate the culture of a certain destination by tasting and experiencing local foods. Tsai (2016) claimed that the tourists would develop a memorable experience when they enjoy local dishes because local foods are highly related to local cultures and traditions. One of the popular destinations in the Asia Pacific and Asia is Malaysia (Nasir et al. 2021). The main advantage that Malaysia possess is multiracial residents such as Malays, Chinese, Indian and others. Therefore, this country provides a unique experience to foreign tourists because the tourists would taste and experience a wide range of menus such as nasi lemak, nasi kandar, hakka noodles, and many more. This provides an avenue for cultural and traditions exchange between tourists and local residents through local foods. However, with the stiff competition with the neighbouring countries, especially in South East Asia, Malaysia experiencing an unstable and declining movement of international tourist arrivals from 2010 until 2019 (Tourism Malaysia 2021). Hence, it is crucial to improve the destination loyalty among international tourists visiting Malaysia because loyal tourists will demonstrate repeat visits and spreading positive words mouth to the destination (Mohamad et al. 2019). When the tourists repeat visits to a similar destination from time to time, this will increase the arrivals to Malaysia every year. Moreover, spreading positive words of the mouth such as telling about positive experience visiting the destination to family members and friends will encourage more tourists to visit this country. However, this study focuses on international tourists from the United Kingdom visiting Malaysia. The selection of this target population because of two criteria (1) the number of repeat visits is lesser than first time visit in 2019 (Tourism Malaysia 2021), indicating a problem in terms of destination loyalty (2) they are western tourists who have different cultures and traditions as compared to Malaysia, this important for cultural exchanges through gastronomic tourism. This study intends to promote gastronomic tourism in Malaysia in order to cater to international tourists from the United Kingdom visiting this country. Hence, it is important to identify the predicting factors that gauge the development of destination loyalty among tourists. In the previous studies, several constructs were found as factors affecting destination loyalty, such as perceived value (Huang et al. 2019), local food-related motivation (Levitt et al. 2017), and food satisfaction (Chen and Huang 2019). Unfortunately, these constructs were tested separately, which does not provide a better picture of how these factors affect destination loyalty. Therefore, the study intends to bridge the research gap of previous studies by integrating all of these latent constructs in one research framework. Hence, the study's main objective is to develop a new conceptual model consisting of perceived value, food-related motivation, food satisfaction, and destination loyalty among international tourists from the United Kingdom visiting Malaysia for gastronomic tourism.

2 Literature Review

2.1 Destination Loyalty

In marketing, the concept of destination loyalty is an essential measure for a tourist destination's success. Chen et al. (2020) claimed that destination loyalty refers to tourist's intention to revisit and recommend the destinations to others. Based on this definition, it indicates that destination loyalty comprises an attitudinal and behavioural component. Lacap (2019) claimed that behavioural approach refers to obtaining a tourism product or service or a repeated manner among tourists to the destination. Meanwhile, attitudinal loyalty is seen when the tourists practice a positive attitude and intend to suggest to the potential tourists about the destination. In the context of gastronomic tourism, when they had a wonderful experience visiting the destination, such as exploring local dishes, tasting delicious local foods, and participating in food events, it will initiate their intention to revisit and recommend and share their experience with families and friends.

Therefore, a better understanding of the concept of destination loyalty has been the focus of many industrial players and researchers in the past few years to develop a benchmark for establishing sustainable business strategies (Oppermann 2000).

2.2 Perceived Value

The concept of perceived value is researched mostly in the marketing field, but this concept has begun to be included in tourism literature (Huang et al. 2019). Perceived value is related to the tourists' sacrifice, which comprises monetary and non-monetary to receive a product or service (Wen 2011). This definition highlighted important components, namely monetary and non-monetary. Monetary refers to the financial spending on transportation, entertainment, foods and beverages, and accommodations during their stay to a certain destination. Meanwhile, non-monetary relates to the sacrifice of time and energy of tourists for a particular trip. On the other hand, (Jahanzeb et al. 2013) stated that the perceived value was a comprehensive concept of examining tourists' cognitive and practical perceptions. Based on these two definitions, the present study defined perceived value as examining tourist's cognitive and practical perceptions based on their sacrifice on the monetary and non-monetary during the exploration of foods in one particular destination.

Perceived value was proven in the past studies as the predictor of destination loyalty (Nasir et al. 2021; Huang et al. 2019). Apart from directly affecting destination loyalty, this construct also significantly impacts satisfaction (Chen and Lin 2019; Konuk 2019). Based on the background of the past studies, the present study proposes two hypotheses:

H1a: Perceived value directly and positively affects the destination loyalty

H1b: Perceived value directly and positively affects the food satisfaction

2.3 *Local Food-Related Motivation*

Tourists travel to a specific destination due to motivation (Ngwira and Kankhuni 2018). Any travel-related activities started with motivation (Nikjoo and Ketabi 2015). Dann (1981) claimed that motivation is a meaningful state of mind that sufficiently disposes of a people or a group of individuals to travel to a certain destination. Based on this definition, it can conclude that motivation is the desire of tourists to receive something from their visit, such as learning and tasting local dishes available at a certain destination, which then fulfils tourists' needs and wants during their trip. Ji et al. (2016) states that food consumption can be one of the activities that tourists want to participate in during their trip, and it can be one of its travel's motives.

Lacap (2019) and Levitt et al. (2017) claimed that tourists with a high level of motivation in food in a destination have the greatest desire to taste local cuisine and demonstrate a high level of loyalty towards the local cuisine. Moreover, (Lacap 2019; Agyeiwaah et al. 2019) found that motivation is directly affects the food satisfaction. Hence, two more hypotheses are introduced:

H2a: Local food-related motivation directly and positively affects the destination loyalty

H2b: Local food-related motivation directly and positively affects the food satisfaction

2.4 *Food Satisfaction*

The concept of tourist satisfaction is widely studied in the existing marketing literature. Satisfaction is about comparing real perceivable benefits and expectations (Tran et al. 2018). Hence, when the actual benefits meet or exceed tourist's expectations, then they will be satisfied. However, the study of the concept of satisfaction specifically towards food is limited. Hence, the study would examine the concept of food satisfaction related to the favourable response of a visitor to their tourism experience in a food destination.

Food satisfaction is also found to have a direct impact on destination loyalty (Chen and Huang 2019; Lacap 2019). Besides, previous studies found that satisfaction mediates the relationships between perceived value, food-related motivation and destination loyalty (Lacap 2019; Keshavarz and Jamshidi 2018). Therefore, three more hypotheses are proposed in this study:

H3: Food satisfaction is directly and positively affects destination loyalty.

H4: Food satisfaction mediates the relationship between perceived value and destination loyalty.

H5: Food satisfaction mediates the relationship between local food-related motivation and destination loyalty.

Therefore, based on the proposed hypotheses, a new research model is developed (see Fig. 1). Perceived value and food-related motivation are the independent variables and one mediator is food satisfaction. In this model, there is only one dependent variable, namely, destination loyalty.

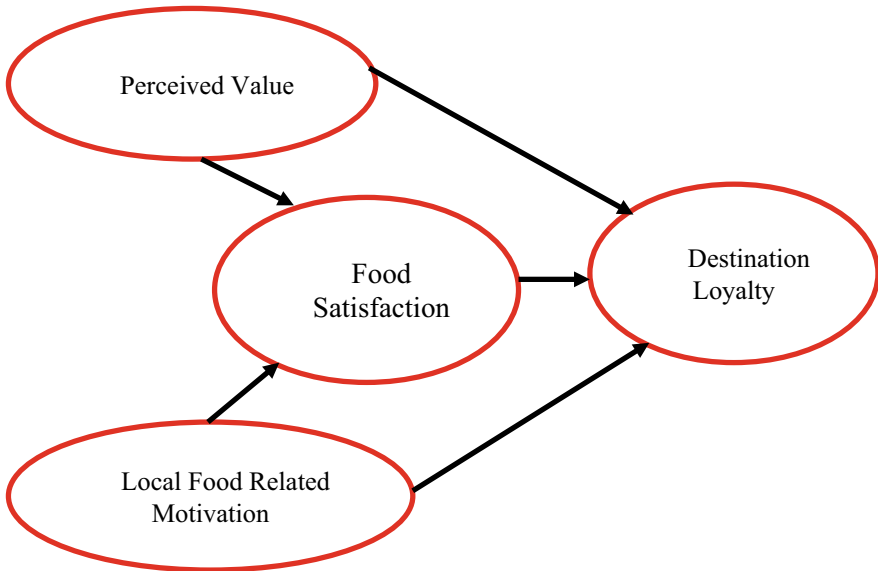


Fig. 1 Proposed research model

3 Implications of the Study

Theoretically, the current study proposed a new conceptual model consisting of four latent constructs: perceived value, local food-related motivation, food satisfaction and destination loyalty. The new proposed model suggested five direct paths and two mediating paths that can be tested in Malaysia’s gastronomic tourism. This is considered a new contribution since a limited number of the study integrated these constructs in a single model. Furthermore, the study also selected a specific population with a totally different culture, belief, and background: international tourists from the United Kingdom. The findings will be interesting to be discussed since the western tourists from the United Kingdom will be delighted to learn, taste and participate in food events and restaurants that serve local dishes in Malaysia.

Practically, the study’s outcome is expected to provide valuable information towards tourism management, food event organizers and restaurants owners. Marketing efforts by tourism management should be geared towards developing Malaysia as a local food destination. Some of the efforts should be undertaken by the food event organizers in this country to organize food festivals to introduce local foods to international tourists. This effort will initiate motivation among international tourists from the United Kingdom to visit Malaysia. Restaurant owners also should promote local foods through the internet and during tourists visit this country by serving a variety of local cuisine and providing international tourists with the opportunity to learn how to prepare local cuisine. This effort will cause them to feel worth in terms of money and time to visit this country. Hence, highly motivated tourists and they value visiting this destination more than the sacrifice they made in terms of money and time on local food will lead to high satisfaction. Consequently, they will be loyal to this country due to its fantastic local foods.

4 Conclusion

The study's main objective is to propose a new research model comprising two independent variables: perceived value and local food-related motivation, one mediator: food satisfaction and one dependent variable: destination loyalty. The study's target population is the international tourists from the United Kingdom visiting Malaysia for gastronomic tourism. However, this study is just a research proposal whereby to confirm the relationship between the constructs; it is recommended that future research execute the data collection among the respondents. Hence, the data collected will confirm the interrelationships between the constructs by analyzing them using Structural Equation Modelling (SEM).

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Preliminary Study on Factors Influenced the Occupational Safety and Health (OSH) Compliance on the Malaysian Firefighters



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Abstract Some factors of safety culture including hazard risk assessment, employee involvement and management commitment have been identified that could reduce occupational accidents and injuries at the workplace. The failure to follow occupational safety and health compliance (OSHC) has become an issue that increases occupational accidents and injuries among firefighters at the workplace. Therefore, the objective of this preliminary study was to identify the main factor of safety culture that influence occupational safety and health compliance (OSHC) among firefighters in the Fire and Rescue Department of Malaysia (FRDM). The study was conducted using online questionnaires. The questionnaires were distributed to firefighters who worked in FRDM. This study used two types of analysis were descriptive analysis and internal consistency analysis to answer the research objectives. The results show that the questionnaire of study has the highest reliability and validity of Cronbach's alpha. The highest Cronbach alpha value represented by co-worker support (CWS) was 0.92, followed by organizational commitment (OC) was 0.87, personal protective equipment (PPE) was 0.86, and occupational safety and health compliance (OSHC) was 0.83. The findings indicated that the excellent values of internal consistency analysis in the preliminary study on OSHC from the perspective of firefighters in Malaysia.

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Keywords Occupational safety and health compliance · Organizational commitment · Co-worker support · Personal protective equipment · Firefighter

1 Introduction

Occupational safety and health compliance (OSHC) refer to performing jobs safely to continue workplace safety by complying with safety rules and using personal protective equipment at the workplace. Occupational safety and health compliance (OSHC) are essential elements of control for organizational improvement to improve the safety and health effect in an organization (Guo et al. 2019). Several researchers stated occupational safety and health compliance (OSHC) include employee behaviors and attitudes that enhance their safety and health and also could be considered part of the employee's work role at the workplace (Fernández-Muñiz et al. 2017). It is an important aspect to reduce workplace accidents and injuries research about occupational safety and health compliance (OSHC) has become a topic of interest in safety research (Puah et al. 2016).

Studies on safety culture have been explored in many industries and organizations in Malaysia (Abdullah 2010; Makhtar 2018; Rahlan 2020). The studies on safety culture have been increasing recently in many occupational sectors. It was an important employment issue that needs to be tackled because of the implications it brings to organizations (Makhtar et al. 2018a). However, less focus has been given to occupational safety and health compliance (OSHC) studies conducted and explored in the context of Malaysia' fire service. The issue that has been identified most consistently as the leading cause that reducing firefighter accidents and injuries are adjustments in the usual fire service culture regarding following the procedures, using personal protection equipment (PPE) and working risk reduction at the workplace (Davis et al. 2020; DeJoy et al. 2017; Maglio et al. 2016; Smith et al. 2016). The failure to follow occupational safety and health compliance (OSHC) be able accidents, injuries or death of the workers and cause damage to work equipment and the workplace (Ayi and Hon 2018; Huising and Silbey 2013). Due to uncertain factors from previous studies, the objective of this study was to identify the main factor of safety culture that will affect occupational safety and health compliance (OSHC) among firefighters in Malaysia' fire service. Firefighting is considered one of the most stressful and dangerous occupations from previous studies (DeJoy et al. 2017; Campbell, R.: U.S. 2018; Kunadharaju et al. 2011; Pessemier and England 2012; Taylor et al. 2019). Firefighters perform fire prevention activities, extinguish fires, emergency medical services, respond to hazardous material, search and rescue operations assist with disaster recovery and relief efforts (Smith et al. 2016). They are directly involved with dangerous environments and situations, which encounter to most occupations that seek to avoid risks and exposed to hazards and accidents in their workplace (NFPA 2008). Studies in the area of occupational safety and health compliance (OSHC) became prominent during the past three decades. Its

main objective is to predict safety-related outcomes such as accidents and injuries to deliver valuable direction for improving safety in organizations (Makhtar et al. 2019).

In fire service, occupational safety and health compliance (OSHC) discuss the principle of safety activities that firefighters must carry out to sustain safety at the workplace such as following safety rules and procedures and using personal protective equipment (PPE) properly by putting on safety equipment or using proper safety gear, firefighters can protect themselves while at work (DeJoy et al. 2017; Maglio et al. 2016; Haller and Smith 2019; Smith et al. 2019). Personal protective equipment (PPE) could protect themselves from exposure to accidents and injuries as a whole in the workplace (Makhtar et al. 2018b).

The commitment to the organization is a vital element in the success platform in any organization. The previous studies found organizational commitment (OC) has a significant relationship with OSHC (Makhtar et al. 2018a; Mohd Zaidi et al. 2016; Chong et al. 2017). Meanwhile, the studies found organizational support and commitment to employee safety and quality of exchange between supervisors and subordinates' safety behavior and reduced accidents and injuries at the workplace. The findings show that the organization's strong commitment to workplace safety has the same interest with each other relating to their life within their workplace and outside co-worker support refers to a group of employees that works together and interacts in a workplace (Puah et al. 2016). The social support theory first proposed the interaction of employees with superiors and co-workers. According to the social exchange theory, subordinates would work better to reward organizations, including increased occupational safety and health compliance and safety participation (Kaufman et al. 2014). Therefore, the higher safety support from a co-worker was associated with more increased occupational safety and health compliance (OSHC). The findings show that employees who positively perceive co-worker support for protection would conduce higher OSHC (Guo et al. 2019). The previous study from Puah et al. (2016) found that employees' probability of improving workplace safety increases if they receive higher support from co-workers. Meanwhile, the finding from Fernández-Muñiz et al. (2017) also emphasized the importance of co-worker support (CWS) in promoting occupational safety and health compliance (OSHC).

Therefore, the structure of this preliminary study included, Sect. 1 discusses the findings of OSCH in the occupational sector from the literature review. The literature review shows that less of study about OSHC in the Malaysia fire services and also explain the issue of incidents and injuries among employees at the workplace. Section 2 consists of methodology that explains about sample of the study and instrument of the study. Section 3 included results and discussion that explains the demographic profile of respondents, descriptive analysis and internal consistency analysis. Next, Sect. 4 explain the limitations of the study and suggestions and lastly, Sect. 5 discuss the conclusion of the preliminary study.

2 Methods

2.1 *Sample of the Study*

This study was a quantitative study that used questionnaires survey for data collection. The preliminary study was conducted by an online survey of firefighters who worked at the Fire and Rescue Department of Malaysia (FRDM). A set of questionnaires was distributed to a sample random of 50 firefighters as the respondent in the preliminary study. The preliminary study sample size depends on the objective of the preliminary study. Johanson and Brooks (2010) suggested the minimum number of respondents for the preliminary study is 30 people. It is appropriate for the minimum sample size in the preliminary study. Meanwhile, (Cooper and Schindler 2011) also suggested the appropriate number of respondents to answer and complete the questionnaire in the preliminary study was from 25 to 100 people. Therefore 50 firefighters were selected as a minimum sample size for the preliminary study. The data in the preliminary study was analyzed using Statistical Package of Social Science (SPSS). The descriptive statistics and internal consistency analysis were used to answer the preliminary study objectives.

2.2 *Instrument of the Study*

The respondents who consented to participate in the preliminary study were given a link to the online questionnaire by e-mail. According to Creswell (2012), p. 165 “the use of online or internet is a viral method has used by researchers to distribution online questionnaires in the study survey”. This method can help respondents answer the questionnaire quickly and send back the researcher’s completed questionnaire.

The respondents were asked to answer and complete 25 questions in a set of questionnaires in this study. The questionnaire consists of three (3) namely, sections A, B and C. Firstly, section A is demographic profile consists of five variables such as gender, race, age, grade and level of education. This section was used a nominal scale. “A nominal scale allows the researcher to assign subjects to certain categories and groups” (Sekaran and Bougie 2016), p. 207. Section B contained 15 questions to measure the perception of firefighters about three elements of safety culture are organizational commitment (5 items), co-worker support (5 items) and personal protective equipment (5 items) as independent variables in this study. Finally, section D contained five (5) questions to measure the level of occupational safety and health compliance (OSHC) as the dependent variable in this study.

For the two sections (B and C), the respondents were asked to answer each item using an ordinal scale of a five-point Likert scale ranging from “1: strongly disagree to 5: strongly agree”. The Likert scale is a scale designed to perceive how strongly respondents agree with a statement with the categories (1) strongly disagree, (2) disagree, (3) neither disagree, (4) agree and (5) strongly agree (Sekaran and Bougie 2016; Kumar et al. 2013). All constructs were measured based on scales developed by previous researchers. Organizational commitment was measured based on a scale developed by Chong et al. (2017), co-worker support was measured based on a scale developed by Puah et al. (2016), personal protective equipment was measured based on a scale developed by Makhtar (2018) and occupational safety and health compliance was measured based on a scale developed by Vinodkumar and Bhasi (2010). All of the variables have measured by five items. The summary of the questionnaire in this study as the Table 1 below.

Table 1 Summary of the questionnaire

Part	Variable	Item	Sources
A	Demographic profile		
	A1. Gender	1	
	A2. Race	1	
	A3. Age	1	
	A4. Grade	1	
	A5. Education level	1	
B	A6. Working experience	1	
	Elements of safety culture		
	B1. Organizational commitment	5	Chong et al. (2017)
	B2. Co-worker support	5	Puah et al. (2016)
	B3. Personal protective equipment	5	Makhtar (2018)
D	Occupational safety and health compliance	5	Vinodkumar and Bhasi (2010)
Total		25	

3 Result and Discussion

3.1 Demographic Profile of Respondents

Table 2 shows the demographic profile of respondents of 50 firefighters involved in this pilot study. The category of gender represented by 50 (100%) firefighters are male. Followed by the type of race described by 50 (100%) firefighters are Malay. The age group of the firefighters, 18 firefighters were from the age range from 41 to 50 years old with the percentage of 36.0%, 17 firefighters were from the age range from 31 to 40 years old with the percentage of 34.0%, 12 firefighters were from the age range from 19 to 30 years old with the percentage of 24.0%, and lastly, 3 firefighters were from the age range of 51–60 years old with the percentage of 6%.

Table 2 Demographic respondent

Variable	Category	Frequency	Percentage (%)
Gender	Male	50	100
Race	Malay	50	100
Age	19–30 years	12	24.0
	31–40 years	17	34.0
	41–50 years	18	36.0
	51–60 years	3	6.0
Grade	KB 19	29	58.0
	KB 22	13	26.0
	KB 24	1	2.0
	KB 28	1	2.0
	KB 29	2	4.0
	KB 32	1	2.0
Level of education	KB 38	3	6.0
	SPM	38	76.0
	STPM	1	2.0
	Diploma	7	14.0
Working experience	Bachelor degree	4	8.0
	1–5 years	11	22.0
	6–10 years	6	12.0
	11–15 years	6	12.0
	16–20 years	14	28.0
	21–25 years	6	12.0
30 years and above	7	14.0	

The grades group of the firefighters showed that 29 firefighters from the grade KB 19 with the percentage 58.0% represented the highest number of firefighters in this study. Followed by 13 firefighters KB 22 with the percentage 26.0%, 3 firefighters from the grade KB 38 with the percentage 6.0%, 2 firefighters from the grade KB 29 with the percentage 4.0% and lastly 1 firefighter from the grade KB 24, KB 28 and KB32 representative with the percentage 2.0%.

The level of education, 38 firefighters, has the qualification of Sijil Pelajaran Malaysia (SPM) with the percentage 76.0%, 7 firefighters have the Diploma with the percentage 14.0%, 4 firefighters has the Bachelor Degree with the rate 8.0% and 1 firefighter has the qualification of Sijil Tinggi Pelajaran Malaysia (STPM) with the percentage 8.0%. The number of working experiences showed that 14 firefighters had worked from the range between 16–20 years with the percentage 28.0%, 11 firefighters had worked from the range between 1–5 years with the percentage 22.0%, followed by 7 firefighters had worked from the range between 30 years above with the percentage 24.0% and 6 firefighters had worked from range between 16–20, 11–15 and 21–25 years represented with the percentage 12.0%.

Based on the findings, this study has concluded that the firefighters working from 16 to 20 years with the percentage 28.0%, had more awareness about occupational safety and health compliance (OSHC). The result shows that they were still sustainable in knowledge about occupational safety and health compliance (OSHC) and still considered about safety in the workplace. The firefighters working from 1 to 5 years shows that they are also aware of occupational safety and health compliance (OSHC). It indicated that they are still fresh in knowledge and ready to follow the procedures and policies of occupational safety and health compliance (OSHC).

The last one, at 14.0% of firefighters, worked from the range between 30 years and above. The result shows that experienced firefighters also followed the occupational safety and health compliance procedures even though they worked for more than 30 years Fire and Rescue Department of Malaysia (FRDM).

3.2 Descriptive Analysis

Table 3 shows descriptive analysis between the independent variables and independent variables in this preliminary study. The descriptive analysis consists of the

Table 3 Descriptive statistics

	N	Min	Max	Mean	Std. deviation
Management commitment (MC)	50	4.00	5.00	4.53	0.41
Co-worker support (CWS)	50	3.20	5.00	4.49	0.48
Personal protective equipment (PPE)	50	4.00	5.00	4.60	0.40
Occupation safety and health compliance (OSHC)	50	4.00	5.00	4.68	0.37
Valid N (list wise)	50				

elements such as maximum, minimum, means and standard deviation, which provide descriptive information about a set of data (Sekaran and Bougie 2016).

For preliminary study, the descriptive analysis comprises the result of maximum score for all variables were 5.00 from five-point scale. The value of minimum score for co-worker support was 3.20 from five-point scale. Meanwhile, the value of minimum score for three variables such as management commitment (OC), personal protective equipment (PPE) and occupational safety and health compliance (OSHC) have the same value was 4.00 from five-point scale.

Meanwhile for the value of maximum score indicated that all variables were 5.00 from five-point scale. Followed the value of mean score indicated that the highest value was 4.68 from five-point scale for occupational safety and health compliance (OSCH), second was 4.60 from five-point scale for personal protective equipment (PPE), third was 4.53 from five-point scale for Management commitment (MC) and last one was 4.49 from five-point scale for co-worker support (CWS).

Lastly, for value of standard deviation reported that the highest value was 0.48 from five-point scale represented by co-worker support (CWS), followed the second value was 0.41 from five-point scale represented by organizational commitment (OC), third value was 0.40 from five-point scale represented by personal protective equipment (PPE) and lowest value was 0.37 from five-point scale represented by occupational safety and health compliance (OSCH).

From the results, it can be concluded the firefighters in the FRDM agreed with the questions related to occupational safety and health compliance (OSHC) where the value of mean score was 4.68 from five-point scale. The value of the mean score almost reaches the 5.00 value of the maximum score. Followed by personal protective equipment (PPE), co-worker support (CWS) and organizational commitment (OC), where the value of mean score for the three variables was 4.60 from five-point scale, 4.53 from five-point scale and 4.49 from five-point scale. It also indicated that the value of the variables also almost reaches the 5.00 value of the maximum score and proven the respondents agreed with all questionnaires in the preliminary study. Therefore, it can be concluded all questions in the preliminary study have an excellent mean score average from 4.49 to 4.68 from five-point scale.

3.3 Internal Consistency Analysis

Table 4 shows the results of the internal consistency analysis for preliminary study. Conducted internal consistency analysis was to indicate how well the items measure all variables in the study (Sekaran and Bougie 2016). Thus, the study used Cronbach's alpha to measure internal consistency analysis for preliminary study.

The result indicated that the values of Cronbach alpha for co-worker support was 0.92, organizational commitment was 0.87, personal protective equipment was 0.86 and occupational safety and health compliance was 0.83. This means, all variables in preliminary study have good values of internal consistency analysis. It can be proved that the all variables Cronbach alpha value exceeded 0.80 value of Cronbach

Table 4 Internal consistency analysis

Variable	Number of item (N)	Cronbach's Alpha
Management commitment (MC)	5	0.87
Co-worker support (CWS)	5	0.92
Personal protective equipment (PPE)	5	0.86
Occupation safety and health compliance (OSHC)	5	0.83

alpha. This findings in line with supported by Vinodkumar and Bhasi (2010) stated the internal consistency value of 0.70 and above is considered to be the criterion for demonstrating strong reliability of established scale. Besides that, (Hair et al. 2017) suggested the value of internal consistency greater than 0.60 is accepted and the deals between from 0.70 to 0.90 as satisfactory. Therefore, followed by the rules of thumb the internal consistency of scale by previous researchers, the internal consistency value of the questionnaires in preliminary study as good satisfactory.

Furthermore, the finding indicated that the main element of safety culture that influenced occupational safety and health compliance (OSHC) was co-worker support. This findings in line with supported by Puah et al. (2016) found that the employees' probability of improving workplace safety increases if they receive higher support from co-workers. Therefore, the higher safety support from co-worker support (CWS) was associated with more increased occupational safety and health compliance (OSHC).

Followed by organizational commitment (OC) and personal protective equipment (PPE) also were found that influenced occupational safety and health compliance (OSHC) in preliminary study. This findings also parallel with the previous studies have found the organizational commitment (OC) has a significant relationship with occupational safety and health compliance (OSHC) in many occupational sector (Makhtar 2018; Subramaniam et al. 2017). A few studies in Fire Service completed identifying the elements of occupational safety and health compliance OSHC that influenced firefighters, such as following safety rules and procedures and using personal protective equipment (PPE) properly (DeJoy et al. 2017; Maglio et al. 2016; Smith et al. 2019). Thus, this means preliminary study need to highlighted the elements of safety culture that management should note in order to improve the level of occupational safety and health compliance (OSHC) effectively.

4 Limitations of the Study and Future Research

The first limitation of the preliminary study is the sample size. The preliminary study covers only a small amount of sample size. According to Johanson and Brooks (2010) the minimum number of the study are 30 respondents. The sample size in this preliminary study only consists of 50 firefighters as respondents. Therefore, future research should consider actual data to examine the actual study about the factors

that influenced occupational safety and health compliance (OSHC) in Malaysian firefighters.

Second, the preliminary study used a specific time to collect the data. The findings of the preliminary study reflect only a particular result in the time. For future research should consider longitudinal studies from different theoretical in an attempt to understand the occupational safety and health compliance (OSHC) in Malaysian firefighters.

Lastly, the limitation of the preliminary study is the usage of instrument surveys. The online questionnaire was used as the main instrument to collect the data. It was sent through e-mail to the respondents. The respondents have answered all questions and send back the questionnaire completed. The problem will arise due to an unstable network and limited network access. Therefore, future research should consider using various types of instruments such as interviews, observation and field experiments based on the suggestion from Sekaran and Bougie (2016) and Kumar et al. (2013).

5 Conclusion

The preliminary study answered all the research objectives. The first objective is to identify the main factor of safety culture that influenced occupational safety and health compliance among FRDM firefighters. The second objective is to determine the internal consistency reliability of questionnaire to measure the independent variables (organizational commitment, co-workers support and personal protective equipment) and the dependent variable (occupational safety and health compliance).

From the results, the main factor of safety culture that influenced occupational safety and health compliance (OSHC) was co-worker support. Followed by organizational commitment and personal protective equipment also found that influenced occupational safety and health compliance (OSHC). As conclusion, the data collected were valid and enough to analyzed the preliminary study. Therefore, the questionnaire in the preliminary study can be used for further study. For further study, the researchers suggested that organizations need to emphasize on co-worker support in order to reduce occupational accidents and injuries in the workplace.

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Halal Tourism: A Debate Between Its Religious Values and Business Interest; A Case of Malaysia



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Abstract Tourism industry plays a critical role in propelling a country's economy. It is undeniable that most countries targeted to accelerate their revenue through the tourism industry and hotel sector. It is undeniable that halal tourism has become among the top agendas in worldwide tourism due to the growing number of Muslim travellers. This situation resulted in significant foreign earnings. As a Muslim-majority country in the world, Malaysia is striving very hard to be the best in this industry. In this vein, this paper is dedicated to study the real intention behind the acceptance of this market by the industry players and the public authorities who are responsible for the establishment and implementation of the policies and standards of this industry. Two main concerns are the surrender of religious obligation or business profit-making strategy. A qualitative study by way of interviewing public authorities' officials and hoteliers was employed to have a clear reaction in answering this doubt. A doctrinal analysis was also employed as a main research methodology by referring to reliable authoritative sources such as government policies and standards to strengthen the analysis done. The findings showed that Malaysia enjoys a great Halal tourism potential. Unfortunately, it is still far-reaching agenda, and much more to be exploited. Analysis of the data also seems to suggest a contradictory intention between the public authorities and the industry players. The former inclines towards promoting Islam as a way of life as to uphold the slogan of Malaysia as leader in Halal hub whereas for the latter, their utmost concern is equally divided between religious obligation and business interest. Hence, this paper opens new research avenues by making significant contributions in giving clear ideas to the more practicable framework, policies, and standards given consideration of balancing the industry players' religious obligation and business interest.

Keywords Halal tourism · Malaysia · Religious obligation · Business interest

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1 Introduction

According to a report issued by Thomson Reuters and Dubai-based growth strategy and advisory firm Dinar Standard, “Digital Islamic Economy Report”, in 2014 Muslim travellers spent US\$ 107 billion globally and it grew to US\$ 151 billion in 2015 (*Thomson Reuters Digital Islamic Economy Report* Thomson Reuters 2015). This figure of Muslim spending is estimated to raise more in the next coming years. This does not include expenditures made during religious pilgrimages to Mecca. Meanwhile, Nada El Sawy (2019), in her report, stated that worldwide spending in Islam-inspired ethical consumption sectors is set to increase 45 per cent by 2024, reaching \$3.2 trillion (Sawy 2019).

In addition, the Muslim travel industry was found to be the second largest in terms of worldwide travel spending, trailing only the Chinese market (US\$ 168 billion in spending). It is proudly to note that the so-called “Muslim-friendly” tourism industry brought in US\$ 24 billion in 2015, and the “Global Muslim Travel Index 2018” report forecasted that expenditure in the global Muslim travel segment will reach US\$ 220 billion by 2020. According to this report, the Muslim travel market is on track to maintain its rapid expansion, with an additional US\$80 billion predicted to be added by 2026, bringing the total to US\$300 billion. (MasterCard and CrescentRating 2018). In addition, there were an estimated 131 million Muslim visitor arrivals worldwide in 2017, up from 121 million in 2016, and this number is expected to rise to 156 million by 2020, representing for 10% of the travel market (Belopilskaya et al. 2017). However, all these cited reports and predictions could not be realised as everyone is aware of the impact of the Covid 19 pandemic and the tourism industry is badly affected by this unprecedented virus on top of all the precaution and safety measures taken by all countries around the globe. According to Fazal Bahardeen, the founder of CrescentRating, 2020 began with destinations caught off guard against COVID-19. Although people still facing many uncertainties in the battle to overcome the pandemic, 2021 started with positive news of the successful development and approval of vaccines by various destinations. Given that the pandemic has dragged along, the new plausible path is to recover to 80% of 2019 levels by the middle of 2023 (Mastercard and CrescentRating 2021).

Still, several scholars have emphasized the importance of halal product and service development in the hospitality industry. In order to penetrate the halal market, it was agreed that hospitality organisations, notably hotels and residence practitioners, should be aggressive in acquiring Muslim clientele. Malaysia has been named as the best top halal friendly holiday destination among the ten Organization of Islamic Cooperation (OIC) countries for the past nine years, except for 2019, when Malaysia shared the top spot with Indonesia (Mastercard and CrescentRating 2019). According to the most recent data from 2019, 130 countries have become halal tourism destinations. There were 46 Muslim country destinations and 82 non-Muslim country destinations, with Malaysia leading the Muslim country category and Singapore and Thailand leading the non-Muslim category (Mastercard and CrescentRating 2019; Musa 2021).

1.1 Halal: Is It an Obligatory Responsibility of a Muslim?

Muslim lives today which are served with various food items, beverages, and consumer goods demand that Muslims be vigilant and careful in using such things mainly due to the Halal, safety, and hygiene problems. Hygiene and quality are factors that must be considered when ensuring that the food is halal and suitable. Muslims believe that dietary factors influence acts of worship, health, and life. Among the most significant factors that make a Muslims' acts of worship excellent and acceptable by Allah S.W.T. is that his diet is halal, pure and clean. Muslims see the question of halal and haram as the foundation of understanding Islam for faith application. To determine the stance according to Islamic law, a Muslim should avoid matters of suspicion and anything in the grey area (syubuhah) (Nafis 2019).

The terms halal and haram are used throughout the Qur'an and Sunnah to refer to moral and material acts, respectively. In Muslim societies, the terms "halal" and "haram" are frequently used. Even to a degree, in some cases in multi-religious cultures, the word halal is the first thing non-Muslims notice about Islam.

Allah stressed this in the Holy Quran Surah Al Baqarah Verse 168:

يَتَّبِعُهَا النَّاسُ كُلُّوْا مِمَّا فِى الْاَرْضِ حَلٰلًا طَيِّبًا وَلَا تَتَّبِعُوْا خُطُوٰتِ
الشَّيْطٰنِ ۗ اِنَّهُ لَكُمْ عَدُوٌّ مُّبِيْنٌ ﴿١٦٨﴾

O humanity! Eat from what is lawful and good on the earth, and do not follow Satan's footsteps. He is truly your sworn enemy.

This verse clearly indicates the obligation towards looking for good things as their food. Except for what God has banned — which will be mentioned later in the surah — the verses allow all of mankind to enjoy the food that God has given on earth. People are also told that they should only listen to God when it comes to determining what is or is not permissible to eat. They should not listen to Satan's opinions on these issues since, as their sworn foe, he will not provide them with sound advice. He will simply lead them astray and urge them to make their own decisions about what is and is not legal.

These instructions demonstrate how realistic and practical Islam is, as well as how sensitive to man's nature and requirements it is. Except for a few items specifically mentioned in the Qur'an, everything is legal.

On top of the above verse, there are few relevant verses from the Holy Quran concerning Halal and Haram. Allah commands Muslims and all of mankind to consume only what is good and halal (lawful). According to Quran: "This day all things good and pure have been made lawful to you" (Surah Al-Maidah: 5).

And then again, "O ye who believe! Forbid not the good things that Allah has made Halal for you" (Surah Al-Maidah: 87).

In addition, the saying from The Messenger Muhammad P.B.U.H. is clear evidence to support the concept of Halal and Haram in Islam.

عَنْ أَبِي عَبْدِ اللَّهِ التُّعْمَانِيِّ بْنِ بَشِيرٍ رَضِيَ اللَّهُ عَنْهُمَا
 قَالَ: سَمِعْتُ رَسُولَ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ يَقُولُ: إِنَّ
 الْحَلَالَ بَيِّنٌ وَإِنَّ الْحَرَامَ بَيِّنٌ وَبَيْنَهُمَا أُمُورٌ مُشْتَبِهَاتٌ
 لَا يَعْلَمُهُنَّ كَثِيرٌ مِنَ النَّاسِ فَمَنْ اتَّقَى الشُّبُهَاتِ فَقَدْ
 اسْتَبْرَأَ لِدِينِهِ وَعِرْضِهِ وَمَنْ وَقَعَ فِي الشُّبُهَاتِ وَقَعَ فِي
 الْحَرَامِ كَالرَّاعِي يَرْعَى حَوْلَ الْحِمَى يُوشِكُ أَنْ يَرْتَعَ فِيهِ
 أَلَا وَإِنَّ لِكُلِّ مَلِكٍ حِمَى أَلَا وَإِنَّ حِمَى اللَّهِ مُحَارَمَةٌ أَلَا وَإِنَّ
 فِي الْجَسَدِ مُضْغَةً إِذَا صَلَحَتْ صَلَحَ الْجَسَدُ كُلُّهُ وَإِذَا
 فَسَدَتْ فَسَدَ الْجَسَدُ كُلُّهُ أَلَا وَهِيَ الْقَلْبُ - رَوَاهُ
 الْبُخَارِيُّ وَمُسْلِمٌ .

The above hadith recorded by Ibnu Majah, from a narration by An-Nu'man bin Basyir R.A where Rasulullah S.A.W. was reported to have said: Which means: "That which is lawful is clear and that which is unlawful is clear and between the two of them are doubtful [or ambiguous] matters about which not many people are knowledgeable.

Thus, he who avoids these doubtful matters certainly clears himself regarding his religion and his honour. But he who falls into the doubtful matters falls into that which is unlawful like the shepherd who pastures around a sanctuary, all but grazing therein. Verily every king has a sanctuary and Allah's sanctuary is His prohibition. In the body there is a morsel of flesh which, if it be sound, all the body is sound and, if it be diseased, all the body is diseased. This part of the body is the heart".

1.2 Travel in Religion and Islam

Travelling is about gaining perspective, which is sometimes only possible when people leave their everyday surroundings. It can be a wonderful experience as it teaches people to be humble. It can often provide that much-needed spiritual refreshment. It's easy to miss the Divine beauty and lose touch and sight of His creation when work, errands, and surviving become entire being. So, travel is the way seek all these beautiful creations (*Reasons To Travel, According To Islam*, n.d.)

According to Din (1989) few studies have provided ample evidence to suggest that the religious factor plays an important motivating role for travelling. Besides pilgrimage practices, missionary travels since the Crusade, and more recently, visits such as those to Palestine are often strongly inspired by religious considerations (Din 1989). People should meditate on Allah's creation and admire the grandeur of this wide cosmos while travelling. Then there's rest, which is required for the human soul to develop a strong belief in the oneness of all things (Suid et al. 2017).

In Islam, the primary goal of travel is to instil a sense of man's insignificance compared to Allah's magnificence (Salleh et al. 2019).

This word journey or travel can refer to both spiritual and physical travel. The word 'saiyr,' which meaning 'to journey or migrate,' appears 27 times in the Quran in various forms. Many of its applications can be found in the phrases 'Do travel,' 'Tell them to travel,' or 'Do they not travel?' (Siraj Islam 2015).

In conclusion, according to Siraj Islam (2015), while encouraging travel in general the Quran also strongly urges travel with a specific, beneficial goal, e.g.:

- Travel to 'read' divine messages (31:31, 12:105, 22:46);
- Travel for trade and commerce (17:66, 2:164, 62:10);
- Travel to explore new horizons (16:14, 35:12, 45:12);
- Travel for recreation (10:22, 5:96, 30:46);
- Travel to learn from visiting new places (22:46, 31:31);
- Travel to immigrate (4:97, 16:41);
- Travel to study evolutionary science, palaeontology and anthropology (29:19–20);
- Travel to study archaeology and history (47:10, 40:82, 35:44, 40:21); and
- Travel to learn from the past (6:11, 3:137, 16:36, 27:69, 30:41–43).

The Quran has various verses that encourage travel and tourism. Allah S.W.T. declares.: Travel across the earth and see how Allah S.W.T. created it: thus, will Allah produce a later creation: because Allah has power over all things" (20 Surah al-Ankabut) (Samori and Rahman 2013).

Allah S.W.T. continues to mention in Quran: "Travel over the earth and witness what was the end of those before you: most of them worshipped others except Allah," (Surah al-Rum, verse 42).

Allah S.W.T. emphasises in another Surah: "Travel over the earth and observe what was the outcome of those who rejected truth," (Surah al-Anam, verse 11). Touring and travelling are encouraged in this context, and they generally go hand in hand with hospitality (Samori and Rahman 2013).

The concept of 'ilm (knowledge) is a major tenet of Islam, and it is still at the forefront of Islamic education. All Muslims, men, and women, have an Islamic obligation to pursue knowledge "*from cradle to grave,*" even if it means "*travelling as far as China*" (Abbas 2018).

Review from past literature, Muslims engage in two sorts of tourism practises. First, the Hajj and Umrah pilgrimage tourism activities are undertaken in a specified geographical zone between Mecca and Medina. The second sort of tourism activity that Muslims could engage in is a more 'touristic' version of pilgrimage that combines religious and leisure tourism and is presented as an alternative to mass tourism's hedonic conception. Muslims are encouraged to engage in such tourism activities for historical, social, and cultural experiences, as well as to obtain information, connect with others, promote God's message, and enjoy and appreciate God's creation (Suid et al. 2018).

Prophet Muhammad (P.B.U.H) said which means: "Three things that can please the sights: See the green thing, look at the flowing water and look at the green object, the flowing water, and the pleasant face. Maintain and renew your body's health by engaging in physical activities such as sightseeing, recreation, and leisure (Amir Abdullah et al. 2020).

Also noteworthy is that the current literature found it challenging to differentiate among religious pilgrims, secular pilgrims, dark tourists, heritage tourists, and pilgrimage. They all are recognised as part of the growing phenomenon of tourist interest in sites that add meaning to life. (Collins-kreiner 2020).

In short, according to Timothy and Olsen (2006) Religion and spirituality are still among the most common motivations for travel - many major tourism destinations have mainly developed because of their connections to sacred people, places, and events (Timothy and Olsen 2006).

2 The Influence of Religion in Business

The fundamental belief in Islam is that God (Allah) is one, and Muhamad is the last of God's divinely given prophets. The core pillars of the Muslim faith are that the Quran is God's final word and holds it in all spheres of lives, including business.

Indeed, several surah in the Quran portray trading as a righteous and beneficial activity, with the primary goal being to control markets in order to remove fraudulent transactions and exploit monopoly power, rather than to outlaw market trading entirely. In Islam, trade should be done by mutual consent, with a focus on contractual certainty to avoid *gharar*, or ambiguity, which might be exploited. In the Quran, *riba* is explicitly forbidden, and most Islamic economists link *riba* with all forms of interest. In the last 50 years, alternative financial institutions have emerged, trying to provide a similar range of services to regular banks while adopting financing mechanisms deemed acceptable with Muslim religious teaching by shariah scholars (Wilson 2005).

The Quran gives a realistic portrayal of human motivation, acknowledging man's desire of riches and proclivity for greed and selfishness: To whom I granted resources in abundance and sons to be by his side! To whom I made life smooth and comfortable! Yet he is greedy that I should add yet more (Sura 74:12–15).

The guiding concept of business philosophy is *tawhid*, or the unity of God, His universe, and His people. God is the universe's single creator, and His people should work together to carry out His will (Rice 1999).

Quran stresses the virtue of altruism "And those in whose wealth is a recognised right for the needy who asks and him who is prevented for some reason from asking. (Sura 70:24–25). It is narrated that Ali, a Prophet follower, recorded the Prophet saying, "Allah has levied upon the wealthiest among Muslims, in their wealth, an amount sufficient for the needy among them. "It is because of what the wealthy do that the poor go hungry or without clothing. Zakat is a method of providing for the destitute and needy. This could be considered a sort of almsgiving (Wilson 2005).

The slave-master connection is a powerful emblem in Islam of a believer's relationship with God. Based on the Quran and Sunnah (Prophet Muhammad's sayings, practises, and approvals), an individual must behave in a specific ethical manner. (Al Quran 31:77) (Haron et al. 2020).

Furthermore, Islamic ethics is a right-and-wrong principle that demonstrates what humans should do according to the Quran and Sunnah. The term “ethics” refers to the set of rules that govern what a person should do. It also discusses the individual’s and society’s virtues, responsibilities, and attitudes (Hashi 2011). It views work as ways to promote self-interest economically, socially, and psychologically to sustain social prestige, to improve societal welfare and reaffirm faith (Haron et al. 2020).

Therefore, in all spheres of human life, Islam places the most significant emphasis on ethical ideals. Ethics regulates all elements of life in Islam. The verses of the Qur’an and the Hadith contain numerous, far-reaching, and comprehensive ethical ideas and moral precepts. The importance of Islamic business ethics in the small-medium enterprises (S.M.E.) industry cannot be overstated. For example, The Islamic perspective concerning S.M.E. business code of ethics has been presented by a sample from the Quran and Hadith related to the 5 axioms: trust, justice, sincerity, truthfulness, and benevolence (Muhammad et al. 2020).

Hence, to be a true Muslim, one must adhere to these values. In all aspects of life, including business, justice and equity, honesty, integrity, veracity, leniency, compassion, tolerance, selflessness, benevolence, collaboration, mutual consideration, sacrifice, and harmlessness are the guiding values. Muslims are expected to uphold these ideals regardless of their position, whether they are an employer or an employee, a landowner or a peasant, a trader or a consumer, a king or a subject, and many more. (*Islam and Business Ethics*|*Islamic-Banking.Com*, n.d.)

3 Interchangeably Terms of usage among Halal Tourism, Islamic Tourism, Shariah Compliant and Muslim Friendly Tourism

There is a non-consensus opinion among the academician and practitioners for these terminologies even though the research connected and concerning these Islamic, Halal, Shariah Compliant as well as Muslims Friendly tourism was being done almost a decade ago and despite of its attraction for many visitors around the globe. There are ongoing debates and contradictory concepts in these types of tourism. They lack a universal definition and the existence of contradictions between them are factors to consider.

All these terms are used interchangeably, and this led to confusion by people. Hence, it is a matter to be solved by academics as it may help the business operator market their product and have a clear understanding of the theoretical definitions and practical activities.

The detailed explanation should begin with a definition of the root term “halal.” According to Al Jallad (2008), the term Halal refers to anything that is regarded permitted and lawful under religion by Arabs and Muslims, whereas Haram refers to what is forbidden and penalised under Islamic law. The word Halal comes from

the Arabic verb *Halla*, which means “to be or become lawful, legal, licit, legitimate, permissible, permitted, allowable, admitted, un-prohibited, unforbidden.” (J.A.L.L.A.D. 2008).

According to Irama and Abror (2019) referring to a book written by Yusuf al-Qaradawi, the term Halal is defined as “what is permitted, and what is permitted by the lawgiver, Allah” (Al-Qaradawi 2013; p. XXV). From an Islamic perspective, halal is defined as Al-Qaradawi refers to any practise or activity that is ‘permitted’ according to Islamic teachings (Irama and Abror 2019).

For non-Arabic speakers, the phrase Halal mainly refers to food that is permissible according to Islam. In Arabic, however, it relates to acceptable behaviour, speech, attire, conduct, demeanour, and eating habits. In Western countries, the word is typically applied to only Muslim food rules, particularly when it comes to meat and fowl. Shariah governs every aspect of a Muslim’s life (J.A.L.L.A.D. 2008).

Fisher (2011) claimed that many European people also presumed that the term halal primarily relates to food and dietary rules. Its definition, however, is far broader, referring to anything in Islamic civilization that is lawful under Islamic law as determined by Allah, the lawgiver. Halal is an Arabic word that means “authorised and permissible” and is expressly mentioned in the Qur’an. In its broadest sense, the word halal means “permitted” or “allowable.” Every Muslim’s belief is based on a fundamental acceptance and comprehension of what is Halal, which falls under the scope of what is believed to be information that is understood by need (Wilson and Liu 2010).

Therefore, many people agreed that halal literally means ‘permitted’ or ‘lawful.’ Industrial players, businessmen, and some Muslim scholars active in halal trade and standardisation have based their halal food decisions on verses from the Qur’an such as:

Allah makes good things lawful to them and bad things unlawful. (7: 157).

You who believe, eat the good things We have provided for you and be grateful to God, if it is Him that you worship. (2: 172).

He has only forbidden you what dies of itself and blood and flesh of swine and that over which any other name than that of Allah has been invoked, but whoever is driven to necessity, not desiring nor exceeding the limit, then indeed Allah is Forgiving, Merciful (2: 173).

Hence, halal is defined as anything which is beneficial to Muslims rather than harmful (Fisher and Lever 2021).

According to Amir Abdullah et al. (2020), human needs and spirituality must be served holistically. This strategy serves as a focal point for integrating ethical and moral concepts into all human demands, activities, and behaviours, especially those related to Islamic tourism. Islamic tourism is expanding in a holistic and comprehensive way, focusing on spiritual aspects while not overlooking the material (Amir Abdullah et al. 2020).

In 2015, J.A.K.I.M. stated in the Manual Procedure for Malaysia Halal Certification that Halal includes several criteria, including animal welfare (slaughtering aspects), free from najas (impurity), free from any adulteration or intoxication,

hygienic and not poisonous or harmful to health (i.e. healthy), and Shariah law compliance (i.e. lawful). The definition also incorporates Trade Description order 2011 and 2012 order of Malaysia, indicating that it follows its laws (Azam et al. 2019).

To sum up, until now, there seems to be no clear understanding of what the term Islamic branding or Halal means. According to Mohd Yusof and Wan Juso (2014), several scholars analysed the term Islamic branding to avoid such confusion and reduce the likelihood of improper use. According to her research, the true Islamic brands are Halal produced in an Islamic country and meant for Muslim consumers. Meanwhile traditional Islamic brands originating in Islamic countries and targeting Muslim consumers, assumed to be Halal, the third one is inbound Islamic brands that is Halal brands that target Muslim consumers but originate from non-Islamic countries and outbound Islamic brands that is Halal brands that originate from Islamic countries but not necessarily targeting Muslim consumers.

Obviously, halal is an Arabic term that refers to what is allowed or legal in Islam. It is the Shari'ah-mandated Islamic dietary guideline for food (Islamic Law).

Rasulullah (p.b.u.h) said: *“Halal is clear and the Haram (unlawful) is clear. Between the two there are doubtful matters concerning which people do not know. One who avoids them in order to safeguard his deen (religion) and his honour are safe, while if some one indulges in it, he may be indulging in the unlawful.....”* (Bukhari).

General Qur'anic guidance dictates that all foods are Halal except those that are specifically mentioned as Haram (unlawful or prohibited). The Glorious Qur'an reads:

“O ye who believes! Eat of the good things wherewith we have provided you, and render thanks to Allah, if it is He whom ye worship. (chapter II, Verse 172)”.

4 Islamic Tourism, Halal Tourism and Muslim Friendly Tourism as the Most used Terms in Business Context

As the global Muslim population continues to grow, marketers have begun to target Muslims as a niche market. This is indicated by the growing awareness of halal certification and regulations, both service providers and producers have begun to address the wants and needs of Muslims.

According to a research prepared by Abu Hassan Makmun Abdul Qadir (2017), Scholars can be divided into two groups when it comes to distinguishing between halal and Islamic tourism: those who discriminate and those who do not. The first group recognises that both terms have diverse meanings and convey different impressions; the second, on the other hand, considers both to be among the many terms that imply Shariahcompliant tourism.

Eid and El-Gohary (2015) believed that halal and Islamic tourism should not be understood as synonymous, since using the term 'Islamic' could imply that such tourism is for Muslims only, and that the activities carried out or products used during the travel are all fully-compliant to *Shari'ah*. Halal tourism meanwhile is travel for religious purposes (Abdul Qadir 2017; Eid and El-Gohary 2015).

However, Battour and Ismail (2016) did not agree to the idea of halal tourism which meant for religious purpose. According to them, Halal tourism is Islamically permitted tourism object or action used or engaged by Muslims in the tourism industry and see that halal tourism is more suitable for branding purposes and business context. (Battour and Ismail 2016) The authors introduce five dimensions that must be considered when defining halal tourism: (1) Islamic law, (2) target customers, (3) products and services offered, (4) location of activity, and (5) purpose of travel (Abdul Qadir 2017; Battour and Ismail 2016).

The same goes to the view from Duman (2011) whereby he already claimed Islamic tourism represents the demand side, based on travellers' motivation to choose an Islamic lifestyle while on vacation, and Halal tourism to describe the economy and sector where halal goods and services are offered to the market for consumption (supply side) (Duman 2011).

Similarly, Hassan (2007) claims that in its broadest meaning, Islamic tourism is a type of tourism that follows Islamic precepts in its fullest sense. Despite this, the term "Islamic tourism" still has a connotation associated with its original meaning, namely, travelling for Islamic activities and/or visiting Islamic places. Hassan (2007) argues that in the sternest sense, Islamic tourism might refer to religious travel (Hassan 2007).

Muslim-friendly meanwhile is mostly promoted by industry professionals and the media. (Commercial Cooperation of the Organization of Islamic Cooperation (C.O.M.C.E.C. 2016) For instance, a hotel that appeals to Muslim travellers by providing halal food and praying area can be labelled as Muslim friendly hotel. It caters to Muslims' demands and religious needs, but not in a full and comprehensive scale. The same case can be said for other service providers and producers within the tourism ecosystem. C.O.M.C.E.C. (2016) raises the issue that the degree of Muslim-friendliness cannot be measured due to the absence of a unified standard.

According to this report, Muslim Friendly Tourism or Halal Tourism refers "Muslim travellers who do not wish to compromise their basic faith-based needs while traveling for a purpose, which is permissible" or it can be described as "Halal conscious travellers, traveling for any purpose, which is Halal (permissible)".

The word Muslim-friendly is used to describe a service, a facility, or a location. It signifies that it has considered some, but not all, of Muslim visitors' faith-based needs, and while Halal-friendly may have the same meaning, the term Muslim-friendly service/facility is more applicable to be used in business context (<https://www.crescentrating.com/magazine/2016>) (Fig. 1).



Fig. 1. Conceptual framework for muslim friendly tourism Source: CrescentRating (2015)

Currently a few nations have policies or initiatives on M.F.T. at the national level. Following is a brief overview of activities by some N.T.O.s. Malaysia is now the most advanced country in terms of a tourism ministry-led campaign to promote M.F.T. Through cabinet legislation, it established the Islamic Tourism Centre (I.T.C.) under the Ministry of Tourism in 2009. I.T.C. has played a key role in teaching local service providers about the M.F.T. market as well as marketing Malaysia as a Muslim-friendly destination. The M.F.H.S. standard is the first in the country for the M.F.T. sector. Some hotels, dubbed “Muslim friendly hotels,” provide the most common amenities to meet the demands of Muslim tourists (Samori and Sabtu 2014). Among the hotels are Grand Bluewave Hotel in Shah Alam, PNB Darby Park Hotel and Putra Hotel in Kuala Lumpur, Perdana Hotel in and Tabung Haji Hotel in Terengganu (Musa et al. 2019). Shariah Compliant Hotels and Muslim-Friendly Hotels and Services was compared by Jais in 2016. According to him, unlike S.C.H., the application or adoption of Shariah law is very limited in Muslim-Friendly Hotel and Services (Ahmad et al. 2016) July 2019 marked a watershed moment for Malaysia tourism industry in a first-of-itskind in the world, Malaysia has launched the Muslim Friendly Accommodation Recognition, which the government backs. and on 3 September 2020, an official launch of logo for this distinguished recognition through Ministry of Tourism, Arts and Culture Malaysia (LAUNCH OF MUSLIM-FRIENDLY ACCOMMODATION RECOGNITION – Islamic Tourism Centre of Malaysia | I.T.C. n.d.) Amusingly, in a year, in 2020, the list of hotels getting this recognition was increase to 42 lists of hotel due to the good support from the Malaysian Association of Hotels (M.A.H.), the Malaysian Association of Hotel Owners (M.A.H.O.) and the Malaysia Budget Hotel Association (MyBHA) (Santaichannel 2020).

Another location aiming to build a tourism ministry-driven policy to position itself in the Muslim market is Indonesia. Several documents on Shariah hotel standards and other associated services, such as spas, have been drafted.

Both Dubai and Abu Dhabi in the United Arab Emirates have launched efforts aimed at Muslim tourists. Family travel has been recognised as a priority sector to work on through the “Dubai – the Capital of Islamic Economy” (D.C.I.E.) project. The term “family travel” is applied to both Muslim and non-Muslim tourists. Abu Dhabi has been working on an N.T.O.-led plan to establish itself as a “hub” for Halal tourism and travel (C.O.M.C.E.C. 2016).

However, despite the potential and bright prospect of halal tourism to the economy and to the hotel industry in particular, this sector faces numerous issues and challenges. Halal tourism is extensive in its aspect, including Halal activities, Halal airlines, Halal food, and Halal/Shariah-compliant hotels (Razalli et al. 2012). This is agreed by Waehama et al. (2018) which claimed that competition is one of the biggest factors affecting the halal hotel industry in Malaysia. Muslim tourists visiting Malaysia have many options to choose from and it is also difficult for halal hotels to find and keep staff. The issues such as increased costs, non-compliance by Halal certified suppliers and strict compliance audits to meet Halal certificate requirements arose in relation to Halal certification were also being the main challenges in this industry (Salleh et al. 2019).

5 Methodology

A qualitative research method was adopted aiming to explore the real view of hoteliers and public authorities on the real reason and intentions in adopting this highly demand of halal industry especially in hotel sectors. Few challenges of the implementation are also being discussed and revealed to give the real idea of challenges they face. Few hotel managers were involved in designing the Islamic services at their hotels in Kelantan, Terengganu, and Kuala Lumpur. In-depth interviews were conducted in at least 45 min every session with the hotel managers. It was recorded and transcribed based on thematic analysis. The interview transcripts were coded until several themes emerged and concluded as key themes.

6 Analysis of Data/Results

The analysis of the interview data was done separately for each hotel.

First Hotel:

Researcher: I would like to ask, is this hotel was declared or just self-proclaimed towards this Shariah Compliant hotel?

Respondent: We were born as Shariah complaint originally and not by applying to it afterwards.

Researcher: oh, it is in your memorandum of registration?

Respondent: Yes, definitely

Researcher: oh since you are born under Tabung Haji. Right?

Respondent: yes. It covers for every Tabung Haji hotel. The hotel was built based on shariah-compliance concept. We have pool, but we will make sure there will be a pool for Muslimah, baby or children, and there will be also a pool for an adult. Its not that, we apply for the halal cert after we built it. The same goes to other facilities which we already aim for shariah compliant starting from when we start build it like the room, restaurant, qiblat signage etc. Its already fix with Islamic product.

The analysis of the interview above showed that this specific hotel was originally born as Islamic or better known as Shariah Compliant hotel. This inherently means that their intention from the first day of their incorporation was to be governed by Shariah regulations and they are ready for full obligation towards Shariah principles.

Respondent: But we have to renew it annually.

Researcher: there is an audit?

Respondent: yes, the auditor will come randomly and without any notice given.so we need to be ready to answer any arising issue. That I why if we have made any changes to any facilities especially on food serving and menus. We must update the changes to the authority.

Researcher: "who is that authority you mean?"

Respondent: it is Halal committee from Halal office Kuala

Terengganu. Researcher: By yearly basis? Respondent: Yes

The analysis of the above interview data led to a point of audit and control mechanism. It showed that audit was carried out by the public authority towards those hotels which carry the title of Islamic hotel or Shariah compliant hotel. The authority will make a random checking to ensure the full compliance towards the regulated principles. This authority may come from federal government authority or state authority since Islamic matters also fall under state matters as gazetted by the law in Federal Constitution. Notably, the audit is to be carried out annually to ensure a consistence compliance of the law.

Researcher: How is your operation so far?

Respondent: So far so good. We are operating as Shariah Compliant hotel

Researcher: Is it your guests Muslims only? Or in other words, do non-Muslims guests also be part of your guests?

Respondent: We have Muslims and non-Muslims guests. The non-Muslims also never complain and always gave a good feedback to the hotel services. Researcher: Do the non-Muslims demanded some services which can't be provided by your hotel?

Respondent: Some did request something, but as we explained that we are operating as Islamic hotel, they understood it.

The analysis of the above data showed that the hotel guest consists of both Muslims and Non-Muslims. Even majority portion will be Muslims, but the non-Muslims also did not find it as a problem to stay at this hotel. The Non-Muslims, normally understand the Islamic operational system applied by the hotels and accepted the fact that the hotels do not provide services which is not allowed in Islam.

Researcher: How is the progress of your hotel revenue so far?

Respondent: We are progressing very well. Each year there is an increase in term of our guests and profit.

Researcher: Don't you think that this title and your branding as Islamic or Shariah compliant hotel will to certain extent affect your sales and profit?

Respondent: Hurmm, as far as we are concern, we still survive and have not received any bad response from the guests. What more, the guests list in increasing every year.

Researcher: are you saying that this branding does not affect your sales and profit?

Respondent: Yes, we have no problem in term of sales and profit

The analysis to the above data to a main sought in this paper that is commercial value of this industry. It portrayed that the title and branding of Islamic hotel or shariah compliant hotel does not affects the hotels' sales. Yet, it increases the profit margin of the hotel. By this, it impliedly gives a good sign to this Shariah compliant hotel branding and its potential to be explored and practised by other hotel practitioners. Hence, it is interestingly to construe that the hoteliers chose for this branding because of their religious duty to spread the beauty of Islam and in a meantime, as it does not affect their business and sales, hence the commercial value for the branding is there. Therefore, religious duty and commercial value are equally important as motivations for a business.

Second Hotel:

Researcher: You are originally a conventional hotel, but now you are more famous towards building your brand as shariah compliant hotel. do you agree?

Respondent: Yes, we were long set up as conventional hotel, but now we have received recognition as Shariah compliant hotel as well.

Researcher: can you describe on islamic activities provided by your hotel?

Respondent: On top of the basic islamic activities, the hotel management has appointed 4 permanent imams at the 'surau', and they are paid. They will hold various Islamic activities such as ' tazkirah', 'qiamulla'i and so on. Azan is heard every 5 hours live and 1 hotel can hear the azan. Ustazah was also invited to give talks and tazkirah to the public and customers of the hotel itself. The topics of tazkirah of imam, ustaz and ustazah must be varied and not contain matters related to politics

Analysis of the above interview data showed that this hotel was initially born as a conventional hotel. But they are very much interested to be as Shariah compliance hotel. This inherently means that they have and ready to be governed by Shariah regulations and they are ready for full obligation towards Shariah principles. Interestingly, this hotel provides extensive Islamic activities such as providing space and time for their staff and guests for congregational prayers, 5 times 'adzan' live for the whole building, and 'qiyamullail' time.

Researcher: To maintain your title and this recognition of shariah Complaint hotel, what else the way you control your guest?

Respondent: if we see a couple coming to check in at the hotel and they are behaving strangely, we will not allow the couple to enter, and ask them to show any evidence of marriage certificate or family relationship. this is because we are worried if things happen it can tarnish our reputation.

The data analysis of the above interview directed to the key points of 'control mechanism'. This additional control practices by the hotel, gave a good sign on how Malaysian's hoteliers are ready towards this Halal industry, and it is remarkable to note that all these extra practices such as checking for marriage certificate in case of doubt were initiated by their own without any force by any public authority. This takes to the next point on why they tried very hard to maintain their title as Shariah hotel.

Researcher: You are trying your level best to adhere to the Islamic Principles. As for now, have you been formally declared as Shariah Compliant hotel from any authority?

Respondent: JAKIM, have not recognized our hotel as a Shariah Compliant Hotel, but our hotel was recognized by foreign and international countries as a Shariah compliant hotel. However, we have received recognition from state authority, namely JAIS, they have no problem in recognizing us as we are an entity under state authority.

The above interview data led to the point of recognition. Recognition is the vital factor and an essential point to be openly declared themselves as Shariah Compliant hotel. This recognition may come from local authority either Federal or State authority or foreign certification bodies. This linked with an audit system to ensure the full compliance towards the regulated principles was adhered to by the hotel. Again, for this hotel, a state Islamic authority was the one giving the recognition.

Researcher: How is the progress of your hotel revenue so far?

Respondent: its good. We have no problem at all. Each year there is an increase in term of our guests and profit.

Researcher: Don't you think that this title and the branding as Islamic or Shariah compliant hotel will to certain extent affect your sales and profit?

Respondent: The profits we earn since being recognized as shariah compliant are not a problem, in fact, it is more of a blessing and actually, there was unexpected profits. for the payment of staff salaries and other payments there is no problem and never in arrears and we believe these are all blessings available in practicing shariah compliant.

Researcher: are you saying that Shariah compliant hotel recognition gives better future of your business

Respondent: Yes, we have no problem in term of sales and profit, in fact it is increasing.

The analysis of the above data is crucial as it headed to the main point in this paper that is commercial value of this Halal and Shariah industry. It showed that the title and branding of Islamic hotel or shariah-compliant hotel does not affect the hotels' sales. Yet, it increases the profit margin of the hotel. By this, it impliedly gives a good sign to this Shariah-compliant hotel branding and its potential to be explored and practised by other hotel practitioners. What is more interesting was that all the practices and extra control taken by the hotel were voluntary without any force from any authority. This is due to their religious duty to spread the beauty of Islam and in a meantime, as it does not affect their business and sales, hence the commercial value for the branding is there. Therefore, religious duty and commercial value are equally crucial as motivations for a business.

Third Hotel:

Researcher: You are a conventional and now recognized as shariah compliant hotel?

Respondent: Yes, we are

Researcher: Which body or agency has the role of controlling the implementation and certification of shariah -compliant hotels??

Researcher: certification from JAKIM through JAIS. Internally, halal executives are monitoring

Analysis of the above interview data led to the key theme of control body. This authority may come from federal government authority or state authority since Islamic matters also fall under state matters as gazetted by the law in Federal Constitution. The respondent is aware on the power hold by both authorities in managing and monitoring the matters relating to Halal. On top of the monitoring system made by J.A.K.I.M. and J.A.I.S., the hotel is also fully obliged to the requirement of law to have an internal halal executive as a requirement to get recognition from the authorities.

Researcher: can you describe on islamic characteristics of your hotel?

Respondent: in this hotel there are 3 outlets. An outlet in the coffee house section. In the coffee house alone, there are 200 menus. Each menu should list the ingredients. Every ingredient must have a halal certificate. Although there is already a halal certificate. But it still needs to be explained to JAKIM. Hotel needs to send the document to JAKIM. Therefore, when the material does not have a halal certificate, we will reject the material. Spacious place of prayer.

The position of the furniture is arranged to facilitate Muslim prayers in the room. The frontliner at the hotel wears a hood all over

Analysis of this data led to the point of observance and compliance towards the outline Islamic principle. It showed that this hotel owner is trying their level best to fully comply with the Islamic characteristics as to maintain their recognition as Shariah Compliant Hotel or Islamic hotel. Any changes made need to be updated to J.A.K.I.M. and hence need to go for an audit again. It started from the food and beverage section up to the other facilities such as room services with spacious praying space and the observance of hotel staff by wearing hood all over.

Researcher: Do you face any challenges to maintain this status of Shariah Compliant hotel?

Respondent: Shariah compliance is not mandatory. However, this hotel chose to implement it and that makes this hotel the number one Shariah Compliance hotel in Malaysia.

However, if a hotel implements Shariah compliance, the hotel's activities will be limited, for example, no entertainment. And there is a possibility of losing tourists.

For example, tourists do not want to come to this hotel due to the absence of liquor which includes Chinese tourists.

Analysis of the above data is crucial as it led to the main point looking for by this paper. It revealed the real problem faced by industry players if a strict characteristic is to be implemented. This brought to the issue of the appropriateness of implementing Shariah Compliant hotel or just Muslim Friendly hotel, which recently spiked a hot discussion among the researcher. This is another issue of concern as Shariah Compliant hotel and Muslims Friendly hotel bring different meanings and weightage. Meanwhile, the profit margin will be their main concern for business-minded people on top of religious obligation. As claimed by this respondent, the strict characteristic to be observed will affect their profit margin and losing their customers including those from China who contribute a major portion to their guest list. Therefore, this need to be investigated by the authorities to attract more participation and commitment of industry players towards the idea of Halal hotel generally. The Strict requirements will hinder the industry from getting involved in this industry at all.

Researcher: How you serve your Muslims and non-Muslims customers?

Respondent: We prepare halal food and pork-based ingredients are totally not allowed, however, alcohol ingredient up to certain extend allowable is allowed because the way the stock arrives is different.

Pork retreat feeding is not allowed at all.

Analysing the above simple data proved that the industry players are looking for some leniency in implementing this halal certificate, including the food ingredients. Alcoholic ingredients to certain extend are allowed as long as it is not to the level of intoxication. This is consistent with the rule made by Malaysian Fatwa Committee of the National Council for Islamic Affairs declared that any food items which were not of alcoholic beverages (arak) would be considered and declared Halal by the authorities if the alcohol content did not exceed 0.01%. This is because, essentially, not all food items with alcohol are alcoholic beverages like liquor or beer. Alcohol sometimes exists naturally in many natural and organic food items such as fruits due to natural fermentation (*Alcohol Content: Many Still Confused as to What Is Haram | The Star*, 2012).

Analysis of Interview Conducted to Public Authorities:

Two informants from authoritative bodies were interviewed to get fruitful insight of the Shariah-Compliant hotel practice in Malaysia. The Director for the Department of Research in Jabatan Kemajuan Islam Malaysia (J.A.K.I.M.) is one participant in the interview session.

The second participant is the Director of the Research Unit from Jabatan Hal Ehwal Agama Islam Negeri Kelantan (J.A.H.E.A.I.K.), which contribute to the practice of Shariah Compliant Hotel at the state level.

Several issues were raised by respondents during the interviews, including; public authorities directly involved in this Halal tourism industry:

No	Scope of discussions	JAHEIK	JAKIM
1	Functions	<ul style="list-style-type: none"> • Halal Certification in state level. Consultation • Monitoring • Withdraw Halal • Certification as an action for non-compliance 	<ul style="list-style-type: none"> • Halal certification for products from Malaysia, Thailand, Middle East, Australia and New Zealand and etc. Consultation on Shariah-compliant issues to interested companies • Coordinate monitoring process of each state • Periodic ambush to non-compliant companies based on complaint reports
2	Directions and Instructions	<ul style="list-style-type: none"> • No specific directions and instructions received 	<ul style="list-style-type: none"> • No specific directions and instructions received
3	Law and Acts	<ul style="list-style-type: none"> • <i>Akta Perihal Dalam Negeri/ Trade Description Act</i> on halal and prohibition of abusing the Halal logo 	<ul style="list-style-type: none"> • K.P.D.N.K.K. Enactment • Trade Description Act
4	Maqasid Shariah	<ul style="list-style-type: none"> • Maqasid Shariah is the basis of this industry particularly in protecting life and lineage by prohibiting cases such as murder, rape and adultery in the hotel is identified as main guide in structuring Shariah-Compliant hotel 	<ul style="list-style-type: none"> • -Maqasid Shariah and Islamic principles become the main concern in en-forcing this Halal industry

(continued)

(continued)

No	Scope of discussions	JAHEIK	JAKIM
5	Issues raised by some hotel-iers	<ul style="list-style-type: none"> • Some hotels do not agree with the attributes of Shariah-Compliant Hotel • It is impossible for the hotels to obtain Shariah-Compliant status as majority of the hotels are not complying. Difficulties in getting • Halal Food and Halal • Kitchen certifications • Shariah-compliant Hotel certification, if in place, cannot be enforced to all hotels, but only to those that decided to get the certification. Therefore, hotels writing in to obtain Shariah-compliant status, is more suitable There is no law on Halal to enforce • Halal Act has been proposed but received objections from nonMuslim members in the Parliament 	<ul style="list-style-type: none"> • The implementation of Shariah compliant hotel is under the jurisdiction of the State Islamic Council • Restricted functionality and authority by J.A.K.I.M. E.g.: Certification on Shariahcompliant movie cannot be awarded as the function falls within states’ Islamic councils • For Shariah-compliant hotels, no action can be taken if they do not comply due to no law is provided on this matter
10	Action Plans/Suggestions	<ul style="list-style-type: none"> • Preparation of Shariahcompliant guidelines for hotels • Official announcement of the guidelines 	<ul style="list-style-type: none"> • Cooperate with Tourism Ministry to include clauses on Shariah-compliant hotel • To propose the Shariah-compliant hotel implementation to states’ Muftis

The analysis of the interview data was simplified in the above table. The first point to highlighted through the table was on the jurisdiction and power of these two authorities namely J.A.K.I.M. and J.A.H.E.I.K. Data showed that both authorities are holding an equal power towards the implementation of this industry. It just that, the former is having jurisdiction in federal level and the latter, in state level. This can be supported by looking to the point of the law referred to by them. Both are referring to the same laws and regulations governed by the federal laws.

The theme for ‘intention’ in implementing this halal industry towards hotel practitioners was highlighted in the coloured table. The researcher tried to find the idea behind the implementation of this industry. The issue of Maqasid Syariah was asked to the informants from both Federal authority as well as Islamic state authority. J.A.K.I.M. represents the federal government and J.A.H.E.I.K. represents Islamic state authority.

The data revealed that the focal point and the foremost consideration in stressing this industry was on the practice of Maqasid Syariah as the essential foundation of Islamic principle which need to be observed by all Muslims in this country. Both authorities acknowledged this as they claimed that Maqasid Syariah is the basis for this industry. However, this needs to be balanced with the next theme, ‘problem faced by industry players’ as highlighted in the table. This interview revealed the problems faced by the industry players in fully supporting this demanding industry. These issues were in fact, brought forwards by the hoteliers for the consideration of the authorities.

Among the problems was the difficulties to fully comply with the attributes and characteristics of Shariah Compliant hotels. The strictness of the features might restrain the hotel players from practising this idea. It might relate to their business growth and profit earned. In addition, the procedures are also a bit painstaking. Hence, this led to the idea that the government needs to investigate this matter thoroughly to make sure voluntary compliance by the hoteliers towards this industry. The government need to balance between the Maqasid Syariah principles as the pillars in Islamic teaching and the business interest of the hoteliers. For hoteliers, it can be said that their religious obligation and the idea’s economic value are equally important.

7 Conclusion

Islam encompasses every spectrum of Muslim’s life. It emphasises life purity by requiring that every activity and undertaking to be in complete accordance with the Shariah rule. As a predominantly Muslim country, Malaysia is doing all possible and its level best to offer its citizens a system that complies with Shariah law and is halal in all its endeavours. This includes striving in promoting for Halal food system and Halal accommodation. Malaysia has been recognised as the No. 1 ranked destination on the Global Muslims Travel Index for nine years in a row up to the year 2020. Therefore, the development of the halal industry has a substantial impact on people and the economy. This halal industry has attracted the participation of various sectors, including those involved in tourism sector.

Previously, halal foods could only be found in the homes of Muslims; however, this is no longer the case. Nowadays, halal cuisine is available at almost all hotels, as consumers prefer halal and hygienic dishes for their daily meals. It is unavoidable that hotel owners adapt to changing trends to continue in business. The issue investigated in this paper was on the real intention of hoteliers in adopting this industry. Some already converted their business to be Shariah Compliant Hotel or at least Muslims friendly hotel in one side, and the purpose of public authorities in seriously upholding this industry in another side. Results showed that many hoteliers opted to go for this branding and were willing to give a commitment to it as long as it does not jeopardise their business. In fact, the result showed that this industry does not affect their business structure and profit so far. Indeed, some claimed that their business grows better with this industry. Hence, the religious obligation and commercial value of the industry

are equally important for them. Their only concern was on the challenges they face if the strict requirement is to be imposed by the authorities. From the authorities' perspective, the result revealed that the main concern is to uphold Islam in all spheres of life, hence stressing the concept of Maqasid Syariah. This is true, but then, it is suggested that the authorities to look into the industry's hard-hitting challenges if the strict requirements and procedures are to be enforced. This might deter them from getting involved in this industry, and as such, it might defeat the idea of upholding Halal tourism in Malaysia.

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Improvement of the Marketing Management System of Tourism and Hospitality Industry Enterprises on the Basis of Innovations



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Abstract Modern tourism is a complex social and economic system, an element of which is a highly profitable diversified economic and industrial complex, which includes travel agencies, hotels and restaurants, cafes, accommodation etc. Structural changes in the economy, instability of the environment require a revision of the forms and methods of managing the market of tourism services. On the basis of the conducted study, the authors concluded that the feasibility of using innovations as an important tool for the development of tourism enterprises and enterprises of the hospitality industry. It is established that innovations act as an incentive for further development of tourism and hotel and restaurant business, allow companies not only to occupy leading positions in their market segments, but also to meet global service standards. The necessity of innovations introduction at domestic enterprises of tourist and hotel and restaurant business in order to cover a larger number of already existing and potential consumers is substantiated. It is generalized that the use of innovative technologies in the management system of tourism and hotel and restaurant business, at the present stage of economic development, is an important task that is of great interest to managers of enterprises in this field. The results of the study presented in the article can be used as a source of information to build and improve the system of investment attractiveness of enterprises in the hospitality industry.

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Keywords Tourism · Hospitality industry · Management · Marketing · Economy · Innovations · Improvement · Service · Consumer

1 Introduction

With the beginning of economic reforms during the 1990 there is an urgent need for a systematic study of the general and specific properties of tourism business and hospitality industry, the specifics of the organization of their activities, patterns of development and management, intersectoral and infrastructural relationships etc.

The problems of finding investments, on the basis of which the development of hospitality enterprises in accordance with international standards of commercial hospitality can be carried out, have become especially important. However, modern economic theory has so far proposed solutions to these problems, mainly for the branches of material production.

The specifics of the tourism business and hospitality development, in this regard, has not yet been fully analyzed and researched. Hospitality innovations continue to be analyzed only in a narrow range of additional services that can be provided by enterprises in this area to their customers, and their innovative development continues to remain outside the scope of comprehensive economic analysis.

2 Literature Review

The first international standard – Frascati Manual defines innovation activity as «an activity related to the transformation of ideas (research and development results) into a new or improved product introduced into the market, into a new or improved technological process used in practical activities, or to a new approach to social services» (Manual 2015).

The innovation process is a sequential chain of actions from the generation of an idea to its implementation in the system of innovative products, services and technologies and their distribution in practice (Tukibayeva and Barlykov 2018, p. 390).

Innovation not only require resource investments but also are associated with risk and uncertain outcomes (Mullens 2018, p. 160). Evidence suggest that economic success is the foremost aim of all businesses regardless of the size and industry (Carroll 1979, p. 497; Bansal 2005, p. 198; Galbreath 2011, p. 89). From entrepreneurial point of view, it is thus pertinent to examine how hotels' innovation strategy relates to long-term economic sustainability. The hotels' motivation for sustainable service innovation is related to market positions, customer satisfaction, service orientation (Horng et al. 2016, p. 2). A diverse array for innovation processes can be distilled from the literature. Amit, Zott and Moscardo categorize

innovation into product innovations, process innovations and business model innovation, while recognize technological and organizational innovations (Amit and Zott 2010, p. 58; Moscardo 2008, p. 5; Nidumolu et al. 2009, p. 56). Conversely, Harvard Business Review identifies four types: sustaining innovation, breakthrough innovation, disruptive innovation and basic research (Satell 2017). Recognize innovation as a two stage process with ex-ante and ex-post phases. Ex-ante refers to the initial phase of innovation process which involves generation, screening and evaluation of ideas for BL innovations; and resource commitment in formal development process. Conversely, ex-post stage relates to innovations already in the market (Dziallas and Blind 2019, p. 4). For hotels, innovation entails enduring economically in a manner that allows the current and future guests and other stakeholders to benefit from the hospitality services and tourism experiences (Pasape et al. 2015, p. 74; Hjalager 2015, p. 5). Because the needs of customers in hospitality are constantly ever-changing (Dzhandzhugazova et al. 2016, p. 10388), hotels can capitalize on service innovation strategy that focus on new and improved processes that are in line with consumers' needs (Barcet 2010, p. 50; Carlborg et al. 2014, p. 374). Moreover, hotels may exploit business opportunities by redesigning their products and services to meet environmental standards and social needs (Wong et al. 2009, p. 21). That is, hotels' innovation strategy focused at responding to market dynamics can promote economics effience (Carlborg et al. 2014, p. 375).

Review of articles on service innovations reveals that, innovation research has largely focused on product innovation of manufacturing firms. According to Carlborg et al., service innovation research has evolved along three stages (Carlborg et al. 2014, p. 375). The demarcation phase distinguished product (technological) innovations from pure service (non-technological) innovations. The second phase was characterized by customer involvement in the innovation process and value creation (Mihalic et al. 2012, p. 701). Although most technological innovations are developed outside the hospitality industry (Hjalager 2015, p. 5), they have extensively transformed hotels' operations (Bilgihan and Nejad 2015, p. 46).

The third phase anchors on synthesis perspective, which involves the integration of both technological and non-technological innovations. From sustainability point of view argue that companies pass through five innovation stages to become sustainable. The stages include viewing compliance as opportunity; making value chains sustainable; designing sustainable products and services; developing new business models; and creating next practice platforms (Nidumolu et al. 2009, p. 57). In other words, to become sustainable in uncertain and competitive market environment, hotels need to maintain creativity, departing from business as usual practices, reflecting on ever-changing market demands and expectations (Dyllick and Hockerts 2002, p. 130). Accordingly, the present study conceptualize innovation strategy as hotels' actions that aim at supporting new ideas, experimentation, and creative processes that lead to new products, services and technological processes (Lumpkin and Dess 1996, p. 135). In line with Jones et al. this study views innovation strategy as means for hotels to meet the needs of various stakeholders including tourists (Jones et al. 2016, p. 37). Therefore, hotels' ability to innovate is expected to be an important tool in managing changes in the business environment.

Innovative hotels are therefore expected to respond actively across a spectrum of corporate sustainability concerns due to their innovative capability. Basically, innovativeness represents the willingness to depart from existing technologies or practices and venture beyond the current state of the art (Lumpkin and Dess 1996, p. 136). Thus, to be sustainable, businesses need to adapt to changing and challenging business environments (Carsrud and Brännback 2010, p. 54).

Innovation aims at improving business efficiency, competitive advantage and profitability (Gobble 2012, p. 65). It is therefore businesses' attitudes and strategies towards innovation that can considerably influence the effectiveness towards the discovery of new opportunities and exploitation of niche markets (Su and Sohn 2015, p. 3). In recent years in Europe the share of online sales of services in tourism has been increasing. In Ukraine, such sales remain short of the similar traditional services of travel companies, but we can speak about the high dynamics of growth in the future. Some travel services already use the i-commerce, based on the elements of artificial intelligence, which helps to analyze large amounts of data and learn from their own and other people's experience of filling the customer orders. Personalized services that are most suitable for a particular customer are a strong competitive advantage (Kozhukhivska et al. 2020b, p. 1008). Such adaptation may largely require a proper utilization of innovative strategies (Whelan and Fink 2016, p. 680); (Brych et al. 2021, p. 238). In other words, the degree to which businesses create new products, services and processes that add value to marketplace influences their economic sustainability (Gundry et al. 2014, p. 8). In fact, firms with strong innovative strategies tend to constantly scan and monitor their environments while identifying new opportunities to strengthen their competitive positions. Likewise studies inform that, entrepreneurial, dynamic and innovative firms tend to be adept at environmental scanning, gathering and processing information (Rogers and Bamford 2002, p. 206).

Therefore, innovative activities can be a driver for economic development for enterprises in tourist and the hospitality industry. However, the problems of innovative development of tourism business and hospitality enterprises remain little researched. This is largely due to the fact that for a long time tourism business and hospitality industry remained on the periphery of scientific and economic observation. The urgency of these issues led to the choice of research topic and outlined its purpose.

3 Purpose of the Study

The purpose of the article is to analyze and dynamics of innovative development and its impact on the hospitality industry.

4 Methodologie

The theoretical and methodological basis of the study is the scientific work of domestic and foreign scientists in studying the social and economic aspects of tourism development, as well as personal evaluative comments of the author.

Methods of comparative and economic analysis, expert assessments, were used, etc. Thus, the dynamics of tourist flows in Ukraine has been estimated on the basis of the use of economic analysis; factors of influence on the development of the tourism industry were determined using the methodology of comparative analysis and expert evaluations.

5 Results

Modern tourism is a complex social and economic system, an element of which is a highly profitable diversified economic and industrial complex, which includes travel agencies, hotels and restaurants, cafes, accommodation etc.

Structural changes in the economy, instability of the environment require a revision of the forms and methods of managing the market of tourism services. The topical issue is to define new and improving existing marketing tools, mechanisms for shaping the demand of consumers for tourism services (Kozhukhivska et al. 2020a, p. 5283).

The international hotel business is a special segment of the hotel industry, which is characterized by a high degree of internationalization of capital, the international nature of its operations, as the hotel system considers the whole world as its field of activity. Thus, the international hotel business plays an important role in solving the problems of integrating a country's economy into the world economy and attracting investment in the real sector of the economy. At the same time, the industry is in the process of adapting to international standards.

The main defining feature of the modern economy is innovation. Innovation is a powerful strategic and anti-crisis tool. The relevance of innovative technologies is explained by the world market globalization, shortening the life cycle of goods, as well as the need for a strategic approach to updating the quality characteristics of products and services.

Innovation in tourism is a system of organizational and economic, research, technological and other measures and their results aimed at radical transformation and renewal of the tourist product, the mechanism of its promotion and implementation in order to achieve economic, social, environmental or other effect (Balmer and Thomson 2009, p. 17). Customer orientation has an impact not only on production and consumption, but also on the associated common practices, which are not purely economic, for example, consumption practices (Kozhukhivska et al. 2019, p. 1372). The application of innovations in tourism greatly facilitates the process of providing tourist services, which begins with informing about them and ends with their final

consumption. For example, the emergence of the World Wide Web has led to the simplification of information exchange, improvement of methods of implementing the marketing cycle in tourism, the development of electronic means of payment with customers and suppliers and more.

Hospitality is the basis of tourism as a type of economic activity. Accommodation takes the lead in the range of services provided to tourists during the trip, and is an integral part of each tour. The use of innovations in the hotel business is cost-effective and efficient if they bring additional income, provide competitive advantages in the market, increase market share, reduce costs, improve the service process, increase the efficiency of individual departments and the hotel as a whole. The hotel business is a highly saturated information industry. It is known that the success of business of some sectors of the economy directly depends on the speed of transmission and exchange of information, its relevance, timeliness of receipt. This also applies to any accommodation. The successful development of the hotel business involves the widespread use of the latest technologies both in the introduction of new hotel services and in their promotion on the market. It is obvious that the introduction of innovative technologies becomes an integral part of increasing the competitiveness of the hotel business, as well as improving the quality of service. Thanks to modern forms of management, such as franchising and contract management and a combination of these forms, hotel companies have been able to reduce costs when entering the market, more centrally manage their financial resources, minimize current costs, pursue a more effective pricing policy.

As a result, the development of the modern hotel sector is characterized by an increase in the share and role of international business in it. International hotel corporations that create hotel chains dominate the accommodation market. However, the processes of concentration and centralization in the international hotel business have not led to the complete displacement of relatively small independent hotels. At the moment, the world is undergoing a global economic process of division into massive blocs, such as the European Union (EU), the North American Free Trade Agreement concluded between the United States and Mexico, and so on. The European Union has lifted national restrictions not only on trade but also on the movement of labor and capital.

The synergies that arise between all participating countries have a positive effect on their development. As industrial, commercial and tourism links develop within the EU, the need for hotel services is growing steadily. Taking into account current trends in international trade and tourism, it is easy to predict in which direction international hotel corporations will develop. It is expected that the tourist flow to the countries of the Pacific region will increase at the same rate as in recent years. In this regard, it is planned to develop resort hotels in Indonesia, Malaysia, Thailand, Vietnam and Mexico. In Asia, the rapid development of Hong Kong in 2017 was stimulated by the rapid growth of the economy of neighboring countries and the specifics of the tax system. In Hong Kong a universal corporate tax of 16.5%, income tax of 15% is collected and no taxes on income from capital or dividends are collected (Developments and challenges in the hospitality 2021). Some hotel corporations are

headquartered in Hong Kong, among them – Mandarin Oriental, Peninsula, Shangri-La, all of which are world-famous five-star hotels. They are based in Hong Kong due to low corporate taxation and the ability to use as administrators professionals from other countries without much bureaucratic delay. In developing countries, as they achieve political stability, the development of the hotel business goes hand in hand with general economic and social growth. An example is the countries of the former Eastern European bloc, where the last few years have created excellent opportunities for the development of hotel corporations.

When conducting state policy in tourism, the national tourism administrations of most countries take into account the forecast of tourism development in the world, compiled by the World Tourism Organization (UNWTO) – the largest intergovernmental organization, which is a specialized agency of the UN and has 153 countries. According to the UNWTO study “Tourism – Panorama 2022” in the period from 2017 to 2022 is projected to increase global tourist arrivals more than double. After the figure of international tourist arrivals in 2013 amounted to 996 million tourists and increased in 2014 by 39 million tourists, and in 2017 by 42 million tourists, the number of international tourist arrivals for the first time in history exceeded one billion (1.035 billion). UNWTO predicts that by 2022 the number of international tourist arrivals in the world will be about 2.0 billion tourists (UNWTO Press Release 2021). The basis of the world tourist accommodation market is hotel companies and similar accommodation – up to 70% of the market. Hotels have the following characteristics: they consist of rooms that exceed a certain minimum, have a unified leadership, provide a variety of hotel services (the list of which is not limited to daily bedding, cleaning rooms and bathrooms), grouped into classes and categories according to services provided.

In Ukraine, at the state level, the development of tourism and hospitality is recognized as one of the priorities of the national economy. World hotel corporations are actively investing in the Ukrainian market: in many cities, especially in the capital, there are hotels of the largest hotel chains, which indicate a significant prospect for the development of this area. According to the forecasts of the State Committee for Tourism, in 2022 inbound and outbound tourist flows in Ukraine will increase to 10%. In 2018, more than 28 million foreign travelers visited Ukraine. Thus, the number of international arrivals in Ukraine in 2018 increased by 13% compared to 2017. However, in 2019 only 2.5 million foreign tourists came to Ukraine with tourist purposes (Agency and for Tourism Development 2021). It should be noted that until recently the tourist infrastructure of Ukraine was not developed well enough. Since 1992, the tourist accommodation market has tended to reduce the number of large hotels and their simultaneous capacity. Also, there is a gradual replacement of large complexes with more mobile, flexible forms of business, mainly in the form of small hotel business enterprises of various types and categories. During 2010–2018, modern hotels were opened in many Ukrainian cities. Currently, hotels are being built in large cities of Ukraine that will operate in accordance with international standards of hotel service. Thus, new hotels are being built in Kharkiv, Dnipropetrovsk, Lviv, Zaporizhia, etc.

It should be noted that due to the quarantine restrictions caused by SARS-CoV-2 pandemic, the number of transactions in the hotel segment of Kyiv in the first half of 2020 decreased almost 8 times compared to the first half of 2019, but however, this figure is 3 times higher than the number of transactions in the hotel segment compared to 2012 (Agency and for Tourism Development 2021).

Analysis of the current state of tourism in Ukraine shows that in recent years this area is developing steadily and dynamically. There is an annual increase in domestic tourist flow. The growing demand for tourism services within the country has caused a boom in the building of small hotels, mainly in resort regions, as well as an increase in the number of hotels from international hotel chains in Kyiv, Kharkiv and other major cities, the creation of domestic hotel chains. The volume of investment proposals for hotel construction from both foreign and domestic investors has sharply increased. At the same time, the main proposals are aimed at the hotel business development in the regions of Ukraine. The successes of recent years in the development of the resort and tourist complex in Odessa and Odessa region should be especially noted. Due to this, not only Odessa, but the whole Odessa region as a whole has gained worldwide popularity, which determines the long-term business interest in the development of tourist infrastructure in the region and the guarantee that in a few years the Black Sea coast will become a developed world resort. At the present stage, the main tools in forming an effective management system of the hotel complex are the use of advanced technologies (including the Internet), energy efficiency, adaptation to user demand, versatility, flexibility, social and environmental responsibility, and regulation of operating costs. The development of the Internet brings the hotel and tourism business such benefits as reduced costs, increased efficiency, easier access to consumers, even for small companies. E-marketing is evolving especially fast.

The latest Internet innovation is the development of social networks such as Facebook and MySpace. Now both hotel and travel companies participate in them. In other words, effective hotel management includes equal consideration of economic, environmental and functional aspects, as well as investment, production costs and process quality, along with comfort, health and satisfaction of needs. This approach of international developers and investors is called "The blue way". The term "The blue way" appeared in Ukraine relatively recently and is already widely used by hotel business professionals. The concept includes a set of measures to save costs, effective planning, improving the level of service, reorientation in favor of environmental technologies. "The blue way" characterizes the package of services provided in accordance with the principles of renewable, energy efficient and environmentally friendly use, including in the hotel industry. At the same time, environmental friendliness, characterized by the concept of "Green", is included in the concept of "The blue way": if the building meets environmental standards and requirements for economy and functionality, it is a visible example of this holistic and balanced approach.

One of the most common global trends in the hotel business for business and luxury hotels is to attract business tourists with art objects. Hotel operators work with leading galleries and museums, decorating halls, restaurants and rooms with art and antiques, offering their customers tickets to various exhibitions. For example, the Radisson

Blu Edwardian hotel chain (England, London) is working with the Victoria and Albert Museum to offer customers a package that includes accommodation, breakfast and tickets to an exhibition dedicated to the legendary musician David Bowie. The popular Crowne Plaza Canberra business hotel in Vienna offers exhibition tickets at the National Gallery of Australia. Siam Kempinski Hotel Bangkok in Thailand changes its exhibition of paintings by local artists every three months, which are exhibited together with art objects from the collection of Thai Contemporary Art Museum, which has more than 4,000 works.

Opened in January 2013 in Indianapolis, USA, the Alexander Luxury Hotel features impressive paintings and installations provided by the Indianapolis Museum of Art. About 40 works by contemporary artists are exhibited in the public areas of the hotel, 14 of which were provided specifically for the opening ceremony. The hotel complexes exhibit unique works by Andy Warhol, Salvador Dali and Pablo Picasso, as well local artists. This practice is aimed at increasing customer loyalty.

Along with attracting business tourists with art objects, the common world practice of promoting premium hotel services is to focus on a narrow segment of customers to create an original hotel product. For example, the number of Women only hotels is growing worldwide. The first such hotel (Barbizon Hotel for Women) appeared in the early twentieth century in New York. This “women only” hotel was to be seen as a symbol of feminism. Since the 1980s radical rules were relaxed, everyone could stay in the hotel. The hotel is currently listed on the US National Historic Site. It should be noted that the primary reason of the exclusively women’s hotels’ creation – the idea of feminism – eventually gave way to the religious aspect, which is associated with the rules of conduct of women in the Islamic world. In this regard, in 2007, Saudi Princess Madawa bint Muhammad supported the initiative of local businesswomen to open a special hotel Luhtan, or “Escape in search of refuge” in Riyadh. All hotel staff is also women. As stated on the site booking.com. “Men, couples and children are not allowed to stay in the hotel”.

In the middle of the twentieth century in a number of hotels there were special hotel floors where only women lived. Such floors still exist today, for example, in the Grange City Hotel (London), where 68 rooms are exclusively women’s, equipped with all necessary comfort items. At the Hampton Inn in Albany (USA), women are offered, in addition to coffee with cookies, soft socks, moisturizer, and a half-hour massage on a massage chair. However, on weekends, men can also book rooms on the “female” floor. One of the most important women’s requirements is a guarantee of absolute cleanliness and hygiene.

Studies conducted in Copenhagen have shown that it is important for many travelers to know whether only women lived in their rooms, only women used bathroom accessories and cleaned the room (in particular, made the bed). Taking these wishes into account, the Bella Sky Comwell Hotel (Copenhagen) in May 2013 opened a floor with apartments exclusively for women: large shower rooms, mini-bars with champagne, chocolate and cocktails, as well as many additional elements.

The Swiss Lady’sFirstHotel (Zurich) took a slightly different path when dealing with hygiene issues. Located in a building of the nineteenth century, the hotel accepts everyone, but the SPA-salon is a special area, which is allowed only to women. The

idea of women's rooms could not fail to interest the leading hotel chains. For example, in the 1960, Hilton announced the launch of Lady Hilton rooms, where visitors were provided with special make-up mirrors and additional hangers. Somewhat later – at the beginning of the twenty-first century Marriott Company, after conducting a study, concluded that many customers consider the practice of opening special rooms unacceptable, and refused to create female floors in their hotels. In turn, representatives of Crowne Plaza Hotels & Resorts believe that modern women need solitude (but not isolation), so in the American hotel chain – Crowne Plaza Milwaukee-Wauwatosa, although there is a “female” floor, but men also have the opportunity book a “special” room.

Hyatt Hotels Corporation Company, trying to listen more to its customers, has conducted a large-scale study of the company's history among various categories of travelers. The study of the opinions and ideas of guests marked the beginning of changes in hotels, thanks to which customers will be able to receive services for individual needs. The study, which lasted 18 months, covered more than 40 focus groups around the world. As women become more frequent travelers, Hyatt has focused on creating conditions that take their interests into account. Based on the results of the study of the travelers' needs, Hyatt Hotels & Resorts has launched a special program through which the hotel can rent or buy the necessary toiletries and utensils. Despite the fact that the new services are tailored to the needs of women, all guests will be able to take advantage of innovations. All innovations have been tested in several Hyatt hotels, selected as “laboratories” specifically for the implementation of the program at the global level.

In Ukraine, this service was non-demanded due to ill-considered proposals and illiterate marketing policy of hotel and restaurant managers. The modern market of hotel services is in constant dynamics, responding to emerging customer requests. Business tourists who need to rent a room for a few hours a day have become the reason for the emergence of a new service on the market – day hotels. Business people who have come to another city feel the need to tidy themselves up before an important meeting or just relax after a long flight and then leave the hotel. For more than ten years, this service has been offered by hotels at airports, since 2010 this idea has spread among city hotels. Day visitors are usually asked to leave before 18:00 or 19:00 in order to prepare the rooms for the evening arrival of the next visitors. Thus not the hourly payment but the fixed cost of number for day is taken from the visitor. It is noteworthy that despite the fact that such a service is offered by many airport hotels, to such large hotel chains as Holiday Inn, Ibis, Novotel, Hilton, Sheraton on the Internet sites of hotels, the possibility of daily accommodation is rarely advertised. For the convenience of tourists who need day accommodation in the hotel, there are specialized sites, such as the Belgian Between 9 and 5, among whose partners – the hotel chains Radisson, Hyatt, Best Western, Marriott. Despite the name, you can book “accommodation” from 8.00 until 19.00, and prices depend on the load of the hotel in a particular period and day.

Similar is the French portal Dayuse-hotels, which cooperates with 400 hotels in nine countries, from Italy to the United States, and is constantly expanding its offer base. The average cost of a day's accommodation when booking through the portal:

79 British pounds per room in central London or 100 dollars in Manhattan. This portal also offers the use of hotel rooms as temporary offices or for luggage storage.

An alternative to budget and short-term accommodation in megacities offer capsule hotels, which first appeared in Japan (Osaka) in 1979. Capsule hotels consist of small rooms. Space in hotels is divided into two types: shared and individual, which inevitably follows from the organization itself. A mandatory requirement of capsule hotels of this type is a large public space. Hall, lounge, bar, sauna, and sometimes a swimming pool, exist specifically for communication. The interior of the capsules in all hotels is caramel-colored, which has a calming effect on the nervous system of a person in a small enclosed space.

Another Japanese feature – according to an informal rule, capsule hotels in Japan were originally designed for men. And although some of them have one floor for women, this is rather an exception. Capsule hotels are available in both small cities and large cities of Japan – Tokyo, Yokohama, Osaka, Gole, Sapporo. Japan's largest capsule hotel, Green Plaza Shinjuku, is located in Tokyo. On six floors there are 630 residential capsules, installed in two tiers. The length of each cabin, equipped with centralized air conditioning is 190 cm, width – 90 cm, height – 100 cm. For the convenience of the inhabitants of the second tier small steps that serve as stairs are made on the walls. The cost of living in the capital's Japanese hotel Green Plaza Shinjuku is about USD 35 and in the provinces the price is much lower. The original Japanese concept of capsule hotels has undergone major changes for the better, and now respectable tourists stay in capsule hotels. The main purpose of the Japanese visit to the capsule hotel is not to stay in capsules, but to visit Onsen. Onsen is a wellness center equipped with large hot mineral water baths. The Japanese believe that in prehistoric times only the gods had access to mineral springs. Therefore, accommodation in hotels such as Green Plaza Shinjuku is seen as a joyous ceremony.

In Europe, the idea of “capsules for life” was transformed from minimalist to design. European capsule hotels, in contrast to Japanese hotels of this type, do not look like capsules, but the cabins of modern cruise liners. It should be noted that the capsule hotel is a direct competitor to hostels, which consist of multiple rooms. According to marketers, taking into account the cost of accommodation, in Europe, capsule hotels have prospects.

Determining the right evaluation criteria when developing a pricing strategy is of great importance in the hotel business. It should be noted that the emergence of a large number of budget hotels in the world is directly related to the development of low-cost air travel (Low Cost): poor passengers have become potential tourists. At the same time, there are only two ways to satisfy the needs of customers with little wealth: either to minimize the set of services, or to minimize the area of the room. So, the owners of Yotel Company decided to create small enclosed spacious rooms-cabins in European airports. There are currently 4 Yotel hotels in Gatwick (London), Heathrow (London), Schiphol (Amsterdam) and New York with rooms of 7–10 sq.m. They are equipped with a bed, desk, WiFi, TV and a small bathroom. Food and beverages are provided on request. The cost of living starts from 50 euro for 4 h.

The Asian corporation Tune Hotels has advanced much further in creating inexpensive hotels. It was founded by Tony Fernandez, the owner of the budget airline AirAsia. Under modern conditions, the chain includes 27 hotels located in five countries. The company's motto is "five-star beds at one-star prices". Tune rooms (about 10 m²) are equipped with a wide bed, desk, chair and fan. They also have a small bathroom. But there are no towels and soap. The basic cost of living in the flagship hotel Downtown Penang (Georgetown) is about USD 30. If guests have a reasonable desire to turn on the air conditioner, access the Internet, buy a towel, soap etc., will have to pay extra.

The undisputed leader in the budget hotel market is the French corporation Accor. The economic segment development in the Accor Group is given special importance: it generates significant revenue for the operator and is an important factor in global growth.

According to analysts, the group of ibis brand, which belongs to the economy class, is most suitable for development in the regions of Ukraine. Taking the first place in the European rankings, it gives the tone on many platforms outside the Old World. It has a total of more than 3.5 thousand hotels located in 92 countries. Accor hotels operate under different brands. Sofitel or Pullman, for example, represent luxury hotels 5* or even 5*+. The Novotel brand combines 3–4* hotels. In the budget environment, the Ibis Budget chain stands out. It has 492 hotels in Berlin, Madrid, Paris and Prague. The strong financial potential allows Accor to maintain strict standards that are adopted at the company's headquarters. That is why anywhere in the world Ibis Budget sign promises similar living conditions at low prices. Hotels are festively decorated: pastel tones with an inclusion of juicy paints are typical of both the color scheme of the facades (often different shades of white) and interiors. The undoubted advantage of Ibis Budget hotels is the budget prices. The cost of living in Warsaw is 22 euro, in Berlin 29 euro, in Brussels 39 euro. IbisHotel.com is visited by more than 24 million users a year, and is the main booking channel for ibis hotels worldwide. The new version of the ibisHotel.com website will help expand the reach of the Internet audience. The goal of Ibis is to increase the share of direct bookings from the site to 40% by 2021. Note that the number of visitors to the site in 2019 alone increased by 30% (Competitiveness and Report 2021).

Along with capsule hotels, hotels with a unique concept and design include Bubble hotels. In France, there are a number of transparent tents designed for accommodation and recreation of tourists. The concept of the new hotel format belongs to the French designer Pierre Stephanie Dumas, who proved with his project that the ball in the hotel market is beautiful and comfortable. A new balloon hotel resembling a soap bubble has opened in a picturesque forest on the outskirts of Paris. This place attracts travelers with a quiet and cozy location that allows you to feel closer to nature, away from the noisy city and fuss. The main idea for the opening of such a hotel was the desire of the designer to create a place for temporary relaxation.

The design of the new bubble hotel is based on the following principles: minimum energy, minimum material, maximum comfort and maximum environmental impact. All these characteristics allow the hotel to claim the title of ecological hotel, based on the principles of nature protection and the rational use of its resources. The design

of the bubble hotel has no corners and ribs. The shape of the bubble is maintained by air, which allows you to create a pleasant comfortable humidity inside it. At the same time the hotel fully meets all accepted standards of traditional hotels, providing residents with the necessary amenities and comfortable accommodation. The most spacious models in the collection are CristalBubble and BubbleRoom, which are ideal for a large family.

The first hotels of this format, which were named Bubble due to their shape, appeared in 2010. Since then, every traveler has the opportunity to enjoy a holiday in nature in a hotel of unusual shape. The hotel's shell is made of recycled plastic materials with UV protection and anti-flammability properties. The size of one room-bubble is about 4 m in diameter, which can accommodate a double bed, table, chairs and other household items for a comfortable stay surrounded by beautiful nature. For the convenience of guests, a special speaker system and air circulation system have been developed, thanks to which, guests have the opportunity to truly enjoy a holiday in nature. In other words, Bubble-hotels reflect the progressive movement of the global hotel business to environmental responsibility, energy and resource conservation through the use of eco-technologies.

6 Conclusions

In Ukraine, there is a rapid development of the hotel business, as evidenced by the opening of new hotel facilities and the interest of foreign investors. The leaders of the hotel business in Ukraine are Kyiv, Odessa, Lviv. In addition, the hospitality industry is actively developing in Zakarpattia, Ivano-Frankivsk, Kherson and Zaporizhia regions. In 2022, Ukraine is expected to increase the hotel number due to the development of network operators in the cities of the country.

At the same time, the most active operators who plan to develop their networks in the cities of Ukraine are Accor, Rezidor Hotels Group, Kempinski Hotels, Hilton Hotel Corporations. Chain hotel operators are interested in the market of large cities in Ukraine. In the next few years, foreign hotel and tour operators plan to actively develop in the Ukrainian market, which is due to the objective growth of business and tourism flow to Ukraine. In 2016, Hilton Worldwide took the lead in terms of the hotel room capacity. The most ambitious expansion plans for 2022 have been announced by the French network Accor, which aims to launch more than 2,500 rooms, and the American InterContinental Hotel Group, which plans to increase its room capacity by 1,000 rooms.

Such large-scale prospects lead to a significant change in the structure of international operators in the Ukrainian market. In our opinion, by 2022 the leader will be the French network Accor, which is projected to occupy 22% of the market against 10% in 2018, displacing the InterContinental Hotel Group from the first place (Whelan and Fink 2016).

The dynamics of development of the Ukrainian hotel services market reflects the main world trends and modern practice: principles of environmental friendliness of applied technologies, resource saving, reduction of expenses; application of innovative design solutions; service standards improvement; creation of a unique hotel product focused on the needs of a narrow segment of customers; development of new hotel services and forms of business (day hotels, capsule hotels) etc.

However, in some cases, under modern conditions, Ukrainian hotels do not have enough resources and thoughtful marketing policy to achieve effective management of the hotel and restaurant business. Therefore, the topic of using international experience, development, implementation and application of new models of innovative hotel concepts is very relevant and important for the hotel services in Ukraine.

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Comparative Analysis on the Socioeconomic Impact of Rural Tourism Along the West Coast of Sabah



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Abstract The aims of the study are to gauge the perception of rural tourism development impact on economic, social, and environment, and to make a comparative analysis of the perception about the three aspects involving stakeholders in three locations along the west coast of Sabah. A total of 319 respondents were involved in this quantitative study. Questionnaire was used as an instrument to obtain the perceived feedback of local communities who live in the locations of study, namely Kundasang, Kota Belud and Papar. The data were analysed using descriptive analysis and ANOVA to examine the 12 measurement indicators of the study. Q1 to Q5 measured the financial and the physical economic impact, Q6 to Q9 measured the social impact meanwhile Q10 to Q12 measured the environmental impact. Overall perceptual measures indicate respondents generally agreed that rural tourism have brought positive impacts economically, socially, and environmentally, although the approval about positive social impact is slightly marginally. Despite recorded mostly favourable opinions, the comparative results for economic aspects revealed there were significant differences between at least two study locations, namely increment in economic activities, business opportunities, and property value. No significant differences were found for perceptions about increase in purchasing power and cost of living in these locations. In terms of the social and environmental impacts, there significant mean differences were found for all indicators. The resultant outcomes provide empirical evidence there were perception gaps between at least two localities about economic opportunity, resource distribution, and social benefits brought by rural tourism development to these communities. Managing the perception of stakeholders is crucial. The causes leading to these differences need to be investigated because mismanagement of perception may diminish the supports, even conflict and

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retaliation, for rural tourism activities by the local communities and in the long run, can disrupt and impede the growth of tourism industry. Moving forward, the study recommended some ideas to better manage perception and to bridge the perceptual gaps.

Keywords Comparative analysis · Perception · Rural tourism · Sabah · Socioeconomic

1 Introduction

Rural tourism aims to create a positive form of transformation for rural development and community wellbeing by also stressing sustainability of the natural resources by enhancing the knowledge of biodiversity, cultural and lifestyle diversity. Rural tourism encourages the local community to directly engage in tourism activities at their areas (Kunasekaran and Gill 2012). People who patronage to rural tourism are those who migrate from their normal home residence to a rural area and spend vast proportion of their vacation time engaging in the rural activities such as farming, fishing, ranching, and living together with the villagers (Fleischer and Pizam 1997). The sustainability of rural tourism can only be achieved when planning strategy that involves multi stakeholders' participation approach as well as multi action approach. Socioeconomic impacts are measurable when they are objective but most of the time it is measured based on value judgement, which is the perception of the community or the tourist which is quite subjective. Socioeconomic impact in tourism refers to ways tourism has contributed to the changes in the value system, lifestyle, moral conduct, individuals' behaviour, individual and society's relationship, purchasing power, quality of life, traditions, and community-based organization.

Sabah government has proposed an allocation of RM17.2 million for rural tourism development for 2021 (The 2021 Sabah State Budget, 2020). For Sabah, the jewel of tourism includes the rural areas, which are rich in culture heritage and natural attractions, thus the rural tourism development business model can be tapped and serve as catalyst to further enhance the vibrancy of tourism activities in the state. Rural tourism can create dynamism in the rural area through the increase in economic activities such as homestay, food and beverages, handicraft productions, cultural performances, sales of agricultural products, as well as promoting other tourism-based activities including hiking, jungle tracking and bird watching. This dynamism potentially led to an independent community with sustainable purchasing power. Despite its importance (Hwang et al. 2012) there are few studies investigated the impact of rural tourism (Kunasekaran and Gill 2012). Study that examines the perception of local community provide valuable hindsight as to whether rural tourism has brought favourable, adverse, or no effect to their community. The understanding of the local communities' opinions on the perceived impact is vital for outsiders before they plan and decide to carry out tourism related development. Additionally, vast study

involving the perception of the local communities is crucial to yield a crystalised conceptual framework in this field of investigation.

From other perspective, rural tourism is extremely seasonal and provisional, therefore the industry may incur high risk. In addition, due to increasing inflow of tourists, which in turn causing an increase in the demand for the local produces, will inevitably push up prices. This overall prices for goods and services will be more costly for everyone. Additionally, the locals might not have the expertise or the talents to cater the needs of the tourists whether local or foreign. The tourists might have different culture or ideologies or opinion, thus conflicts might arise between the villagers and the tourists. Further, pressure to fulfil the demand of the tourists can result in the overuse of resources, which in turn causing pollution, destroying the natural heritage, and building infrastructure either not in line with the culture or the landscape. Question arises to whether the rural tourism development really fulfil its objective. Thus, the study aims to measure the perception of the local communities on the socioeconomic impact obtained through the rural tourism development implemented along the west coast of Sabah.

2 Literature Review

Rural tourism is a multi-faceted activities can bring both positive as well as negative impact economically, socially, environmentally, and factors of sustainability (Joo and Park 2008; Khania 2005; Muresan et al. 2016; Harun et al. 2018). The key players of rural tourism are the rural communities (Kunasekaran and Gill 2012). An and Alarcón (2020) stresses in the field of rural tourism, it is critical to focus on the depth and breadth of the relationship of all aspects of the environment, economy, and society, and to analyse their overall implication to the local communities.

Hall (2004) and Gan (2020), among others, stressed that no doubt rural tourism has contributed to the socioeconomic development or eradicated poverty, but adverse effect of rural tourism development was also identified in many places in Europe. Hall (2004) further pointed out three critical issues. First, no doubt tourist visits a location for the unique nature and cultural heritage, but these locations qualities are being threatened by the tourism and recreational activities. Second, the tourism service providers in the rural areas are the villagers. The villagers fail to provide the expected service due to lack of training and information. Third, rural tourism products are usually isolated and never marketed outside the district where the village is located. Similarly uncontrolled growth of tourism in certain rural areas puts pressure on the environment, energy usage, facilities and so on. The stress created by uncontrolled growth in rural tourism was supported by Nepal (2008) and Saarinen and Kask (2008).

Rural tourism aims to provide empowerment for the local community. This can be obtained through actively participating the villagers in providing homestay services, providing tour guide services, preparing the local cuisine, sightseeing, hiking, fishing,

diving and so on. Therefore, from the economic perspective, the benefits of rural tourism development can be listed as follows: -

1. Rural tourism creates various job opportunities, economic resources, and income.
2. Rural tourism can generate more tax collection for the government.
3. Rural tourism can attract inflow of foreign capital through joint venture and foreign tourist.
4. Rural tourism can increase the value of the exchange rate by increasing the demand for local currency though demand for tourism-based products.
5. It enhances the growth of cottage industries like rug weaving, handicraft and so on.
6. It can help to encourage diversity and less dependent on agriculture.

In contrast, the rural tourism development can create adverse economic impact because of the following reasons: -

1. It could be seasonal, thus depending on tourism might not bring consistent income for the villagers.
2. Villagers are not equipped with the adequate knowledge to deliver the quality service required by the tourists.
3. High demand for goods and services at the village may result in inflation. Thus, increasing the cost of living in a particular location.

From the social point of view, rural tourism development may benefit in terms of the following: -

1. Exposure of one's culture can ensure their identity is strengthen as the national culture.
2. They would be able to show their culture to the world and be proud of their identity.
3. Preserving the natural resources to create handicraft products with those materials can create intrinsic values for the nature.

The adverse effects of rural tourism development from the social standpoint are as follows: -

1. Tourist from various ideologies or culture visits the village. Ruining the features of the local community's culture by entertaining the tourists needs eventually distorts the villager's belief and norms.
2. Irresponsible behaviours like littering or indecent behaviour can create discomfort for the locals.

As for the physical perspective of rural tourism development,

1. By organizing and renovating the village, the quality of the landscape in the village can be improved.
2. Through basic investments through smart partnership, the villagers can benefit from better infrastructures, clean water, and healthcare system.

The adverse effect from the perspective of physical due to rural tourism development are.

1. Pressure due to overuse of resources in the village might lead to destruction and pollution.
2. Soil erosion, accumulation of waste and unplanned construction to cater for the needs in the rural area might destroy the quality of the land.

Studies including some recent ones, have debated the success and failure rate of the rural tourism or its effectiveness in resource conservation and economic benefits to local communities (Demirović et al. 2020; Gan 2020; Saarinen and Kask 2008). It has been found that rural tourism impacts are unlimited to social, economic, cultural, but it also acts as effective tools in resource conservation and management, and even in politics. Development of rural areas often cause dissimilar livelihood and socioeconomic results for local communities (Bernett and Dearden 2014). Evidently, in Korea for example, most of the local communities had benefited from income generation activities due to the economic returns gained through the rural tourism (Joo and Park 2008). However, rural tourism may also create conflicts, adverse outcomes, and as well as perceived benefits inequality among the communities.

Using evidence from Malaysia, Gan (2020) found and caution that the local communities may too overly optimistic about income generation from tourism activities at the community level and when the revenue from tourism is lower than expected, the perceived costs and efforts of tourism are amplified. Disparities of perception on the impact of socioeconomic impacts has been recorded in the east coast of Sabah (Abd Majid et al. 2018). They argued persistent inequality about perceived benefits among the communities is undesirable, especially in long run, because it potentially threatens the supports of future tourism initiatives in the area. Therefore, managing the perception of the local communities, who maybe have direct and indirect involvement in rural tourism, is critically in rural tourism planning and execution. Perception formation process is contextual subject to various factors (Litterer 1965), thus knowing communities' perception at specific location will contribute toward the development of rural tourism framework, consequently, enhance to understand the host tourism system and relationship that will emphasize co-management approach to promote a sustainable tourism practice (Wilson et al. 2001; Kunasekaran and Gill 2012) and may diminish the role of rural tourism in conservation conflict management (Gan 2020).

3 Methodology

The is quantitative study, aimed to investigate the perceived socioeconomic impact on the rural tourism development employed by the stakeholders along the West Coast of Sabah. Accordingly, survey method was exercised when seeking respondents' thoughts and perceptions (Shaughnessy and Zechmeister 1997). Using structured face-to-face survey method, respondents were requested to provide their opinions

according to the measurement items. The measurement items were suited from Oberholzer et al. (2010). Except for questions about respondent’s demographic, all items were operationalized using a five-points Likert’s scale (1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree).

The measurement items were translated to the Malay language from its original English version, which was deemed necessary considering the survey took place in the rural areas. The population frame for the study was inexistence. Thus, judgement sampling method was used involving local adult income-earners. The data collection started in September 2019 in Papar, followed by Kota Belud and Kundasang. The fieldwork took five months, which was concluded ahead of the implementation of the Movement Control Order (MCO) due to the COVID-19 pandemic.

4 Research Findings and Discussion

Based on Table 1, 316 respondents were surveyed from the three locations of the study. A total of 99 respondents which comprise of 31.3% came from Kota Belud, 115 respondents from Papar which consists of 36.4% and 102 respondents from Kundasang, which represents 32.3% from the total respondents.

The respondent’s demographic information was collected. The profile of the 316 respondents was illustrated in Table 2, which consists of gender, age group, level of education attained, length of residence at location surveyed, and reported monthly income. Out of the 316 respondents, 122 respondents were male which comprise 36.8% of the respondents. The remaining 61.2% or 194 respondents were female. The respondents were between 18 years old to 70 years old. The range is considered good as it enables the study to understand the changes in the socioeconomic factors based on the perspective of each generation. 12.3% of the respondents were 20 years old and below. 14.9% of the respondents belong to the age category between 21 to 30 years old. 21.9% of the respondents were from 31 to 40 years old meanwhile from 41 to 50 years old comprise of 29.7%. 16.8% of the respondents belong to the age group of 51 to 60 years old. Finally, around 4.4% of the respondents were aged between 61 to 70 years old. Thus, it can be concluded that the highest percentage of respondents belong to the age group of 41 to 50 years old.

In terms of education attainment by the respondents, 9.2% of the respondents did not report any formal education. Meanwhile 16.5% of the respondents received

Table 1 Respondents by research locations (n = 316)

Location of the study	Number of respondents	Percentage
Kota Belud	99	31.3
Papar	115	36.4
Kundasang	102	32.3

Table 2 Profile of respondents (n = 316)

Variable	Categories	Frequency	Percentage
Gender	Male	122	36.8
	Female	194	61.2
Age group	18–20 years old	39	12.3
	21–30 years old	47	14.9
	31–40 years old	69	21.9
	41–50 years old	94	29.7
	51–60 years old	53	16.8
	61–70 years old	14	4.4
Education attainment	No formal education	29	9.2
	Primary education	52	16.5
	Secondary education	144	45.5
	Tertiary education	91	28.8
Duration of residence	Less than 10 years	34	10.8
	11 to 20 years	46	14.6
	21 to 30 years	49	15.5
	31 to 40 years	57	18.0
	More than 40 years	130	41.1
Reported income	RM500 and less	107	33.9
	RM501 to RM1000	71	22.5
	RM1001 and more	138	43.6

primary level of education and 45.5% received secondary level of education. In addition, 28.8% of the respondents obtained degree. This means 90.8% of the respondents completed some form of formal education. This may serve as an indicator that the stakeholders are able to incorporate edu-tourism and eco-tourism without many difficulties in Kota Belud, Papar and Kundasang.

As for the duration of residing in the area, 10.8% of the respondents lived for less than 10 years in the village. Around 14.6% lived between 10 to 30 years in the location of study. The duration of 15.5% of the respondents have lived between 30 to 60 years in the village. Around 18% of the respondents lived between 31 to 40 years in the locations. Finally, 41.1% lived more than 40 years in the locations. This is an indicator that they have the knowledge on the natural and historical heritage of the site. This also shows that most of the respondents was able to see the changes in the socioeconomic factors in the location of study.

Most of the respondent earns an income of less than RM1000, where 33.9% earns RM500 and less meanwhile 22.5% earns between RM501 to RM1000. Less than half of the respondent's income is more than RM1000. This clearly indicates that almost half of the respondents earn below than the minimum wage.

Twenty-five percent of the respondents are engaging in farming, mainly at Kundasang and Kampung Sayap. This is followed by 17.7% who earns their living as businessman. Approximately 3.8% works as teachers in the primary school at the village. Unfortunately, only 17.7% of the respondents are actively involved as full-time homestay entrepreneurs, 1.6% as part-time homestay entrepreneurs and 0.6% in agrotourism. This means only 2.2% of the respondents are actively involved in tourism-based business. Supporting activities for tourism such as handicraft entrepreneurs, mural and portrait artist consists of less than 1% of the community respectively. (Refer to Table 3).

Despite the type of main occupations shows in Table 3, it was interesting to report that 289 respondents, or about 91.5%, viewed that they are somehow directly and indirectly involved in the rural tourism activities (Table 4).

Table 5 illustrates the details of their involvement. Among the highest tourism-based activities provider were fruit sellers as well as transport rental which equally accounted for 9.69%. It is followed activities that can be linked to agriculture (7.27%) and harvesting of forest related products (6.92%). This indicates that farmers and forest products collectors see themselves benefited from the tourism and opine that what they do for livings are somewhat related to tourism. There are respondents who are directly involved in activities like tour guide (5.88%), Grab drivers (5.88%), lodging (4.50%), cultural dancers (2.77%) and homestay (2.42%). Some are also involved by selling foods or engage in retail activities.

Table 6 shows the number of years the respondents were involved in tourism industry. Approximately 52.6% of the respondents have an experience of 10 years and above followed by those with less than 5 years (15.9%) and between 5 to 10 years (15.6%). Some of the respondents were unsure or did not disclose how long they have been involving in tourism activities.

Twelve items have been included to gauge the perception from respondents in the study. The items were distinguished into 3 impact, economic, social and environment. Of these 12 items, Q1 to Q5 were designed for economic impact, Q6 to Q9 for social impact, and Q10 to Q12 for environment impact. The descriptive statistics of these items, according to the three study locations (Kota Belud, Papar, Kundasang), are tabulated in Table 7.

Table 3 Main occupations of respondents (n = 316)

Occupation of the respondent	Frequency	Percentage
Agrotourism	2	0.6
Businessman	56	17.7
Cleaners	5	1.6
Cook	5	1.6
Farmers	79	25
General worker	3	0.9
Heavy vehicle driver	1	0.3
Homestay operators	5	1.6
Housewife	18	5.7
Musician	4	1.3
Photographer	1	0.3
Private sector	23	7.3
Public sector	15	4.7
Retirees	4	1.3
School bus driver	1	0.3
School canteen operator	1	0.3
School guards	7	2.2
Self-employment	31	9.8
Shop assistant	1	0.3
Student	29	9.2
Teacher	12	3.8
Unemployed	1	0.3
Refused to disclose	12	3.8

Table 4 Involvement of respondents tourism industry (n = 316)

Involvement in the tourism sector	Frequency	Percentage
YES	289	91.5%
NO	27	8.5%

As seen, the means and dispersion vary across all the aspects, which provide early indication that the perceived impacts about economics, social, and environmental are unequal. Nevertheless, the results show local communities of the three locations opined rural tourism development at their respective areas have contributed positively economically, evidenced by mean scores of greater than 3.00 for Q1 to Q5, across all the three locations. Their perceived benefits on social impact, however, are mixed at two localities.

Respondents from the Kota Belud and Papar viewed rural tourism development have not improved the social stand of the villagers, unlike their counterparts at Kundasang (Q8). Further, the folks in Papar also felt youth exodus have

Table 5 Type of involvement in rural tourism (n = 289)

Type of involvement in the tourism industry	Frequency	Percentage
Fruit seller	28	9.69
Transport rental	28	9.69
Agriculture base product producer	21	7.27
Forest produces sellers	20	6.92
Tour guide	17	5.88
Grab driver	17	5.88
Vegetable seller	15	5.19
Food suppliers	14	4.84
Lodging	13	4.50
Promoters of local products	10	3.46
Cultural dancers	8	2.77
Homestay	7	2.42
Retailers	6	2.08
Homestay assistant	6	2.08
Ecotourism	3	1.04
Kuih (Cake) sellers	2	0.69
TOTAL	289	100

Table 6 Years of involvement in rural tourism (N = 289)

Number of years involved in the tourism industry	Frequency	Percentage
Less than 5 years	46	15.9%
5 years to 10 years	45	15.6%
More than 10 years	152	52.6%
Undisclosed	46	15.9%

not been reduced by rural tourism development (Q9). Different opinions, however, were recorded from respondents Kota Belud and Kundasang. Generally, from social perspective, folks from Kundasang approved that rural tourism activities have benefited them as evidenced by mean scores above 3.00 for all the four items (Q6 to Q9).

The perceptual measurements showed respondents from the study localities viewed rural tourism development have generally not degraded the environment (Q11). They opined natural resources have not been overused and they generally believed rural tourism development have instilled awareness about sustainability of the natural heritage (Q12). Quiet encouragingly, when requested to provide view on impact to the environment, they generally approved that rural tourism have improved the environment (Q10). The positive views on the environment as a result of rural tourism development were recorded from all study localities. The current

Table 7 Descriptive statistics of measurement items

Aspect examined in the study	Location	Mean	Std. deviation	Min.	Max.
Rural tourism development has increased the purchasing power of the villagers by increasing job opportunities. (Q1)	Kota Belud	4.11	0.6787	2.00	5.00
	Papar	4.25	0.4412	3.00	5.00
	Kundasang	4.23	0.7400	1.00	5.00
Rural tourism development has created more economic activity through product development and increase in tourism-based activities. (Q2)	Kota Belud	4.19	0.5555	2.00	5.00
	Papar	3.96	0.6645	3.00	5.00
	Kundasang	4.22	0.6031	3.00	5.00
Rural tourism development has increased the property value due to the increase in the demand for the property or land in the area. (Q3)	Kota Belud	3.33	0.7922	1.00	5.00
	Papar	3.90	0.5400	3.00	5.00
	Kundasang	4.05	0.8516	2.00	5.00
Rural tourism development has increased the price of the goods and services thus increasing the cost of living in the area. (Q4)	Kota Belud	3.67	0.7593	1.00	5.00
	Papar	3.63	0.7318	2.00	5.00
	Kundasang	3.81	0.8557	2.00	5.00
Overall rural tourism development has benefited the villagers through increasing business opportunities through tourism-based activities. (Q5)	Kota Belud	3.63	0.6115	1.00	5.00
	Papar	3.73	0.5045	3.00	5.00
	Kundasang	3.96	0.6698	2.00	5.00
Rural tourism development has helped to increase the opportunity for the villagers to introduce their local heritage. (Q6)	Kota Belud	4.19	0.5795	1.00	5.00
	Papar	3.88	0.3005	3.00	5.00
	Kundasang	4.13	0.7550	2.00	5.00
Rural tourism development has improved the villager's communication skills among themselves as well as the foreigners. (Q7)	Kota Belud	4.23	0.5090	3.00	5.00
	Papar	4.10	0.2782	4.00	5.00
	Kundasang	4.32	0.6409	2.00	5.00
Rural tourism development has improved the social stand of the villagers. (Q8)	Kota Belud	2.68	0.6640	1.00	5.00
	Papar	2.99	0.3304	2.00	4.00
	Kundasang	3.07	0.7470	2.00	5.00
Rural tourism development has reduced the mobility of youth from the rural area to the urban area thus increasing the number of villagers. (Q9)	Kota Belud	3.09	0.9350	1.00	5.00
	Papar	2.97	1.0424	2.00	5.00
	Kundasang	3.90	0.8386	1.00	5.00
Rural tourism development has created an improvement in the environment. (Q10)	Kota Belud	4.32	0.6361	2.00	5.00
	Papar	4.08	0.2698	4.00	5.00
	Kundasang	4.23	0.7949	2.00	5.00
Rural tourism development has not overused or pressured the natural heritage in the area for profit. (Q11)	Kota Belud	3.50	0.6512	1.00	5.00
	Papar	3.73	0.4578	3.00	5.00
	Kundasang	3.54	0.6978	2.00	5.00
Rural tourism development has instilled awareness on the sustainability of the natural heritage to both villagers as well as the tourists. (Q12)	Kota Belud	3.85	0.7741	2.00	5.00
	Papar	3.41	0.5363	2.00	4.00
	Kundasang	3.57	0.6602	2.00	5.00

Fig. 1 Web matrix for mean score and location



results provide empirical evidence that tourism development have the potential in safeguarding natural resources and while generating economic benefits to the local communities.

Despite the three localities have recorded positive impact economically, socially, and environmentally, the ranges of mean scores of the localities under investigation are not equal. A quick snapshot in Fig. 1 showed respondents from Kundasang were the most pleased. Mean scores for Kundasang for almost every item linked to economic and social indicators were mostly highest comparatively. Another interesting revelation suggest that they have the most concerning opinions about the environment impact as their approval ratings across the three items are low comparatively among the study localities. The awareness on environment shown by data from Kundasang perhaps can be linked to its proximity to Kinabalu Parks, a UNESCO World Heritage. As such, people in the area may have exposed to campaigns and gained more knowledge about nature’s protection and conservation.

Table 8 shows the results of ANOVA analysis to examine whether there are significant mean differences among the three locations of study. Of the five items for economic impact, Q2 ($F(2, 313) = 6.198, p = 0.002$), Q3 ($F(2, 313) = 26.673, p = 0.000$) and Q5 ($F(2, 313) = 8.456, p = 0.000$) recorded significant mean differences while Q1 ($F(2, 313) = 1.529, p = 0.218$) and Q4 ($F(2, 313) = 1.623, p = 0.199$) were insignificant. As such, it can be concluded that opinions from the three locations that link to purchasing power (Q1) and level of price increase (Q4) may be the same. Despite there were support that rural tourism development have brought with it more economic activities (Q2) as well as business opportunities (Q5), respondents from Kundasang areas seem to feel gaining the most, and the gap compared to the

Table 8 ANOVA results

Item		Sum of squares	df	Mean square	F-value	Sig.
Q1	Between groups	1.198	2	0.599	1.529	0.218
	Within groups	122.637	313	0.392		
Q2	Between groups	4.646	2	2.323	6.198	0.002
	Within groups	117.321	313	0.375		
Q3	Between groups	28.633	2	14.317	26.673	0.000
	Within groups	168.003	313	0.537		
Q4	Between groups	1.985	2	0.993	1.623	0.199
	Within groups	191.504	313	0.612		
Q5	Between groups	5.996	2	2.998	8.456	0.000
	Within groups	110.973	313	0.355		
Q6	Between groups	5.982	2	2.991	9.291	0.000
	Within groups	100.770	313	0.322		
Q7	Between groups	2.682	2	1.341	5.545	0.004
	Within groups	75.700	313	0.242		
Q8	Between groups	8.844	2	4.422	12.356	0.000
	Within groups	112.014	313	0.358		
Q9	Between groups	54.162	2	27.081	30.212	0.000
	Within groups	280.562	313	0.896		
Q10	Between groups	3.272	2	1.636	4.582	0.011
	Within groups	111.766	313	0.357		
Q11	Between groups	3.301	2	1.651	4.507	0.012
	Within groups	114.630	313	0.366		
Q12	Between groups	10.421	2	5.210	12.032	0.000
	Within groups	135.538	313	0.433		

two localities are statistically significant. Significant opinion gap also detected in property prices increment (Q3). Respondents from Kundasang were impacted the most, while respondents from Kota Belud were being affected the least.

The study utilised four items (Q6 to Q9) to gauge the perception for social impact. All indicators have recorded significant gaps in the levels of perception among the three localities. The respondents generally pleased that rural tourism has been an enabler for them to expand their local heritage [Q6 ($F(2, 313) = 9.291, p = 0.000$)] and the opinion was strongest among the folks from the Kota Belud. They also saw people at their localities becoming better communicators [Q7 ($F(2, 313) = 5.545, p = 0.004$)], perhaps as resultant from the opportunity dealing with more tourists, locally and internationally. The most concerning finding of the study is perhaps about the impact of rural tourism in social issues [Q8 ($F(2, 313) = 12.356, p = 0.000$)], where two localities recorded perceptual approval below the score of 3.00. Expanding the issue further, matters that can be linked to social issues include level of crime rates,

public nuisance such as traffic congestion, among others. With this regard, perhaps these opinions provide early signals to stakeholders beyond the local communities that intervention may be required to mitigate situation from eroding further. Another potential adverse social that was brewing in the minds of respondents is about youth mobility, particularly involving Papar [Q9 ($F(2, 313) = 30.212, p = 0.000$)], where folks at felt rural tourism has not been effective in stopping the youth from migrating elsewhere.

The study has revealed there are significant differences about perceived impact on the environment, as evidenced by the three measurement indicators Q10 ($F(2, 313) = 4.582, p = 0.011$), Q11 ($F(2, 313) = 4.507, p = 0.012$), and Q12 ($F(2, 313) = 12.032, p = 0.000$). Although they generally agreed that the environment has improved, they were somewhat sceptical that the natural resources were not overused. The opinion difference may also be due to past experiences of the communities where those at Kundasang and Kota Belud were frequently experiencing major landslides and floods respectively, thus resulting more concerns about over usage of natural resources.

5 Conclusion

Rural tourism has been regarded as one way of eradicating poverty in the rural areas. The motivation to increase the standard of living encouraged stakeholders like government, tour operating agencies, educational institution, and the villagers to work hand in hand in developing this industry. Rural tourism is taking place in many areas, including rural areas in Sabah. Concentration in rural tourism development differed based on the geographical condition. As such, the socioeconomic impact on the local communities may be different as well. Thus, a study measured how the local communities perceive rural tourism development have impacted their livelihood, in terms of financial and physical economics, social and the environment to justify whether the development was consistent in all the village along the West Coast of Sabah.

The study concluded that rural tourism development has been generally well received by the local communities of Kota Belud, Papar, and Kundasang. These communities generally felt they have gained in various economical aspects especially in term of job creation and other revenue-generation activities. Nevertheless, careful policy considerations are needed to strike a delicate balance between economic growth and inflation, as progressive in economic activities potentially push up prices, which has been voiced by the communities who took part in the study. Due to globalization, the importance of rural tourism needs to be given more importance because in the long run their identity of certain traditional lifestyle, folklore, culture, and beliefs might become colourless and invisible. In addition, the geographical aspect of the development must consider the proper use of the environmental resources in the area. Two alarming signals that were picked up in the study, i.e., the negative perceptions on social stand and mobility of the youth. Effective measures

to identify the root causes for the negative perception among the local communities must be carried out. Erosion of perception must not be mismanaged. Further perception degradation may result not only diminishing and withdrawal of supports for future rural tourism initiatives, but it may even cause conflict or retaliation from the local communities.

The study found there are significant different of opinions from the three locations. This provides evidence about the complexity of when dealing with perception management among communities. Perception formation is complex and can be affected by many subjective factors that are contextual in nature. Rural tourism development is always considered a valuable effort because the cost of setting up the tourism activity is low, and the risks involved is also minimum. This is due to the existing natural resources and the cultural knowledge among the community. These however do not guarantee success. Stakeholder collaboration, particularly the local communities, is not only an advantageous (McComb et al. 2017), but is deemed critical for rural tourism success. With proper planning and organization based on community approach, rural tourism would contribute tremendously to the economic growth of various communities. This requires a strong synergy between the stakeholders like government, private sectors, trainers, villagers, and the tourists themselves.

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Malaysian Hotel Strategy in Compliance with Local Authority



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Abstract The paper discussed current business issues and challenges, as well as the current state of Halal tourism. From both an industry and exploration perspective, the travel industry observes the growing enthusiasm for Halal in the travel industry. Halal travel refers to any item or activity that is permissible for use or participation in the travel industry, as defined by Islamic teachings. As such, the achievement of the travel industry goal of creating and promoting Halal must be guided by the inclusion of Islamic lessons and standards in all aspects of travel industry activities. This paper examines the concept of Halal in the travel industry, as well as the components that make up the business. It illustrates a selection of currently accepted procedures in broad strokes. Additionally, the opportunities and challenges associated with developing and promoting Halal in the travel industry are discussed.

Keywords Halal tourism · Local authority · Pandemic · Sustainability · Tourism industry

1 Introduction

Tourism is a critical industry in any economy, but especially in developing economies. Meanwhile, the tourism industry is in a state of relative vulnerability. Due to ongoing issues, we know which pandemic Covid-19 is viruses that appear to be affecting the global tourism industry. However, there is still hope that the tourism industry will recover as a result of the pandemic. Looking for halal tourism, given the large and

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growing number of Muslims worldwide and current tourism trends, it seems appropriate to consider their unique requirements and the challenges and opportunities that Muslim markets present for segments of the industry. The proposed study will examine authority compliance hotels, an exciting development that demonstrates several critical characteristics of the demand for and supply of hospitality services in an Islamic context. To set the scene, the account begins with a brief overview of Islam's general level of adherence and the religion's influence on daily life, including tourism. Following that, the characteristics of authority compliance in hotels are discussed, as well as evidence of increased commercial interest and the implications for hoteliers of its adoption. Finally, some conclusions about the authority-compliant model's broader applicability are presented.

Halal tourism is a subcategory of tourism that caters to Muslim families who adhere to Islamic principles (Fadzilah et al. 2013). These hotels do not serve alcohol and provide separate swimming pools and spa facilities for men and women. Malaysia and numerous other countries are attempting to attract Muslim tourists from all over the world by providing facilities that adhere to Muslim tourists' religious beliefs. We are aware that not everyone is in favour of halal tourism. Some people see the benefits of halal tourism, while others do not, owing to the fact that halal tourism is growing and interesting. Halal tourism is viewed positively or optimistically by some. This halal tourism is gaining or regaining momentum on occasion. For instance, the tsunami on Thailand's Andaman Coast, which is still recovering from the December 2004 disaster, reveals three overarching travel motivators: nature (the area's beauty), people (the residents' welcoming attitude), and value for money (Rittichainuwat 2006). Thailand is regaining its footing following the tsunami, and halal tourism is expected to increase. At the moment, no internationally recognised standards exist for Halal tourism.

Halal' tourism is a growing market segment, as Muslim travellers seek destinations that adhere to their dietary, dress, and ritual requirements. 'Halal' is an Arabic term that refers to what is permissible according to Islamic teaching. Alcohol, pork, nakedness, and gambling are all prohibited. With a growing middle class and rising disposable income, many countries – Muslim or not – are vying for these travellers' attention. Malaysia, the United Arab Emirates, Indonesia, and Turkey are some of the most popular Muslim vacation destinations. Singapore, Thailand, and the United Kingdom are among the most popular destinations for non-Islamic or OIC (Organization of the Islamic Conference) travelers (Non-muslims and Non-muslims (n.d.)). Thailand, despite being a predominantly Buddhist country with a sizable Muslim population in the south, has proven to be a popular destination for Muslims, primarily from Indonesia, seeking affordable vacations and authentic Thai cuisine. In the United Kingdom, Muslim spending is expected to reach US \$4.1 billion by 2020, despite an increase in Islamophobic attacks in the aftermath of the terror attacks in London and Manchester (Stephenson 2014).

Malaysia is the number one destination for Muslim travelers, and the country has long been a hub for Muslim travelers. Malaysia's tourism policy ensures a hassle-free travel experience for all Muslim travelers, as the country's population is over 60% Muslim. It provides them with an environment that is conducive to their way of life.

Malaysia has long been a leader in the halal industry. It was one of the first countries to recognize Muslim tourism's potential. It quickly responded by enhancing and upgrading the facilities and services available to Muslim travelers who wish to adhere to their religious beliefs. Almost all of the country's prominent hotels, restaurants, and shopping malls now have prayer rooms, prayer mats, and timetables and Qiblas signs marked in rooms for Muslim guests to pray. The majority of shopping malls include Halal restaurants and prayer rooms to ensure that Muslim shoppers have a hassle-free shopping experience. Halal food is readily available throughout the country, and an increasing number of restaurants are certified Halal. Malaysian tourism has also launched a campaign to welcome Muslim travelers from the Middle East. Visitors to Kuala Lumpur, the country's capital, will discover a distinct mini-Arab town area called Ain Arabia, which evokes the spirit of Arabic and Middle Eastern cultures.

2 Context of Local Compliance

2.1 *Local Enforcement*

When it comes to local enforcement, the fact that Islamic hotels are a relatively new concept has resulted in a lack of knowledge and confusion about the subject. While research into innovativeness and local enforcement in the service industry is booming, our understanding of the antecedents and consequences of these two activities in hospitality management remains hazy. To address this issue, they propose that cultural dimensions are positively correlated with local enforcement, innovativeness, and firm performance. The findings' implications are discussed, as well as their limitations and future research directions.

Currently, the literature on Islamic hotels is sparse. Although the term "Islamic hotel" is also used to refer to authority-compliant hotels (Henderson 2010; Sahida et al. 2011) and (Rosenberg and Choufany 2009), the term has not gained widespread acceptance in either the academic or industry worlds. Shariah is an Arabic term that translates as "the path upon which Muslims should walk" (Non-muslims and Non-muslims (n.d.)). Thus, a hotel that complies with local government regulations can be defined as one that provides services in accordance with Shariah principles (Salleh et al. 2014). Not only will the local authority-compliant hotel or Islamic hotel serve halal food and drink, but the hotel's operations will also be run according to Shariah principles. However, even in the Middle East, there are no formal criteria for this concept, but a cursory examination of statements made by industry practitioners and analysts reveals widespread agreement on a set of attributes suggested by Henderson (2010).

2.2 Staffing

Additionally, the pessimistic view of hoteliers' ability to implement a strategy based on resource scarcity. One of the most obvious obstacles is the issue of women's employment. Women are considered significant participants in the tourism labour market; however, the extent to which they participate in SCH has been a source of contention. Samori and Sabtu (2014) and Razalli et al. (2009) noted that religious ideologies have kept women out of certain professions in the tourism industry. The researchers in this issue drew attention to the attire of female staff by observing local law enforcement officials.

Human and financial resources are scarce (Mohd et al. 2021). Examining labour shortages and their impact on the industry in virtually every geographic location consistently ranks among the most difficult challenges identified by hotels. In many communities, expansion of hospitality is constrained not by capital but by human resources. According to the International Society of Hospitality Consultants, the number one challenge facing the global hospitality industry is a shrinking labour force. The society recently convened to brainstorm global issues and prioritise them (Kasim 2009). The issue of attracting and retaining qualified female employees requires an understanding of the significance and implementation of halal activities in hotel operations. This was once a localised problem, but it is increasingly becoming a global one (Salleh et al. 2014).

Contributing factors include demographics, wage levels, a failure to adequately address qualified worker satisfaction, and a reputation for long hours and low pay. Hospitality professionals who are innovative have begun to develop novel strategies for attracting and retaining high-quality employees (Handerson 2008). By establishing a foundation, the lack of agreement among hotel operators and academics on the concept leads to specific interpretations of the exact requirements of a Local Authority Compliant hotel. Hotel operators are excessively focused on being the first, at the expense of properly implementing Local Authority Compliant. Despite these misconceptions about the Local Authority Compliant concept, De Palma Hotel Groups announced themselves as the first hotel in Malaysia and the Asian region to implement the concept (Sahida et al. 2011). De Palma rebrands their hotels by adapting the Local Authority Compliant concept from Islamic banking, adamant that if other hotels claim to be Local Authority, they focus exclusively on the external aspects of the concept, such as employee attire and association, rather than specialising in the internal aspects (Samori and Sabtu 2014).

2.3 Consumption

Another readily apparent difficulty is the absence of standards, specifications, and requirements that define this type of hotel branding (Henderson 2010; Rosenberg and Choufany 2009). The literature review revealed a need for a unique global trademark

for sharia hospitality standards, as well as global institutions responsible for authentication, verification, monitoring, and issuing and regulating certification systems (Stephenson 2014). In this context, several countries have established a certification system for Sharia-compliant activities. Malaysia Department of Islamic Development (JAKIM) is a government agency that has established a Halal logo and Halal Certification System that is available to food producers, industries, establishments, restaurants, and hoteliers who apply. JAKIM has recognised 51 halal certification bodies. JAKIM provides guidelines for hotels that must be followed prior to the Halal Certificate being issued (Fadzilah et al. 2013) and (Samori and Sabtu 2014).

Additionally, hoteliers' branding is critical for developing or even shrinking capacity hotels while remaining compliant with authorities. The majority of international brand hotels have declined to implement the Local Authority Compliant concept, citing the need for proper planning and the high cost associated with the large space required for gender segregation between men and women, for example. Additionally, it is clear that implementing the concept could have an effect on revenue generated primarily through food and beverage sales as a result of alcoholic prohibition. These are backed up by a statement from De Palma Hotels, which reported an initial 20% loss in revenue following the rebranding of their hotels as Local Authority Compliant. Fortunately, it was a temporary setback, as they are now earning more than 40% of their original sales, and it's worth noting that their staff turnover rates have decreased significantly since they began instilling Islamic values in their employees. Recognitions and accomplishments help establish their brand internationally and motivate them to continue branding the appropriate Local Authority Compliant hotels and serving as a benchmark for other hotels.

2.4 Market Segmentation

Market segmentation is becoming more prevalent as lodging chains narrow their focus on a specific segment of travelers. Additionally, brands are in competition. Some industry observers are concerned that franchisors will expand their brand portfolio to the point where investors who purchase from the same franchisor will compete directly with one another! Additionally, as the number of brands grows, consumers' ability to differentiate between them diminishes. Because the concept is considered "new" in the market, Malaysian researchers have not yet paid much attention to conducting studies on the subject, despite the fact that western research databases are growing. Indeed, and without exaggeration, the Local Authority Compliant study on hotel real estate is quite rudimentary.

Indeed, the reality of hotels is that they must segment their marketing in order to avoid losses, as has been mentioned repeatedly in reviews. Perhaps the most significant challenge is the decline in revenue from the sale of alcoholic beverages, which will have an effect on food and beverage profits (Razalli et al. 2009; Rittichainuwat 2006). Henderson (2010) argues that prohibiting alcohol has an indirect effect on reducing the number of authority figures who wish to dine exclusively at the hotel and

also on reducing the number of tourists who wish to stay at the hotel. Numerous hotels have taken action to address this issue. Certain hotels market themselves as the ideal location for conferences and meetings, while others, such as Rotana hotels, rely on high room rates to offset revenue losses from alcoholic beverages (Henderson 2010). Hoteliers' branding is critical for developing or even shrinking capacity hotels while remaining compliant with authorities. The majority of international brand hotels have declined to implement the Local Authority Compliant concept, citing the need for proper planning and the high cost associated with the large space required for gender segregation between men and women, for example. Additionally, it is clear that implementing the concept could have an effect on revenue generated primarily through food and beverage sales as a result of alcoholic prohibition. These are backed up by a statement from De Palma Hotels, which reported an initial 20% loss in revenue following the rebranding of their hotels as Local Authority Compliant. Fortunately, it was a temporary setback, as they are now earning more than 40% of their original sales, and it's worth noting that their staff turnover rates have decreased significantly since they began instilling Islamic values in their employees. Recognitions and accomplishments help establish their brand internationally and motivate them to continue branding the appropriate Local Authority Compliant hotels and serving as a benchmark for other hotels.

3 Conclusion

One effective strategy for gaining market share is to make halal food widely available in the destination initially, as this is a high priority for Muslim tourists visiting Muslim countries. Additionally, local authorities emphasized the importance of having Muslim-friendly hotels in the destination, or at the very least separate sections of hotels that serve only halal food and no alcoholic beverages. Additionally, the Local Authority stated that a Muslim-friendly airport is a good starting point for marketing the destination as Muslim-friendly. Future research will require the development of a model of Muslim-friendly destinations. To develop Muslim-friendly destination criteria, it is possible to conduct qualitative research first, followed by quantitative research. Malaysians view Halal tourism as a new area of research for all local communities, and additional research is needed to determine how to make non-Muslim destinations more welcoming to Muslim tourists by following the lead of local authorities. Local authorities' non-Muslim perceptions of Malaysian hotels. A study on halal tourism strategy could be conducted in Muslim and non-Muslim destinations.

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Determinant Factors of International Tourists' Length of Stay: Survival Analysis in the Case of Malaysia



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Abstract Malaysian government intended to transform tourism sector into a high-yield industry through Economic Transformation Programme (ETP) by 2020. Length of stay is a variable of the special interest for Malaysia to achieve ETP, due to its positive relationship to the tourism yield. Therefore, this paper analyzes to what extent the personal demographic, travel characteristics and purpose of travel are significant in determining the tourists' length of stay. A total of 385 completed questionnaires were used for data analysis. The results show that tourist longer stay is associate with mature, married, repeated visitation, tourist who stay in low cost accommodation, and those who travel for business and education. However, tourists short stay is associated with male, single, those who stay in 4 to 5 stars hotel, tourist travel companion with business associate, and travel for conference and event. The study is therefore advised that stakeholders like government and tour operators should consider these significant factors in planning their marketing strategies.

Keywords Survival analysis · Length of stay · Travel characteristic · Demographic · Malaysia

1 Introduction

Performance Management & Delivery Unit (Pemandu) (2010, p. 320) discovered that Malaysia's tourism growth in inbound receipts is driven by growth in arrivals, not yields. According to the tourism statistics, in 2009, 75% of Malaysia's growth was due to the increase of tourist arrivals compared to only 25% growth from yield. Pemandu

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(2010) compared the Malaysia's Compound Annual Growth Rate (CAGR) of receipts growth, arrivals growth, and receipts per arrival growth in five years (2004–2009) to its neighbouring countries; data showed that Singapore and Thailand were growing in a more balanced manner. Singapore's growth in arrivals (65%) and in yield (35%) while Thailand's growth in arrivals (42%) and in yield (58%). During 2009–2014, Malaysia's tourism growth was in balance, with 50% of arrivals growth and yield growth, respectively. This outcome might be resulted from implementation of ETP in 2010. However, the yield per tourist in Malaysia was still relatively low at MYR 2624 compared to MYR 3106 in Singapore and MYR 3785 in Thailand. Pemandu (2010) elicited the reasons of this loss which includes lower average length of stay, lower spend per day, and reliance on arrivals from short-haul markets. Therefore, Malaysia Government desires to focus on receipt per tourist rather than relying on the growth of tourist arrivals. One of the crucial variables to increase the receipt per tourist is to prolong the average length of stay.

In addition, Otoo et al. (2016) stated that both negative and positive impacts can result of tourists' length of stay, therefore the study analyzes the determinant factors of international tourists' length of stay in Malaysia by using survival model. This technique has been previously applied in length of stay literature by Barros et al. (2010); Barros and Machado (2010); De Menezes et al. (2009); Gokovali et al. (2007); Martínez-Garcia and Raya (2008); Peypoch et al. (2012) and Thrane (2012) aiming to examine the covariates of length of stay in specific destinations. Understanding the determinants of length of stay is crucial to the design of marketing strategies that promote longer stays, its highly regard with higher occupancy rates and revenues streams (De Menezes et al. 2008). Therefore, the purpose of this paper is to uncover how different individual socio-demographic profiles, travel characteristics, and purpose of travel influence length of stay.

2 The Empirical Evident of Length of Stay Tourism Research

Length of stay conditions the overall tourism impacts in a given economy. Stay longer at a destination may allow tourists to participate more activities, which increase their overall spending, sense of affiliation and satisfaction (Davies and Mangan 1992; De Menezes et al. 2008). However, Jaafar and Khoshkam (2014) found that length of stay has an effect on tourists' social perceptions and contributes to their dissatisfaction with the destination. Their findings indicated that tourist who stayed more than ten days were less satisfaction than those who stayed for less than ten days in Langkawi Island, Malaysia. The length of stay at the destination is crucial variable that determine the quality of travel experience obtained by the tourists during their vacation. However, assessing this variable is complex, given that the decision how many days to stay at a particular destination is part of multifaceted tourist decision process (Alegre et al. 2011). Many previous studies have researched the determinants

of socio-demographic, travel characteristics and travel motive in referring to length of stay context.

2.1 Demographic

Age, gender, education background, marital status, and occupation are five recurrent tourists' demographic variables in the studies dealing with length of stay at the destination. The prior studies proved that age have a positive relationship with length of stay (Alegre et al. 2011; Alegre and Pou 2006; Alén et al. 2014; Barros et al. 2010; Barros and Machado 2010; De Menezes et al. 2008; Gokovali et al., 2007; Martínez-Garcia and Raya, 2008; Peypoch et al. 2012; Thrane and Farstad 2011). This is because tourists with older age would absence of time and financial constraints; therefore, tend to undertake a longer trip (Martínez-Garcia and Raya, 2008). This segment is either retirement or freelance (Alén et al., 2014; Fleischer and Pizam, 2002). Fleischer and Pizam (2002) found that the relationship would turn out negative when it reaches certain age due to the health conditions.

Some studies discovered that men tended to stay longer at destination than women (Barros and Machado 2010; Peypoch et al. 2012). Whereas, De Menezes et al. (2008) have different result male tourists tend to experience shorter stay in Azores. Studies of Alén et al. (2014), Barros et al. (2010), Martínez-Garcia and Raya (2008), however, revealed that the gender variable is statistically insignificant to the length of stay. Another item is marital status, which has found to be insignificant to length of stay variable (Gokovali et al. 2007; Martínez-Garcia and Raya 2008). However, the findings of De Menezes et al. (2008) showed that married tourists tend to experience shorter stays in Azores.

Next, the level of education is also discovered significantly associated with the length of stay (Barros et al. 2010; Barros and Machado 2010; De Menezes et al. 2008; Gokovali et al. 2007; Martínez-Garcia and Raya 2008; Peypoch et al. 2012). Barros et al. (2010), Barros and Machado (2010), and Peypoch et al. (2012) unveiled that educated tourists are more likely to stay longer at a destination. Otherwise, De Menezes et al. (2008), Gokovali et al. (2007), and Martínez-Garcia and Raya (2008) disclosed that tourists with the lower level of education are associated with longer stays.

The level of occupation can determine the length of stay, as Martínez-Garcia's and Raya's (2008) results showed that the items: self-employed or being mid- or low-level employee have a negative effect on length of stay. Gokovali et al. (2007) stated that tourists who have skilled and unskilled jobs have a less possibility of staying longer compared to those with semi-skilled jobs. Tourists belonging to the salaried workers, civil servants, and 'level A' categories (i.e., company directors, managers) are more likely to stay shorter for a holiday, whilst retirees and students are more likely to stay longer (Alegre et al. 2011; Alegre and Pou 2006).

2.2 *Travel Characteristics*

This variable comprises of the accommodation type, travel mode, repeated visitation, and trip arrangement. With respect to the type of accommodation used during the trip, apparently, non-hotel accommodation such as campsites, apartments or own houses, and rented houses having clearly significant to the longer stay (Alén et al. 2014; Martínez-García and Raya 2008). This is due to the economic reasons, given the lower per capital dairy cost involved in staying the non-hotel accommodation. Martínez-García and Raya (2008) also discovered that there is a not significant difference in the length of stay when it relates to the different categories of hotels (i.e. 3-, 4-, or 5-star hotel). Similar results obtained by Alegre and Pou (2006), indicated that staying in guesthouses or hotels reduces the duration compared to apartment and villa accommodations.

The mode of travel (either travel alone or group) influences the length of stay. The past studies found that the tourists who travel alone are more like to increase their stay at a destination (Alén et al. 2014; Lawson 1991). The size of the travelling group increases to a certain number, the length of stay reduced (Alegre et al. 2011; Alegre and Pou 2006, 2008; Gokovali et al. 2007). This happen probably due to the economic constraints, particularly family trip (De Menezes et al. 2008). Repeated visitation also conditions the tourists' length of stay. Tourists visiting a place for the first time are more likely to have a shorter stay in comparison with the repeated tourists (Alegre et al. 2011; Alegre and Pou, 2006; Barros and Machado 2010; Gokovali et al. 2007). Tourists more familiar with the destination would tend to stay longer (Oppermann 1997).

The next variable is the travel arrangement, classified as organized trips, commonly called as 'package holiday' and fully independent traveler (Alén et al. 2014). Tourists who prefer an 'all inclusive' type of vacation would tend to have a lesser likelihood of staying longer than those who selecting the 'half-board' accommodation only (Gokovali et al. 2007). Independent tourists have a higher probability of staying longer compared to those who reserved or used with a tour package (Alegre and Pou 2006; Alén et al. 2014; Gokovali et al. 2007). However, Alegre et al. (2011) urged that booking a full board holiday is significant and increasing the length of stay.

2.3 *Travel Purpose*

The purpose of travel (push) to a destination affects the length of stay decision (Alegre and Pou, 2006; Alén et al. 2014; Barros et al. 2010; De Menezes et al. 2008; Martínez-García and Raya, 2008). Most of the studies found that the purpose of visiting friends and families had a significantly stronger effect on the length of stay than the other travel motives (leisure, business, and health treatment). Alén et al. (2014) illustrated that this travel motive is in regard to the type of accommodation

choices, for instance, tourists who travel for this reason often stay overnight in family members' or friends' houses, and thus tourists could save the accommodation cost and larger budget for prolonging the stay at the destination.

3 Duration Model

In early stage, only few articles available in the length of stay literature at certain destinations, which are mainly descriptive – how tourist profiles and type of trip affect the length of stay (Hsieh et al. 1997; Huang and Tsai 2003; Oppermann, 1995, 1997; Sung et al. 2001). Alegre and Pou (2006) examined the determinants of the length of stay at one of the Mediterranean's leading sun-and-sand destinations by using Binomial Logit model. Alén et al. (2014) argued that Negative Binomial model is more suitable due to it could overcome the bias problems arising from the discrete character of the dependent variable in Binomial Logit model. Alegre et al. (2011) used Latent Class Truncated Poisson regression, this model is to separate two tourist segments, characterized by a preference for either a short or long length holiday.

However, some scholars disclosed that values of exogenous variables may change during the stay and this creates conceptual problem in standard regression models. This issue can be handled by conducting a survival analysis (Gokovali et al. 2007; Martínez-García and Raya 2008). Therefore, Barros and Machado (2010) and Peypoch et al. (2012) used parametric survival model to investigate the length of stay of tourists in certain tourist destination. The selected models included Weibull model with and without sample selection (Barros and Machado 2010) and Fractional Polynomial survival model and Weibull model (Peypoch et al. 2012). Whereas, Barros et al. (2010), Gokovali et al. (2007) and Martínez-García and Raya (2008) analyze the determinant factors of trip duration by using semi-parametric and parametric survival model.

Semi-parametric Cox proportional hazard model, parametric Weibull model: a Weibull model with heterogeneity and a Weibull model with sample selection were used to analyze the length of stay of golf tourists in the Algarve, on the southern coast of Portugal (Barros et al. 2010). The results were similar to Barros's findings in all three models, but the Weibull with heterogeneity is the best-fit model. Parametric Log-logistic, Exponential, Weibull, Log-normal, Gamma and semi-parametric Cox model used in study of Martínez-García and Raya (2008) to analyze to what extent the personal characteristics of the low-cost tourist, those of the trip and stay and destination image are significant in determining the length of stay. According to the models' logarithm of the likelihood function criterion and the AIC criterion, the Log-logistic model was chosen and to compare with Cox model. The main results from both models were found similar (Martínez-García and Raya 2008).

In study of Gokovali et al. (2007), Cox semi-parametric and the Exponential, Weibull's and Gompertz's parametric methods were applied to analyze the determinants of tourists' trip duration at a destination. The study reports the results of Cox's and Weibull's regression were same. The main outcome from the studies of Barros

et al. (2010), Gokovali et al. (2007) and Martínez-García and Raya (2008) is that the similar results found through the semi-parametric and parametric survival analysis. However, there is relatively few studies used only semi-parametric Cox PH model (De Menezes et al. 2008). De Menezes et al (2008) examined the determinants of the tourists' duration trip in the Azores by using Cox PH model. This is because no empirical evidence on tourists' length of stay and unknown the distribution shape.

Obviously, the most popular model used to analyze this variable – length of stay is survival model, however this model for this variable not without critiques. According to Thrane (2012), a general feature of parametric survival models is that they are much more statistically complex than more familiar alternative, such as OLS regression model. Thrane (2012) suggested that if a research project resembles the cross-sectional data, no right-censoring, no time-invariant independent variables, the first important issue is to establish whether the proportional-hazard assumption is met or not. If it is not, the feasible multivariate models are the Cox model and the OLS regression model. Alén et al. (2014) elucidated that as the length of stay is a limited dependent variable, which is integer and positive, it fits within the dependent variable of data count models. Therefore, this paper follows Thrane (2012) findings without adopting the 'too simplistic' models like OLS regression but resorting the survival model.

3.1 Contextual Setting and Data

Malaysia is a country located in Southeast Asia and consists of 13 States (Johor, Kedah, Kelantan, Malacca, Negeri Sembilan, Pahang, Penang, Perak, Perlis, Sabah, Sarawak, Selangor, and Terengganu) and three Federal Territories (Kuala Lumpur, Labuan and Putrajaya). The country having a rich and varied cultural tradition, with enchanting islands along its coastline, vibrant festivals, spectacular skyscrapers, world heritage sites, and a rainforest reputed to be over a hundred million years old. It also shares land borders with Brunei, Indonesia, Singapore, Thailand, and maritime borders with Vietnam and the Philippines. Despite of the tourism receipts in Malaysia was keep growing since 1980s, it is only due to the increasing demand from the massive influx of international tourist arrivals but not the receipt per arrival. The main reason for this is low average tourist's length of stay. In fact, the average length of stay is keep decreasing from 6.8 nights in 2013, 6.6 nights in 2014 to 5.9 nights in 2016 (Ministry of Tourism & Culture of Malaysia, 2017). Short trip duration means to limited time in a destination and would lead to lower expenditure especially in the accommodation sector (Alegre and Pou 2006).

3.2 Sampling and Selected Variables

The research term used for quantitative sampling is probability sampling (Reis and Judd 2000). Probability sampling is chosen due to the respondents are randomly selected from the sampling frame (total of international tourists) and each tourist has a known, nonzero chance of being selected. The information was acquired during the tourists ready to back their home country, making it possible to obtain the accurate information such as actual length of stay and travel characteristics and therefore data were collected in five Malaysia International Airport's boarding areas (Senai Airport in Johor, Penang International Airport, Kota Kinabalu Airport in Sabah, Kuala Lumpur Airports Terminal 1 & 2). The population-sampling frame is around 5,768,943 international tourist arrivals in 2016 (came from selected region: Northeast Asia, South Asia, Oceania, North Europe, West Europe, and North America) and sample size is 402 respondents.

3.3 Survival Analysis

Estimators of recreational demand models frequently use continuous functional forms, such as ordinary least squares (OLS) (Thrane 2012). However, as mentioned above, the nature of trip duration introduces complicating reasons. Especially, stays occur in non-negative quantities or counted by nights/days. Several issues must be addressed when using survival model in tourism study: (1) the identification of the data set, i.e. cross-section versus panel data; (2) the censoring of data; and (3) the heterogeneity of the population analysed. First issue, as the paper adopts cross-sectional questionnaire data, thus time-invariant model or called as proportional hazard model will be applied (Wooldridge 2001). Second issue, Gokovali et al. (2007) concluded that questionnaire data is not censored. Third issue, ignoring heterogeneity results in asymptotic parameter underestimation (Barros et al. 2010). According to De Menezes et al. (2008), length of stay is a non-negative variable and represented by random variable T , with continuous probability distribution $f(t)$, where t is a realisation of T . The cumulative probability function $F(t)$ is:

$$F(t) = \int_0^1 f(s)ds = \Pr(T \leq t)$$

The survival functions $S(t)$ is:

$$S(t) = 1 - F(t) = \Pr(T \geq t)$$

Given that the spell has lasted until time t , the hazard rate $h(t)$ is to know the probability that it will end in the next short interval of time Δ . The hazard function is:

$$h(t) = \log_{\Delta \rightarrow 0} \Pr (t \leq T \leq t + \Delta | T \geq t) / \Delta$$

$$= \frac{f(t)}{S(t)}$$

With $f(t)$ being the probability density function. The hazard rate $h(t)$ is the rate at which the short period is completed after the duration t . Given that they last at least until t . Therefore, by estimating the hazard rate directly is more convenient than the survival function that computed through backward integration. Cox proportional hazard (PH) model is the covariates that have a multiplicative effect on the hazard function, thus satisfying a separability assumption:

$$h(t, x) = h_0(t)\exp(\beta_1x_1 + \dots + \beta_kx_k),$$

where $h_0(t)$ is the baseline hazard function that summarizes the pattern of duration dependence and is common to all persons, while $\exp(x^T \beta)$ is a non-negative function of the vector of covariates x , which scales the baseline hazard function common to all persons, hence controlling the effect of individual heterogeneity.

The PH attribute suggests that absolute differences in x imply symmetrical differences in the hazard ratio at each t . For some $t = t$, and for two persons i and j identical in all matters except with respect to the k th covariate, then a unit increase in the k th covariate induces the following symmetrical change in the hazard ratios:

$$\frac{h(tx_i)}{h(tx_j)} = \exp\beta_k A$$

The baseline hazard function $h_0(t)$ is left unspecified, yielding the Cox's PH model. However, this estimation procedure allows the data determine the shape of the hazard function. Since duration dependence can be very sensitive to the specified form, the Cox model is preferred when there is any doubt about the shape of the function (De Menezes et al. 2008).

The explanatory variables on the length of stay: tourists' demographics, travel characteristics and travel motives are examined. Several models were estimated by Cox's semi-parametric model, and parametric exponential, Weibull's and Gompertz's models. A test of Cox's PH model is based on the scaled Schoenfeld residuals and the result shows that the model fits the data (degrees of freedom = 35; $X^2 = 16.11$; $p = 0.9974$). For parametric models, to find the best fitting model, Log-likelihood and AIC values are compared. [$AIC = -2(\log \text{likelihood}) + 2(c + p + 1)$] Where c is the number of model covariates and p is the number of model-specific ancillary parameters. The smallest AIC value is the preferred model and largest log-likelihood value is best-fit model. In this case, Weibull model is chosen ($AIC = 878.05$ and $\text{Log-likelihood} = -402.03$). Thus, only the results of Weibull and Cox models are reported and discussed.

4 Results

4.1 Descriptive Analysis

Total 402 questionnaires were distributed to tourists in May to July 2017 but only 385 completed questionnaires were used for data analysis. The selected variables are: demographic (1) Age, (2) Gender, (3) Occupation, (4) Marital status, (5) Education; travel characteristics (1) Type of accommodation, (2) Travel companion, (3) Travel arrangement, (4) Repeat visitation; and travel purpose. The descriptive statistics from the sample data are presented in Table 1. The first column displays the independent variables and categories of interest, and second and third columns exhibit average stay and number of observations, respectively.

4.2 Survival Analysis

The data analysis is not involved censoring due to all of the information are available throughout the whole period under analysis (the actual tourists' length of stay). The standard errors have been estimated robustly given that, with person-period data, the assumed homoscedasticity is very questionable. The Table 2 reports the results of Cox's and Weibull's regressions. The result interpretation for survival analysis is different from that of normal linear regression. The coefficients of variables give the effect of an increase in explanatory variables on the conditional probability of ending a tourist stay. A negative sign indicates that as the value of independent variable increase, the hazard rate of tourists' length of stay decreases or the survival of tourists' duration increase and otherwise.

In general, both models yield similar results for most coefficients in the regression. The explanatory variable: tourists' demographics explain the length of stay. To more specific, age groups 50–59 years old and 60 and above have influence on the length of stay. Coefficients on tourists age 60 and above in both models are negative and significant, which indicates that their survival probability to stay is more than that of those who aged 18–29 years old, which is taken as a base dummy variable. Based on the result of Weibull model, tourists who aged between 50–59 years old have a comparatively smaller probability of staying longer than tourists who aged between 18–29 years old. Referring to the Table 1, the average length of age group 60 years old and above is 17.9 days and this group has highest mean value compared to other age groups.

The results of two models revealed that gender is statistically significant to the length of stay, where 1% in Weibull model and 10% in Cox's model. Male tourists have more probability to stay longer than female tourists do. In term of occupation, coefficients for private sector employee is negative and significant in both models, which means that people who work in private sector have a higher probability of staying longer compared to tourists who own a business. Housewife/homemaker and

Table 1 Descriptive statistics of the variables of interest

Variables	Frequency (%)	Average length	No. of observation
Age			
18–29 years old	36.90	14.96	142
30–39 years old	36.40	11.74	140
40–49 years old	9.87	9.82	38
50–59 years old	7.79	11.00	30
60 and above	9.09	17.91	35
Gender (Male)	44.94	16.10	173
Occupation			
Own a business	11.95	9.39	46
Private sector employee	49.61	12.15	191
Government servant/officer	11.95	12.46	46
Student	9.87	18.26	38
Housewife/homemaker	5.19	13.10	20
Unemployment at the moment	4.42	19.59	17
Retired	7.01	17.89	27
Marital Status			
Married	48.57	13.69	187
Single	47.79	12.89	184
Divorcee/widowed	3.64	11.86	14
Education			
Tertiary education	68.83	12.98	265
Post-secondary education	17.40	12.01	67
Secondary education	13.77	16.08	53
Accommodation			
4 or 5 stars hotel	54.03	9.86	208
3 stars hotel	25.45	10.46	98
1 or 2 stars hotel/ guesthouse	23.12	18.93	89
Rented house/ apartment	12.73	23.92	49
Friends and family house	5.19	16.50	20
Travel companion			
Alone	16.36	21.63	63
Spouse/partner	42.34	12.46	163
Family/relative(s)	17.40	9.96	67
Friends	28.31	10.86	109
Business associate/colleague(s)	5.71	7.05	22

(continued)

Table 1 (continued)

Variables	Frequency (%)	Average length	No. of observation
<i>Trip arrangement</i>			
Full board tour package	21.30	9.88	82
Independent travel	65.19	14.55	251
Accommodation through agent	10.13	7.46	39
Flight through agent	12.47	13.23	48
<i>Repeat Visitation</i>	66.75	13.25	257
<i>Purpose</i>			
Leisure/Holiday	88.31	12.20	340
Business	8.05	24.48	31
Visiting friends and families	4.94	13.84	19
Education	1.30	49.20	5
Conference/Event	1.04	3.75	4

unemployed at the moment were found statistically significant in Weibull model to length of stay. The coefficients of both housewife/homemaker and unemployed tourists are negative, have a higher inclination to stay longer compared to tourists who own a business. Statistically evidence in Weibull model shows that tourists who are status single or divorced/widowed tend to have a shorter stay in Malaysia compared to married tourists. However, there is no statistically significant found in Cox's model. There seems to be no statistical evidence that the education variable correlates with length of stay.

Concerning the evaluation of the relationship between travel characteristics and length of stay, all of the variables affect the length of stay. The type of accommodation appears to affect the length of stay, those who stayed at 1- or 2-stars hotel/guesthouse, rented house/apartment, and friends and family house have clearly significant higher survival rate. From Weibull model, an opposite result found whereby tourists who stayed 3 to 5 stars hotel have tendency to stay shorter in Malaysia. About travel companion, coefficients of family/relative(s), friend(s), and business associate/colleague(s) in both models are positive and significant, which signifies that people who travel with family member(s), friend(s), and colleague(s) would probably have a short length of stay in Malaysia.

Trip arrangement has less impact on length of stay, which only accommodation through agent found statistically significant. The coefficient of purchase accommodation through agent is positive and significant in both models ($p = > 0.5$). It explains that those who purchased accommodation through agent tend to have a lesser probability of staying longer in Malaysia. In addition, repeated visitor to Malaysia have higher probability of staying longer compared to those who first visited Malaysia. This is because the coefficient of repeat visitation is negative and significant in both Weibull and Cox's models. As for the evaluation of the findings on the travel purpose toward length of stay, tourist who visited Malaysia for business and education have

Table 2 The results of survival analysis

Variables	Weibull Model		Cox-regression Model	
	Coefficients	z	Coefficients	z
Age				
18–29 years old				
30–39 years old	0.211	1.44	0.082	0.63
40–49 years old	0.283	1.36	0.159	0.86
50–59 years old	0.323	1.57*	0.088	0.48
60 and above	–0.833	–2.12**	–0.993	–3.18***
Gender (Male)	0.366	3.08***	0.183	1.80*
Occupation				
Own a business				
Private sector employee	–0.350	–2.02**	–0.308	–1.81*
Government servant/officer	–0.163	–0.72	–0.071	–0.34
Student	–0.388	–1.12	–0.146	–0.57
Housewife/homemaker	–0.784	–2.03**	–0.423	–1.30
Unemployment at the moment	–0.756	–1.53*	–0.420	–1.24
Retired	–0.368	–0.81	0.036	0.10
Marital Status				
Married				
Single	0.332	2.47***	0.141	1.17
Divorcee/widowed	0.663	2.62***	0.227	1.15
Education				
Tertiary education				
Post-secondary education	0.065	0.44	0.067	0.52
Secondary education	–0.343	–1.43	–0.131	–0.81
Accommodation				
4- or 5-stars hotel	0.475	3.23***	0.099	0.80
3 stars hotel	0.216	1.61*	–0.092	–0.79
1- or 2-stars hotel/ guesthouse	–0.592	–3.43***	–0.583	–4.19***
Rented house/ apartment	–0.790	–3.05***	–0.537	–2.81***
Friends and family house	–0.699	–2.02**	–0.587	–2.17**
Travel companion				
Alone	–0.002	–0.01	0.130	0.53
Spouse/partner	0.253	1.38	0.169	0.97
Family/relative(s)	0.349	1.68*	0.323	1.63*
Friends	0.330	1.78*	0.390	2.28**
Business associate/colleague(s)	1.132	5.20***	1.011	4.95***

(continued)

Table 2 (continued)

Variables	Weibull Model		Cox-regression Model	
	Coefficients	z	Coefficients	z
<i>Trip arrangement</i>				
Full board tour package	-0.025	-0.08	-0.081	-0.29
Independent travel	-0.174	-0.57	-0.163	-0.62
Accommodation through agent	0.579	2.41**	0.449	2.10**
Flight through agent	-0.007	-0.03	0.008	0.04
<i>Repeat Visitation</i>	-0.313	-2.57***	-0.302	-2.69***
<i>Purpose</i>				
Leisure/Holiday	-0.331	-0.69	-0.142	-0.39
Business	-1.400	-2.87***	-0.860	-2.46***
Visiting friends and families	-0.062	-0.17	-0.440	-1.38
Education	-2.015	-2.19**	-1.410	-2.70***
Conference/Event	0.769	1.30	1.771	3.43***
Nobs	384		384	
Log-Likelihood	-402.025		-1868.546	

* ,** , and *** refer to the significance level at 10% , 5% , and 1% , respectively

larger probability of staying longer in Malaysia. However, the coefficient of conference/event in Cox's model is positive and significant, which indicates that the tourists who visited Malaysia for conference or event tend to stay shorter.

5 Discussion and Conclusion

This paper aimed at examining the significant determinants of tourists' length of stay in Malaysia by utilizing a questionnaire survey conducted in five Malaysia international airports in 2017. The duration model was utilized to estimate potential determinants. Several estimation methods were used, semi-parametric Cox's model and Weibull's parametric model were chosen, according to statistical tests (Log-likelihood and AIC). The findings reveal that the evidence regarding ways in which decision to stay for a certain length of stay is affected by various tourists' demographics, travel characteristics and travel purpose. To summarize, this study has confirmed demographics: age; gender; occupation; and marital status, travel characteristics: type of accommodation; travel companion; trip arrangement; and repeat visitation, and travel purpose have the impact on length of stay. It is important to note that the education is found no statistical evidence to correlate with length of stay, however, in previous studies, education was found significant to length of stay (e.g. Alegre et al. 2011; Alegre and Pou 2006; Gokovali et al. 2007; Martínez-Garcia and Raya 2008).

The demographical variable age has statistically influence in length of stay, senior that aged 60 years old and above would have higher probability of staying longer in Malaysia. This finding is similar to the study of Martínez-Garcia & Raya (2008). This is not surprising because non-senior have more financial commitment, and have limited recreational time and money allocated to travel budget compared to senior (Reece, 2004). Therefore, future study should focus on understanding the senior's travel patterns in order to design the marketing strategy for attracting more seniors to visit Malaysia. According to Barros and Machado (2010) and Peypoch et al. (2012), men tended to take a longer holiday compared to women, and this also proven in current study. People who work in private sector, homemaker, and unemployed have higher probability of staying longer in Malaysia than tourists who own a business. This is because these types of occupation have more recreational time for holiday (Martínez-Garcia and Raya 2008). Tourists who single and divorced or widowed has a negative relationship with length of stay, and this result is opposite with the study of De Menezes et al. (2008), whereby married tourists tend to experience a shorter stay.

Guesthouse, rented house, and friend or family house are found positively affect the length of stay, whereas, 3 to 5 stars hotel has a negatively impact on length of stay. This may be related to the effect of accommodation price, as the accommodation types with higher survival rates are those which are lower in price. As Alén et al. (2014) and Martínez-Garcia and Raya (2008) discovered that non-hotel accommodation such as campsites, apartments or own houses, and rented houses having a clearly significant to have longer stay (Alén et al. 2014; Martínez-Garcia and Raya, 2008). Tourists who travel with friends, family, and colleagues tend to have a short holiday in Malaysia. This is because the size of the travelling group increase, the length of stay reduced (Alegre et al. 2011; Alegre and Pou, 2006, 2008; Gokoali et al. 2007). This happen probably due to the economic constraints (De Menezes et al. 2008) and time constraint.

Travel arrangement: full-board tour package and independent travel have been found significant to length of stay previously (Alegre et al. 2011; Alegre and Pou 2006; Alén et al. 2014; Gokoali et al. 2007), however, this finding of study shows no statistical evidence. Except the variable tourists who purchase accommodation through agent was significant and has a negatively impact on length of stay. Tourists who is first time visitors would more likely to stay shorter compare to repeated visitor, this result is consistent with Alegre et al. (2011), Alegre and Pou (2006), Barros and Machado (2010), and Gokoali et al. (2007). This is due to the repeated tourists are more familiar with the destination (Oppermann 1997). In addition, the travel purpose explains the length of stay in this case, in which the business and education have positively influence the length of stay. This result is contrary with the study of De Menezes et al. (2008). However, conference and event are negatively influence the length of stay due to the conference and event is a short period activity.

In overall, policy makers should concern tourists' demographics: age, gender, occupation, and marital status for market segmentation. For example, if Malaysia wants to attract tourists with longer stays, tourism marketer should focus on seniors

who aged 60 and above due to their time availability and financial freedom. Additionally, tour operator also can promote short travel package to tourists who travel in-group. Given that higher prices (e.g. accommodation fee) seem to contribute to shorter stays, there is a trade-off between higher quality equal to higher prices and longer stays. The limitation is that the current study only investigates the demographic, travel characteristics, and travel purpose, further studies should be undertaken to examine other potential explanatory variables that would influence the length of stay for tourists. Understanding the determinants of length of stay allows those tourism marketers to make a destination more inviting to tourists, and finally to bring benefits to local economy. The duration model was also tested and found suitable for understanding the length of stay. Due to the Covid-19 Pandemic, the suggestion for future study is that survival model can be used to investigate the tourism businesses survival rate in the industry. For example, using resource fluidity, leadership and collective commitment, and strategic sensitivity as independent variable to test the survivability of tour businesses (Elali 2021).

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Influence of Health Literacy Towards Health Communication Competence Among Kelantanese: A Comparative Study



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Abstract Only 6.6% of Malaysian adults were found to have an adequate level of health literacy, though it can be considered as one of the most crucial and basic knowledge that should be possessed by every individual. Expected to be sick at least once in a lifetime, pressuring Malaysians to be literate about their health. It was known to the world of health-related research that this health literacy may help the individuals to competently communicate their health conditions to the healthcare providers, signifying the importance of this study to be conducted. This study applied a cross-sectional study design, was conducted to investigate the relationship between the domains of health literacy which comprised of health care, disease prevention and health promotion towards B40 Kelantanese health communication competence. By using a quota sampling, a total of 100 B40 Kelantanese from Kota Bharu and Bachok districts were approached, and each of the district was represented by 50 respondents. A set of self-administered questionnaires was used during the physical, face to face data collection process. The results from the correlational analysis revealed that there were significant strong positive relationships between domains of health literacy towards the Kota Bharu urban community's health communication competence, while in Bachok, the strength of the relationships was moderate. Other than that, multiple regression analysis has also shown the opposing findings on the influence of health literacy towards the health communication competence. For Bachok, none of the independent variable can predict the communication competence while for Kota Bharu, the results showed otherwise. Health care and health

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promotion were the domains that can affect the health communication competence among Kelantanese who live in Kota Bharu, leaving the domain of disease prevention as a non-predictor. Furthermore, a few recommendations have been suggested for the respective District and State Health Departments as well as suggestions for future researchers.

Keywords Health care · Disease prevention · Health promotion · Health literacy · Health communication competence

1 Introduction

The occupation as the medical doctors is indeed noble, with all the expectations for them to be a multi tasks person. In certain circumstances, these doctors sometimes are unfortunately being blamed if the healthcare consultations and services are not turning well. According to Hotvedt and Førde (2013), medical doctors or health professionals are more likely to be accountable for the medical errors rather than the patients themselves or the institution involved. Though it is not utterly easy to detect medical errors as some information might be concealed to prevent the implications of medico-legal issues (Arvinder Singh and Rashid 2017), patients are currently expected to be able to at least understand their empowerment and autonomy in making medical related decisions without getting ingenuously influenced by anyone. This empowerment can be fostered by the relationship of patient and clinician which considered communication as one of its fundamental components (Bailo et al. 2019). However, some research has indicated medical doctors are prone to overestimate their abilities in communication (Albahri et al. 2018; Kee et al. 2018). A study has found that health care competency and delivery can be efficiently improved via the communication training for pharmacy education (Jin et al. 2018). It was also discovered that there is a need for educational intervention among health professionals as a gap was found in the practices of health communication (Rajah et al. 2018). The study added, the failure to avoid medical jargon and the usage of simple language during patients' visits has been admitted by 19% of the health practitioners (Rajah et al. 2018).

Nonetheless, it is wrong to assume through conversation, communication has gotten through the parties involved because it is not necessarily the case. Medical professionals believe in their professionalism especially when they use technical language or medical jargon when communicating with their patients. The tone of the communication in conversing the medical language is considered by the health practitioners to be professional, though the messages intended are not necessarily delivered and appropriately understood. Thus, medical practitioners need to be responsible in ensuring the communication to be in a clear and simple manner, considering the health literacy of their patients (Rajah et al. 2018). Cited by Khan et al. (2011), it is beneficial for the patients to be able to understand their doctors as they will be more likely to share their health problems, understand the options of their treatments

and modify their behaviour accordingly to the health problems. Through effective communication, patients would be able to share essential information to their doctors in order to be accurately diagnosed for the problems that they have, while at the same time the doctors would have better understanding about the needs of their patients (Kee et al. 2018).

Consequently, there is a growing emphasis in these recent years on how important patient-centred care and patient autonomy are in medical field, indirectly reflecting the importance of effective communication between doctors and patients (Kee et al. 2018). According to Liu and Fang (2019), patients' dissatisfaction is consequently resulted from communication and familiarity problems especially for the patients who came to a non-preferred hospital. This is also supported by Kee et al. (2018), as the major underlying reason for patients' complaints is the inability to have a good doctor-patient communication. As a matter of fact, even when there is a slight change in terms of the healthcare provider's communication styles for instance patients are encouraged to ask questions and patients' opinions are addressed, may have a significant impact on the patients' satisfaction (Azizam and Shamsuddin 2015). This is supported by Ghahramanian et al. (2017), the quality and safety of health care can be endangered due to the communication disruption which subsequently lead to the disrupted of patients' satisfaction and safety as well as the medication errors. These studies have shown the importance of having a good practitioners-patients communication in creating a familiar, conducive and comfortable environment to the consumers.

In Malaysia, there is a serious problem with the level of health literacy among Malaysian adults as the statistics have revealed, only 6.6% of adults have the adequate level of health literacy (Institute for Public Health 2015). This health literacy issue has been discovered to have influential effects on several health outcomes for instance better patient-physician communication, health awareness and others. Besides, this whole issue of health literacy may seem to be unfamiliar for the none other B40 Malaysians. This B40 community group is the least expected group to have adequate health literacy, as the huge differences in terms of the socioeconomic status of the group, making it to have the difficulties in providing the best for the family. As a matter of fact, previous studies have consistently mentioned the influence of socioeconomic status towards an individual's general health. According to Arpey et al. (2017), findings have recognized how the individuals' health outcomes and the health care received can be influenced by their socioeconomic status. Physicians have perceived those who are from the low socioeconomic status are someone who are less likely to be good in terms of independence, rationality, responsibility and intelligence (Arpey et al. 2017). The researchers also added that these individuals are less likely to comply with the medical advice from the medical practitioners and show low possibility of showing up for follow-up sessions.

Besides, individuals who are health literate are competent to access, understand, judge and apply the health information that they obtain into the three domains of health literacy which are health care, disease prevention and health promotion. Health literacy will facilitate these literate individuals to involve in their own health decision

making, for instance by fully utilizing the healthcare services provided by the government and commit themselves in healthy lifestyles (Sørensen et al. 2012; Jaafar et al. 2021). A study in Malaysia has found that individuals with limited health literacy were more visible in disease prevention domain, while those with adequate health literacy were visibly present in the health care domain, whereas individuals who are outstandingly health literate were most present in health promotion domain (Jaafar et al. 2021). This reflected how people who are not literate to avoid from getting sick so as they know they will be in difficult spots if they are sick and people who are exceptionally literate will involve in activities that can improve their health because they know how important their health is. Further, according to World Health Organization (2013), tendency to decide on riskier health choices, lack of participation in activities of disease detection and health promotion, medication low adherence, frequent admissions and readmissions to hospital, are usually the outcomes associated to low health literacy. In fact, literature has revealed that individuals with low income are likely among someone with low literacy (Sørensen et al. 2012). This situation occurred due to their financial constraint which subsequently leading them to have lower level of educational background and disabling them to obtain more health information from various sources, other than the healthcare practitioners (Feinberg et al. 2016). Accordingly, three objectives were planned for this research which were (1) To compare the level of health literacy among Kelantan’s community; (2) To identify the relationship between health literacy and health communication competence among Kelantanese and (3) To determine the effects of health literacy domains towards Kelantanese health communication competence. Conclusively, this paper was constructed into four headings as followed: (1) Introduction; (2) Methodology; (3) Findings; and (4) Conclusion and Recommendations.

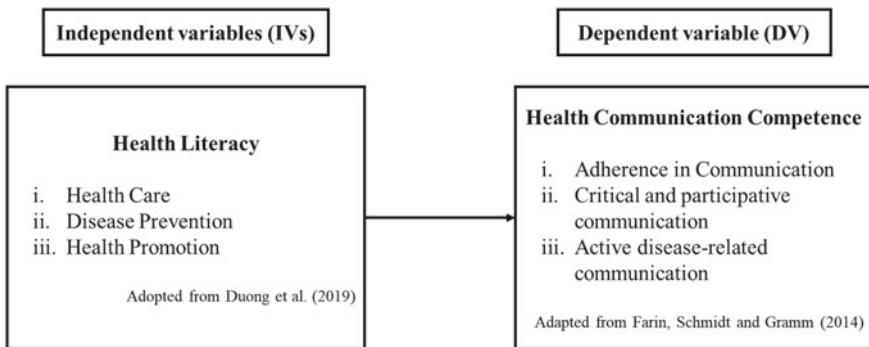


Fig. 1 Conceptual framework on relationship between health literacy and health communication competence

1.1 Conceptual Framework

Five research hypotheses had been articulated to achieve this study's objectives:

- H₁ Urban community has higher level of health literacy than sub-urban community.
- H₂ There is a relationship between health literacy and health communication competence among Kelantanese.
- H_{2a} There is a relationship between health literacy (health care) and health communication competence among Kelantanese.
- H_{2b} There is a relationship between health literacy (disease prevention) and health communication competence among Kelantanese.
- H_{2c} There is a relationship between health literacy (health promotion) and health communication competence among Kelantanese.

2 Methodology

This study applied the cross-sectional design where it was intended to identify the relationship between health care, disease prevention and health promotion (domains of health literacy) towards the health communication competence among B40 Kelantanese in Kota Bharu and Bachok. According to Wang and Cheng (2020), via this research design, the researchers would be able to measure the variables' relationship in a defined population. Besides, the major reason behind the decision of choosing Kelantanese as the sampling units was due to the fact that Kelantan has the lowest mean income for Malaysia's states in 2019 with RM4,874 (Department of Statistics Malaysia, 2020). Plus, for Peninsular Malaysia, it was found that Kelantan has the highest poverty rate, second in whole Malaysia after Sabah.

Other than that, this study has used quota sampling as its sampling method to ensure that the results of this study can be generalized to the population. According to Rukmana (2014), the selection of quota sampling can ensure the samples to be chosen according to the probability proportionate of the population's distribution. In details, the researchers have divided the samples into two subgroups of districts where these samples live. The district subgroups comprised of Kota Bharu and Bachok, where Kota Bharu is representing the urban community and Bachok represented the sub-urban community. In brief, the sample size for this study was 100 Kelantanese, consisted of 50 samples for Kota Bharu and another 50 samples for Bachok. Though many believe that a large sample size is an advantage in improving the generalizability of the study's findings which subsequently enable the researchers to draw a better conclusion, but considering the fact that Malaysia is now under the Movement Control Order (particularly in Kelantan), it is even difficult for the researchers to actually reach out these 100 B40 respondents. The situation become worsen as these respondents are not familiar with any kind of e-questionnaire, making the researchers to actually distribute the physical instruments to them. Nevertheless, this study has enough

samples to begin with, supported by Hair et al. (2018), a study would be able to proceed with a simple regression analysis when it has at least 50 samples and for most research situations, 100 samples would be sufficiently good. The data was collected within three weeks period and the researchers managed to get 100 responses by the end of the third week.

3 Findings

In accordance with the first research objective which to compare the level of health literacy among B40 Kelantanese living in Kota Bharu and Bachok Districts, a descriptive analysis will be conducted whereby all items score of the independent variable were transformed and standardized into unified metrics with a minimum score of 0 to 50, where 0 represented the lowest possible level of health literacy and 50 represented the highest possible level of the independent variable (Duong et al. 2017). Further, the score values were then interpreted by using the three level categories of limited health literacy with score of 0 till 33, sufficient health literacy with score of > 33 till 42 and last but not least, excellent health literacy with score of > 42 till 50 (Jaafar et al. 2021).

Based on the findings on the descriptive analysis, it was found that there was difference between the level of health literacy between the urban community in Kota Bharu and sub-urban community in Bachok. Kelantanese in Kota Bharu has higher level of health literacy in general as they have higher percentage for sufficient and excellent level of health literacy (80%) as compared to Bachok district (46%) (see Table 1).

Table 1 Comparisons on level of health literacy between Kota Bharu and Bachok districts

District	Domains	Limited health literacy (Score 0 – 33)	Sufficient health literacy (Score > 33 – 42)	Excellent health literacy (Score > 42 – 50)
Kota Bharu	Health Care	13 (26%)	32 (64%)	5 (10%)
	Disease Prevention	6 (12%)	39 (78%)	5 (10%)
	Health Promotion	4 (8%)	39 (78%)	7 (14%)
	Overall Health Literacy	10 (20%)	35 (70%)	5 (10%)
Bachok	Health Care	21 (42%)	24 (48%)	5 (10%)
	Disease Prevention	21 (42%)	26 (52%)	3 (6%)
	Health Promotion	18 (36%)	30 (60%)	2 (4%)
	Overall Health Literacy	27 (54%)	20 (40%)	3 (6%)

In details, the same findings revealed for each domain of health literacy comprised of health care, disease prevention and health promotion. The results emphasized how Kota Bharu district has more Kelantanese with sufficient and excellent health literacy in all domains of health literacy as compared to those from Bachok. These findings were supported by previous studies which found that urban or city community has higher level of health literacy as compared to those who lives in sub-urban and rural areas (Institute for Public Health 2015). According to Golboni, Nadrian et al. (2018), inadequate health literacy was higher in rural areas, in comparison to urban area. Consequently, the first research objective for this study was achieved and hypothesis (H_1) was supported.

The findings from the correlational analysis were tabulated in Table 2. The interpretation of the results will be using Cohen (1988) guidelines on the Pearson Correlation value (r) as the researchers will explain the direction and strength of the variables' relationships which were domains of health literacy and health communication competence. The results have shown that health literacy on health care, disease prevention and health promotion were significantly positively related to health communication competence among B40 Kelantanese who lives in Kota Bharu district ($r = .744, p < .01$; $r = .730, p < .01$; $r = .696, p < .01$ respectively). In the meantime, it was also discovered the similar pattern of significant positive relationships between the domains of health literacy towards health communication competence among B40 Kelantanese in Bachok district ($r = .367, p < .01$; $r = .439, p < .01$; $r = .476, p < .01$ respectively) (see Table 2).

The findings also confirmed that there is quite a difference in terms of the strength of association between the independent and dependent variables for both Kota Bharu and Bachok districts. The analysis revealed that all domains of health literacy were strongly related to health communication competence among Kelantanese who lives in Kota Bharu while the results showed otherwise for Bachok district. To be precise, there were moderate relationships between domains of health literacy and health communication competence among the B40 Kelantanese in Bachok. In addition, the findings also showed that there was difference between the correlation coefficient values between Kota Bharu and Bachok districts in terms of the relationship between the health literacy and health communication competence. For Kota Bharu, the Kelantanese health literacy was significantly, strongly and positively related to health communication competence ($r = .805, p < .01$) while for Bachok district, the relationship is a moderate one ($r = .488, p < .01$).

Hence, this is in line with the previous studies' findings, which conclude that health communication competence can be strongly predicted from the health literacy of the urban community as compared to the sub-urban community. This is supported by Chen and Chen (2020), who revealed that the disparity between rural and urban communities in the case of health literacy, may be explained by the inexperience of using internet to look for health information online. The less experienced sub-urban communities have inhibited them to conduct searches for health information. Nonetheless, the results for both Bachok and Kota Bharu districts have indicated that individual's health literacy is related to health communication competence in line with Koops van't Jagt et al. (2016), who stated communication competences are vital

Table 2 Correlations between health literacy and health communication competence

District	Variables		Health Literacy	Health Communication Competence	
Kota Bharu	Health Care	Correlation coefficient	0.881**	0.744**	
		Sig. (2-tailed)	0.000	0.000	
	Disease Prevention	Correlation coefficient	0.943**	0.730**	
		Sig. (2-tailed)	0.000	0.000	
	Health Promotion	Correlation coefficient	0.873**	0.696**	
		Sig. (2-tailed)	0.000	0.000	
	Health Literacy	Correlation coefficient	1	0.805**	
		Sig. (2-tailed)	–	0.000	
	Health Communication Competence	Correlation coefficient	0.805**	1	
		Sig. (2-tailed)	0.000	–	
	Bachok	Health Care	Correlation coefficient	0.876**	0.367**
			Sig. (2-tailed)	0.000	0.000
Disease Prevention		Correlation coefficient	0.878**	0.439**	
		Sig. (2-tailed)	0.000	0.000	
Health Promotion		Correlation coefficient	0.876**	0.476**	
		Sig. (2-tailed)	0.000	0.000	
Health Literacy		Correlation coefficient	1	0.488**	
		Sig. (2-tailed)	–	0.000	
Health Communication Competence		Correlation coefficient	0.488**	1	
		Sig. (2-tailed)	0.000	–	

**Correlation is significant at 0.01 level (2-tailed)

for better health results which can be optimized through individual’s health literacy. Therefore, the second research objective was achieved and hypothesis H₂, H_{2a}, H_{2b} and H_{2c} were supported.

Furthermore, the researchers have conducted multiple regression analysis in identifying the effects of the independent variables towards the health communication competence. The results from the analysis have been tabulated in Table 3, comparing both districts. As for Kota Bharu, it was revealed that the R² value was 0.659, in which

Table 3 Multiple regression analysis

District	Independent variables	Standardized Coefficients Beta	t	Sig.
Kota Bharu	Health care	0.461*	3.248	0.002
	Disease prevention	0.095	0.536	0.594
	Health promotion	0.354*	2.682	0.010
	R Square	0.659		
	F	29.604		
	Sig. F Value	0.000		
Bachok	Health care	0.023	0.127	0.899
	Disease prevention	0.210	1.097	0.278
	Health promotion	0.323	1.821	0.075
	R Square	0.255		
	F	5.237		
	Sig. F Value	0.003		

*Significant at 0.05 level

all domains of health literacy comprised of health care, disease prevention and health promotion explained 65.9% of the variance (R square) for health communication competence, with sig. F value of .000. Besides, the findings have also discovered that health care domain has the greatest influence towards health communication competence ($\beta = .461$, $p < .05$), followed by health promotion domain ($\beta = .354$, $p < .05$). Unexpectedly, one domain of health literacy which is disease prevention was the only domain that was found to have no effect towards the Kota Bharu citizens' health communication competence ($\beta = .095$, $p > .05$).

Meanwhile, for Bachok district, it was discovered that the R^2 value was .255, which implies all domains of health literacy only explained 25.5% of the variance (R square) for health communication competence, with sig. F value of .003. In comparison, the R^2 values for Bachok district has lower value as compared to Kota Bharu's value which means that more than 60% of health communication competence of the urban community in Kelantan can literally be explained by their health care, disease prevention and health promotion literacy. Nevertheless, the results from the regression analysis also have shown, none of the health literacy domain (health care, disease prevention and health promotion) may significantly affect the health communication competence among the B40 Kelantanese in Bachok ($\beta = .023$, $p > .05$; $\beta = 0.210$, $p > .05$; $\beta = .323$, $p > .05$ respectively). Though these findings were refuting the Pearson correlation analysis results, the conclusion can still be derived from the analysis. It can be concluded that health literacy is significantly related to health communication competence, but the domains were not necessarily having significant effects towards the dependent variable. Therefore, this has marked the achievement of the third research objective.

4 Conclusion and Recommendations

In a nutshell, urban community in Kota Bharu has higher percentage of sufficient and excellent health literacy as compared to sub-urban community in Bachok, for both general health literacy as well as for each domain of the independent variable. It was also discovered that the health literacy of B40 Kelantanese who lives in Bachok district was found to have a significant, positive, moderate relationship with health communication competence while for Kelantanese in Kota Bharu, their communication competences were significantly, positively and strongly related to the health literacy. Nonetheless, through regression analysis, none of the health literacy domains found to be affecting the health communication competence among Kelantanese in Bachok, while for Kota Bharu district, health care and health promotion domains were found to have significant effects towards the dependent variable.

Based on the findings from both correlation and regression analysis, it is suggested for Kelantanese who lives in sub-urban area to focus on improvising their level of general health literacy by working on their skills in reading, writing, listening and speaking health related information. These four basic skills will enable the individuals to make sure the reliability of the health information that they obtained. According to Chen et al. (2018), information from the social media and blogs are more trusted and used by the individuals with limited health literacy as compared to those which is from the healthcare professionals. This is supported by Sørensen et al. (2012), revealed individuals with limited health literacy will have more obstacles in correctly utilized accurate health information. Hence, it is very crucial for Kelantanese with limited health literacy to work on their skills in understanding the health information that they obtained, either from the professionals or from any other sources. Seeking help from people with adequate and excellent health literacy will also boost their motivation to learn if they are embarrassed to seek help from the professionals.

Meanwhile, for individuals who live in urban area of Kelantan for example Kota Bharu, it is advisable for them to focus on the domains of health care and health promotion as both were found to have significant effects towards the health communication competence. Individuals with low or insufficient health literacy can improve their health care domain by putting effort into understanding what they are capable of when they need to decide on their treatment or cares. This is especially important as previous study has found that patients with low health literacy are often remained silent and do not question what health professionals have delivered or transmitted to them (Belim and Almeida 2018). Though patients believed that they are not qualified to intervene with the health care delivery process, but it is important for the individuals to seek for clarification from the physician. Looking for easy and simple related health information prior health care visits, will at least make them understand what they will go through during the treatment. This will subsequently boost their motivation to ask questions from the professionals during the healthcare service provision.

In addition, it is also recommended for Kelantanese who lives in urban area to be literate about health promotion, in charge of engaging and responding to any health education activities. This is either in terms of health knowledge itself or the general activity which is organized by the local health care providers for instance programs of blood donor, health screening and immunization. Though these activities may not encourage interactive communication and enhance greater empowerment in health-related decision making (Nutbeam 2017), but they would at least be familiar with the health information used within the activities. Further, individuals can also improve their health literacy by engaging in healthy lifestyle behaviour. Searching for extensive information about diets, taking notes and applying the lifestyle to daily routine will indirectly empower individuals to be literate about own's health. Nevertheless, individual's empowerment in making own health-related decision should not be taken for granted especially by individuals with low health literacy as according to Veenker and Paans (2016), professionals should not only focus on the delivery of health information to the patients, but also help them to correctly use their autonomy as patients.

On the other hand, this study has faced a few limitations which put the researchers in a difficult situation especially during the data collection process. The first limitation was time constraint. The implementation of MCO in Malaysia has made the data collection situation become specifically worsen as the researchers were restricted to move around to physically distribute the questionnaires, collecting responses from the respondents. The second limitation was the study involved respondents from only two districts rather than the 10 districts of Kelantan. Therefore, the future researchers are suggested to conduct studies in a broader and wider population, in order to have a more generalizable findings that represent the whole state of Kelantan. Moreover, this study was also limited to identify the influences of health literacy and its domains towards the dependent variable, whereas there are many other determinants and indicators that have been proven in previous research, to influence the communication of the B40 community. The possible factors which may represent the independent variables in future research are the individual's demographic background, personality traits, behavioural and environmental related factors. Thus, future researchers are recommended to consider other independent variables to be included in their studies apart of the health literacy. Nevertheless, this study was successfully conducted in the required time, despite of having some obstacles during the data collection process.

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Mechanism of Brand Formation of the Tourism Industry During the Pandemic



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and Mykola Horodetsky 

Abstract The infrastructure of the hotel is important in the economy of Ukraine, the level of development of which depends on additional revenues to both local and state budgets. An effective international brand allows you to quickly overcome imbalances in certain market segments, replenish budgets at various levels, increase innovation, competition and create new jobs. The article discusses the scientific aspects of the brand's business on the topic of hospitality. The use of foreign experience in the hotel business, which is one of the ways to improve the efficiency of hotel enterprises in Ukraine, is studied. The mechanism of formation of the tourist brand of Ukraine is determined. It is established that you approach the formation of a positive image based on the promotion of your own brand. The stages of brand formation for the subject of the tourism industry are established. It is becoming clear that we need to focus our efforts not only on promoting goods or services in the market, but also on creating our own brand that can protect a company that competes with similar goods and services. The developed mechanism will help to systematize the process of creating a positive brand. In the current state of the travel services market, a stable competitive advantage should be to achieve differences for consumers from competitors by forming a set of measures to improve service quality and image of the company, strengthen its own brand, using a customer-oriented approach to customer service. The purpose of the article is to study the theoretical and practical principles of brand formation. Develop a mechanism for forming a hotel brand. The article considers the scientific aspects of brand formation. The strengths and weaknesses of Ukraine for the formation and development of the tourist brand have been studied.

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The effectiveness of the use of brand promotion methods is analyzed. The mechanism of brand formation is determined.

Keywords Brand · Tourist brand · Image · Tourist industry · Tourist enterprises · Consumer behavior · Brand promotion mechanism

1 Introduction

The coronavirus outbreak has been a major blow to the global and Ukrainian hospitality markets. Closed borders of states, cancellation of air connections, restriction of movement within Ukraine between regions and absolute isolation of countries from each other have provoked many problems in the tourism sphere. According to the latest data of the United Nations World Tourism Organization (UNWTO): in 2020 the number of tourists will decrease by almost a third compared to 2019. According to experts, 2020 was a difficult year for tourism development. In 2021, the state of the tourism industry changed for the better. Thus, according to the UNWTO, in the first quarter of 2021, international tours increased by 65% compared to 2020, but decreased by 85% compared to 2019, which carries approximately 260 million international trips compared to the level of the Pavid pandemic¹⁹. Under threat of reduction - 50 million jobs related to the tourism industry. This will undoubtedly affect the hospitality sector of Ukraine. In these crisis conditions, hospitality companies need to create conditions for image formation by supporting their existing brand. Transformational changes in the theory of branding, exacerbate the need for scientific research aimed at creating theoretical - applied approaches to branding in the activities of enterprises in the hospitality industry. From these positions the system approach forms a practical and methodical basis of scientific research. Solving the problem of strategic development of enterprises is possible only with the creation of competitive tourism potential. At the same time, companies need to take into account several important factors that affect the effectiveness of branding in the strategic development of enterprises, namely those that involve the study of external and internal environment, customer relations, strength and activity of competition.

2 Literature Review

Many works of foreign scientists are devoted to the study of theoretical and practical bases of branding, among them: D'Alessandro D., Kapferer J., Keller K., Seddon J. and others. Problems of brand introduction and branding in Ukraine were studied by the following scientists: Bovsh LA, Boyko MG, Gerasimenko VG, Groshev IV, Danylenko MI, Zozulov OM, Lapitska LL., Mazaraki AA, Mykhailychenko AI, Poltavska OV, Primak TO, Stepanicheva EV etc.

Research and practical experience show that now the success of the hospitality industry must have a strategy of the hotel business brand, aimed at forming consumer loyalty. The “value” of a hotel business brand is determined by the consumer’s willingness to buy a hotel product at a higher price in the presence of similar hotel business products of other brands on the market. In the conditions of modern business it is not enough to create a quality product or service. It is necessary to use tools and techniques to promote the brand. Properly selected system of ways to promote the brand - the key to success of the company (Lapitka 2017).

In the Oxford Dictionary, “a brand is a whole set of ideas, ideas, images, associations about a particular product, which has developed in consumers and which tells them:” Yes, this is exactly what I need to buy.

The American Marketing Association’s definition is more specific: “a name, term, sign, symbol, or design, or a combination of all, intended to identify the goods or services of one seller or group of sellers, and to distinguish goods or services from goods or services. competitors (Kovalev and Shiyan 2021).

According to I. Ya. Rozhkova, branding is an activity to create a long-term advantage to the product, based on the joint enhanced action on the consumer of the trademark, packaging, advertising appeals, materials and sales promotion activities and other elements of advertising, united by a certain idea and a characteristic unified design (Butnik-Siversky 2021).

Teletov OS defines branding as an activity to create a long-term product advantage, which is based on the impact on the consumer of a set of elements, such as trademark, packaging, advertising, sales promotion materials, combined with a certain idea and design, distinguishing the product from competitors and create his image (Vaneken 2017).

Domestic scientists believe that branding is a process of creating a brand and managing it (Vedmid 2003). They also found that branding and its organizational and functional implementation is a brand principle of management (brand management), which consists in the allocation of individual brands in independent marketing objects, as a common tool for promoting goods on the market (Bear 2016).

We agree with the definition of Nazaykin O, according to which branding is a process of creating and developing a brand, the main means of product differentiation, a tool for promoting goods and services on the market and creating long-term relationships with consumers based on relevant values embedded in the brand (Hotel business Hotel chains 2021).

Analyzing various definitions, the authors identified 5 main categories on which scientists rely when formulating the concept of “brand” (see Table 1).

The complexity of unambiguous formulation of the brand can be explained by several reasons:

- The authors often describe not the brand itself, but the result of its action - the acquisition of special significance for the consumer, the creation of added value, reducing risks for both the company and the buyer. This approach depicts the impact of an existing and well-functioning brand, but does not provide an understanding of the primary nature of the brand, its creation and origin;

Table 1 Thematic classification of the concept of “brand” along with representative authors

Brand features	Characteristics of the definition	Authors
A set of components of the brand	A brand is a name, design, symbol, or a combination thereof, designed to identify the goods or services of one seller or group of sellers and to differentiate them from competitors (American Marketing Association 2013)	American Marketing Association (1960), P. Kotler (1996), D. Aaker (1991), T. Votkins (1986), P. Kókh (1994), Ж.-H. Kapherer (1995), A. Chumikov (2003), U. Nestereva (2006)
Set of ideas	A brand is a set of stable associations that arise in the mind of the consumer when interacting with a product/service (Feldwick 2019, p. 10)	G. Newman (1957), P. Martiniu (1959), A. Pitcher (1985), K. Keller (1996), P. Feldvik (1996), D. Ogilvi (1985), G. Gregori (2001), S. Garkavenko (2002), M. Kupchynska (2004), V. Orlov (2004), A. Starostina (2005), A. Fedorchenko (2005), Sh. Iaroshenko (2005), E. Rudaia (2006), F.-R. Esh (2008), N. Feinshtein (2008), L. Barnet (2011), E. Hendli (2012)
Value purpose	A brand is an individualized product to which the consumer attributes increased value (Kokkinaki and Ambler 2021, p. 5)	G. Jones (1986), P. Farkuher (1989), G. Merfi (1992), A. Volf (1993), P. Doyl (1994), K. Park (1994), L. de Chernatoni (1994), M. McDonald (1994), T. Ambler (1999)
Communication with the consumer	A brand is a set of expectations, memories, stories and relationships that, taken together, explain the consumer’s decision to choose one or another product (Godin 2009)	L. Vunderman (1996), B. Aizenberg (2006), D. Knapp (2006), S. Godin (2009), H. Koen (2011), G. Sigel (2011)
Company identification	A brand is a sealing of a company’s mission, its goals and aspirations, which are expressed through corporate statements and representations (Matters et al. 2021)	V. Varadaraian (2006), B. McRei (2006), D. Antonucci (2009), L. Geller (2012), M. Kleimen (2016), D. Kerpen (2015)

Source: formed by the authors on the basis (American Marketing Association; Feldwick 2019; Kokkinaki and Ambler 2021; Godin, 2009; Matters et al. 2021)

- Brands can change over time, lose their value or replace it with another. The architecture of a brand provides for its growth or transition to another direction. This leads to the emergence of new definitions, which are based on new rounds of brand development. In this case, earlier formulations become obsolete and irrelevant;

- A significant problem in defining a brand is its associativity and emotional component. Sensory characteristics are highly individual for each person. One person's perception of a brand may be the exact opposite of another's perception, and it may deepen over time, creating new connections and relationships. This does not preclude the possibility of a logical and realistic approach to brand formulation, but the assessment of subconscious influence will often be subjective, because the consumer does not always understand the cause of certain feelings;
- the definition can be formulated on the basis of an existing brand of a particular company (or several similar companies). Thus, enterprises that differ significantly in size, approach to doing business, positioning, etc. are not taken into account (Blazhei 2019).

The problem of forming a competitive brand of the hospitality industry during the post-transmission transformation has not been considered in the works and requires a more detailed scientific substantiation.

3 Research Methodology

Based on the critical analysis, it is established that the purpose of the article is a theoretical analysis of the tourism industry of Ukraine to develop a methodology for forming a tourism brand in terms of pandemic risks. The comparative nature of the study of the problem of innovative re-equipment of enterprises has contributed to the use of a set of general scientific methods, such as abstraction, analysis and synthesis, modeling, elimination of factors influencing the object of study. The main research methods are: statistical, expert, method of expert assessments - to determine the level of threats and opportunities for the development of the tourism brand; SPACE method - construction of a matrix of SPACE-method of the tourist industry of Ukraine on which the modern direction on four factors is visualized and the strategy of development of a tourist brand is analyzed; method of imitation - to provide the optimal set of elements that clearly characterize the individual elements of the methodology of formation of the tourist brand. The information base of the research is statistical data of the State Statistics Service and the Ministry of Finance of Ukraine, reporting of enterprises of the researched market, domestic and foreign periodicals, results of marketing researches of consulting companies, information and communication sites on the Internet, materials of domestic and international conferences and seminars. Author as a result of his own research.

4 Results

In today's post-pandemic environment, it is not enough to create a quality product or service. It is necessary to use tools and techniques to promote the brand. Properly

selected system of ways to promote the brand - the key to success of the company. There is now a revolution in business due to the quarantine caused by COVID-19 pandemic. These are significant changes due to the growing involvement of Internet technologies in business, globalization, integration of capital markets, the transition from the priority of physical capital to the priority of brand capital. Thus, it is necessary to apply a quantitative approach to determine the value of the brand, especially in the current economic and financial crisis of enterprises during a pandemic. The authors believe that in the evaluation of brands it is necessary to apply a fundamental approach based on the inherent value of the brand, which is a consequence of its ability to generate demand. The rating is based on the dollar value of brands, which is an estimate of the current value of future cash flow from the use of the brand (Kompanets et al. 2020).

If the brand acquires an image of high quality, then consumers expect to receive the same quality in all structural objects. Standardization is changing and different marketing policies reduce the value of the brand. Taking into account the latest data for 2019–2021, the international agency Interbrand has identified a volume of 100 brands of well-known global companies according to its own methodology. There are significant changes in the dynamics of companies' profitability and brand development due to the impact of the COVID-19 pandemic. In Fig. 1 presents 10 brands by company revenue and dynamics of change (BGB-Interbrand Archive 2021).

Global trends show that companies that provide information services to society have large profits. From mid-2019, revenues of such global information brands as Amazon, Google and Facebook are growing. Also during the quarantine of COVID-19, the previously unknown company Zoom broke into the 100th place, increasing its profits by 4481 million US dollars. Such dynamics of indicators is connected with the country lockdowns caused by a pandemic, and transition of all world to the digitized communication.

Significant changes have also taken place with Ukrainian brands. MPP Consulting presented a rating of the 100 most expensive national brands in 2020. The first 10

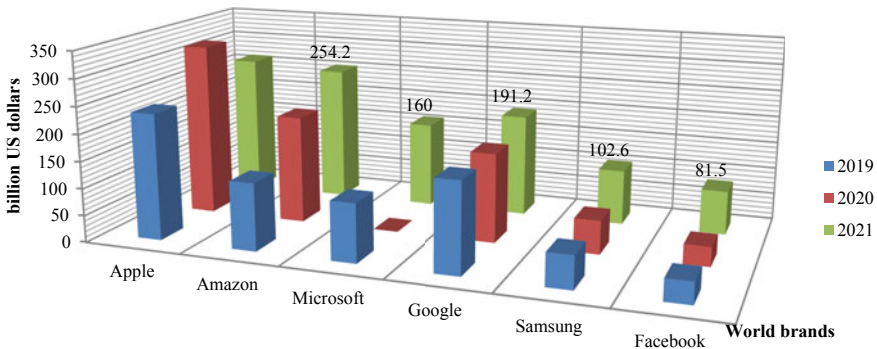


Fig. 1 Ranking of brands of companies in the world according to the evaluation criteria of Interbrand. *Source:* formed on the basis of BGB-Interbrand Archive (2021)

included: Morshynska, Nova Poshta, Rozetka, Roshen, ATB, Privat Bank, Sandora, Khortytisia, Khibny Dar, Nasha Ryaba. Over the past crisis year, the total value of the first hundred Ukrainian brands increased by 1.4%, and now stands at \$ 6.2 billion (Glavkom 2021).

In times of global economic instability, a strong brand serves as a “buffer” for businesses, ensuring the smooth passage of the recession in the economy and declining demand. During the COVID-19 pandemic, companies do not use brands at full capacity or, worse, do not understand that the brand is an integral part of the company, which is simply necessary for it to be profitable and has not lost its popularity among customers.

Currently, the tourism sector is in critical condition. The coronavirus pandemic and the harsh anti-epidemic measures imposed by various countries have accelerated the transformation of world tourism. The industry is losing hundreds of billions of dollars and millions of jobs. But at the same time digital startups travel tech are entering the market, new opportunities for individual tours and formats of international cooperation are emerging. Experts from the Organization for Economic Cooperation and Development (OECD) are convinced that the current crisis is an opportunity to create a more sustainable tourism economy and the basis for the formation of a new competitive brand in the tourism industry.

On the basis of the Kyiv National University of Trade and Economics, 4th year students conducted a comprehensive marketing study of the impact of COVID-19 quarantine restrictions on the tourism industry in Ukraine. For the weight of the criterion was taken 10 b. It is now determined that one of the most affected by the quarantine restrictions were tourist, resort and recreational facilities, which have almost completely ceased their activities (see Table 2).

For a generalized assessment of the market position of hotels operating during quarantine, the SWOT method was used for analysis of the external environment of the tourism business of Ukraine.

As a result of the SWOT-analysis it is seen that most of the factors of the macro-environment of enterprises are in a negative state. The state does not promote comfortable and intensive conditions for the development of the tourism business in the market. However, at the moment, the hospitality industry has more opportunities than threats. This is due to the fact that the hotels that operated during the quarantine are networked with well-established global brands and have foreign investors. The main threats are from the purchasing power of the population of Ukraine, but the hotels themselves attract tourists from abroad and therefore will not lose their full target audience.

The general assessment of the tourism industry was studied using the SPACE method and is given in Table 2. Each of the criteria consists of a list of factors that are expressed in the relevant indicators.

To assess the financial strength of the tourism industry was selected:

- competitiveness of the industry - indicators of Ukraine’s market share, profitability of sales and competitiveness of tourist products;

Table 2 Analysis of opportunities and threats of the tourism industry

Factors	Importance, points B_i	Favorable change (opportunity)		Adverse change (threat)	
		Probability, P_{γ}	$P_{\gamma} \cdot B_i$	Probability, P_{φ}	$P_{\varphi} \cdot B_i$
European integration of Ukraine	9	0,8	7,2	0,2	1,8
Relations with CIS countries	8	0,7	5,6	0,3	2,4
Business taxation	6	0,5	3	0,5	3
Purchasing power of the population	10	0,1	1	0,9	9
Dissemination of fashion trends of minimalism, high-tech style	9	0,8	7,2	0,2	1,8
New technologies in the hotel business	8	0,7	5,6	0,3	2,4
Number of new customers	4	0,3	1,2	0,7	2,8
Coordinated work of employees	6	0,4	2,4	0,6	3,6
Access to domestic resources	5	0,8	4	0,2	1
Access to foreign resources	9	0,7	6,3	0,3	2,7
Competition	7	0,8	5,6	0,2	1,4
Total:			49,1		31,9

- the attractiveness of the industry is determined by its level of profitability, stage of the life cycle, dependence on market conditions;
- stability of the industry - the stability of profits, the level of development of innovation and marketing and advertising opportunities.

Each indicator, which characterizes the key criteria, was evaluated on a five-point scale based on a comparison of the actual values of financial ratios with their normal level for the enterprise and on the basis of studying statistical information on the economic situation of the tourism industry.

From the table. Figure 2 shows that the level of competitiveness of the tourism industry of Ukraine has 3.6 points, which indicates high opportunities for competitive behavior, which contributes to the attractiveness of the industry (3.3 points), but lately the level of its stability (2.6 points) is lower. This is due to the constant influence of

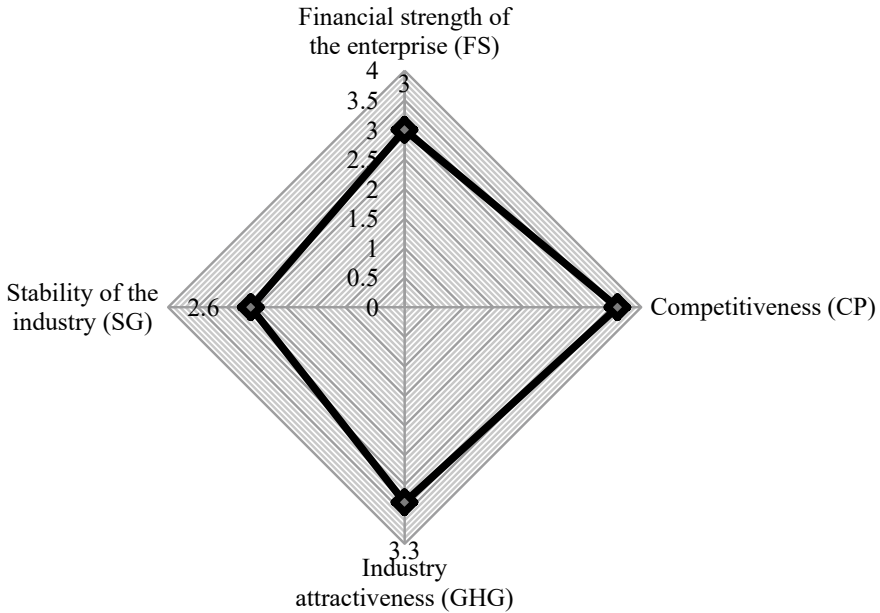


Fig. 2 Matrix of SPACE-method of the tourist industry of Ukraine

external factors and the COVID-19 pandemic, including political and economic, on the activities of the tourism industry.

The analysis made it possible to identify the main strategic directions of the tourism industry of Ukraine in the current crisis conditions associated with the COVID-19 pandemic. To visualize the obtained data, a matrix of the SPACE-method of the tourism industry of Ukraine was built on four factors: economic potential, competitive advantages, attractiveness of the industry, stability of the environment (see Fig. 2).

To determine the strategy of development of the tourist brand of Ukraine, the vector of the recommended innovation strategy in the SPACE coordinate system was constructed.

The beginning of the vector enters at the origin (x):

$$x = PG - KP, \tag{1}$$

where GHG - the attractiveness of the industry, KP - the competitiveness of the tourism industry.

The end of the vector is in the coordinates (y):

$$y = FC - CG, \tag{2}$$

where FS - financial strength, SG - stability of the industry.

Therefore, according to the data in Table 2, it is possible to determine the vector of activity of the tourist branch of Ukraine:

$$x = 3,3 - 3,6 = -0,3; \quad y = 3,0 - 2,6 = 0,4.$$

Data analysis Table 3 and Fig. 3 allowed us to draw the following conclusions: the vector of the recommended basic development strategy for the tourism industry of Ukraine is in the lower right square, which corresponds to the basic competitive strategy. This strategy will bring the country's tourism industry to a higher level by transferring the existing advantages to a low-competitive area. This will increase profitability and determine the directions of development of the tourist brand of Ukraine.

Table 3 Score criteria according to the SPACE method for the tourism industry of Ukraine

Criteria	Score, points	Load	Balanced score, points
<i>Financial strength of the enterprise (FS)</i>			
Return on investment	2	0,3	0,6
Profit dynamics	4	0,3	1,2
Level of financial stability	3	0,4	1,2
General evaluation of the criterion			3
<i>Competitiveness (CP)</i>			
The share of the tourism industry in the international market	2	0,2	0,4
Competitiveness of tour - products (services)	4	0,6	2,4
Profitability of sale of tour products (services)	4	0,2	0,8
General evaluation of the criterion			3,6
<i>Industry attractiveness (IA)</i>			
The level of profitability of the industry	3	0,4	1,2
The degree of impact of legislative changes	4	0,3	1,2
Dependence of industry development on the situation	3	0,3	0,9
General evaluation of the criterion			3,3
<i>Industry stability (IS)</i>			
Profit stability	2	0,5	1
The level of development of innovation in the industry	2	0,3	0,6
Marketing and advertising opportunities	5	0,2	1
General evaluation of the criterion			2,6

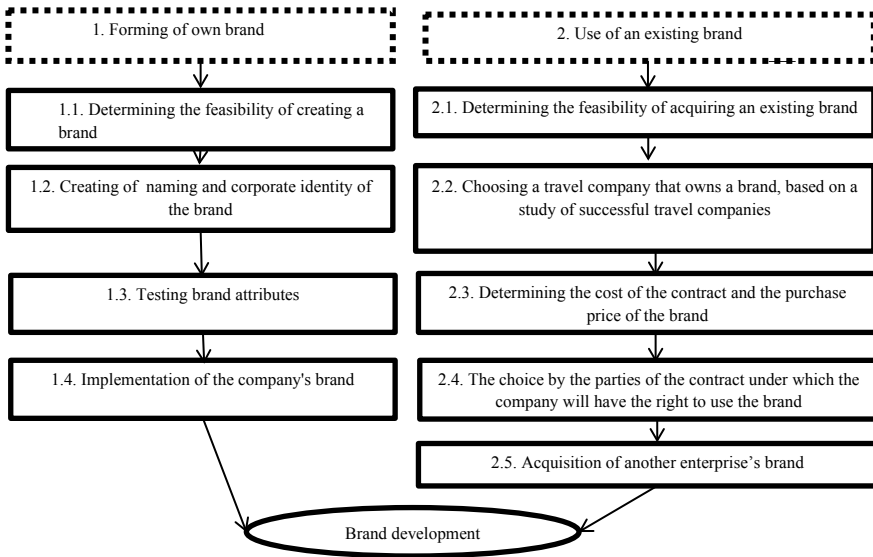


Fig. 3 The structure of the brand of the tourist enterprise. Source: author's development

In the conditions of high subject competition and slow growth of demand in the tourist market the enterprises of branch for effective functioning need to carry out constant monitoring of the positions in the market, to study strengths and weaknesses of economic activity, in due time to adapt to changes of market situations (Ilchenko et al. 2020).

The main factors that determine the choice of this strategy in today's post-war environment include: markets for business and own brand development are in a state of saturation or reduced demand for products (tourism market tends to decline, due to direct dependence from the exchange rate and the pandemic situation in Ukraine as a whole); current business exceeds the need for cash that can be profitably invested in other areas of business; new business can cause a synergistic effect due to better development of the domestic market of excursion activities and attraction of new skilled workers.

Thus, the analysis of the tourism industry of Ukraine showed that it has opportunities to make a profit, meet the needs of consumers and form its own universal tourism brand.

Modern travel brand is carried out using certain techniques, methods and techniques that allow to convey the developed brand to the consumer and not only to form in his mind the image of the company, but to help consumers perceive the functional and emotional elements of products or services. The brand helps the consumer to accelerate their choice and make a purchase decision.

If a travel company owns a well-known brand, its reputation can be several times higher than the net book value. Wanting to enter a new market, travel companies often buy ready-made brands. By making this decision, they receive an additional guaranteed profit from the sale of products or services compared to unfamiliar brands, which often offer sales at exorbitant prices. Buyers of the brand can be represented in the form of two groups - supporters of only this brand and casual buyers. The owners of the brand are constantly working to expand both of these contingents of consumers.

In our opinion, branding in the activities of tourism enterprises is:

- a holistic set of methods and measures related to the development and promotion of tourist services;
- activities to form a long-term competitive advantage of the enterprise;
- increased impact on a certain segment of consumers;
- promotion of the brand as a competitive and integral element of the tourist enterprise in modern conditions.

Define the structure of the brand of a tourist enterprise depending on the feasibility of creating a new brand or using an existing one (see Fig. 3).

To determine the structure of the tourist brand and the strategy of its development it is necessary to form approaches to the formation of the tourist brand. It should be noted that the company can promote its own brand through the use of the company logo or promote the brand of the travel company through the creation of a positive image (see Fig. 4).

In the current state of the market of tourist services, a stable competitive advantage should be to achieve valuable differences from the competitor by forming a set of measures to improve service quality and image, strengthen its own brand, apply a customer-oriented approach to customer service. Therefore, the development of a tourist brand is already a necessity for hospitality enterprises today (see Fig. 5).

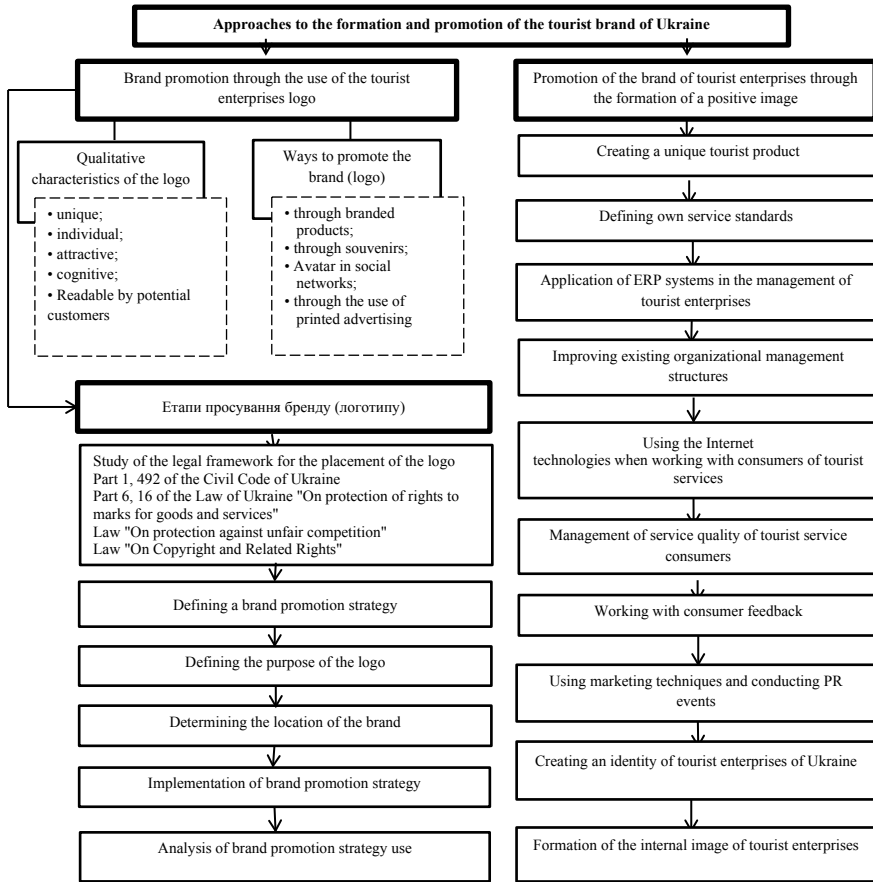


Fig. 4 Approaches to the formation of the tourist brand of Ukraine. Source: author’s development

Awareness of the importance of creating your own brand comes to managers and owners of companies as it reaches a high level of development, production and sales. It is then that it becomes clear that it is necessary to focus their efforts not just on programs to promote goods or services on the market, but on creating and promoting their own brand, which in particular can protect the company in fierce competition with similar goods and services (King 2016).

Brand development is a process of integration of many areas of business, so a clear idea of the image of the hotel brand is essential, as well as a long-term view.

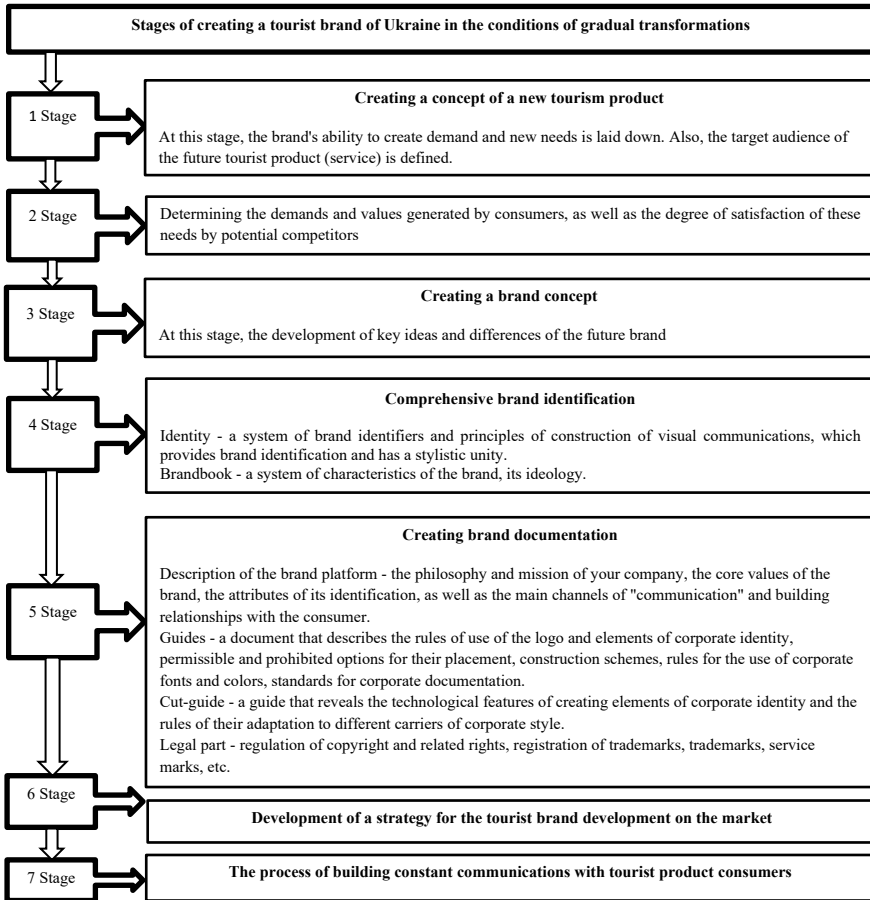


Fig. 5 Stages of formation of the tourist brand of Ukraine in post-harvest preconditions. Source: author's development

5 Conclusion

In the current conditions of world economic development and high level of competition in the world market of tourist services, there is a need to find additional methods to increase the competitiveness of enterprises entering the market or already working in the mastered segment with their tourism product. Among such additional reserves, intangible assets come to the fore, namely image, reputation, brand. Today there is a tendency to develop competition not of enterprises, but of enterprise brands. Brands are present in all markets, in the production, non-production, social and spiritual spheres. Modern consumers prefer products of well-known brands, so the formation of a competitive brand is relevant for businesses in today's post-war environment.

That is, the study suggests that the modern tourism industry is in crisis, which was caused by the Covid pandemic¹⁹. But as proved by strategic analysis, this situation is the rebirth of the tourism industry and provides grounds for the formation and development of the tourism brand of Ukraine. It is established that currently the advanced strategy in these conditions for the development of the tourist brand of Ukraine is a competitive strategy in almost all its varieties, as right now in the Ukrainian market there is a struggle for every consumer of tourist services. Based on this, the main structure of the tourist brand of Ukraine in these post-crisis conditions was proposed. The main directions and approaches for the development of the tourist brand of Ukraine are revealed. The main stages of brand development and formation are formed. Thus, the mechanism will help the tourism industry of Ukraine to enter new international markets and offer its unique tourism brand.

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Development of PHE-Coach—A Personalized Health E-Coaching System



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Abstract PHE-COACH is a system to personalize content within the health e-coaching system. This system aims to provide supporting tools for health professionals during their intervention process based on users' information on personal data. A developed prototype knowledge-based health e-coaching system demonstrates the suitability of the technology and to prove the system's validity and acceptance by the user. A "proof-of-concept" prototype, PHE-COACH, which confirmed the feasibility of the proposed knowledge-based approach is powered primarily by human knowledge collected from a health expert or health coach to form the knowledge base. The knowledge-based system consists of representative rules to reflect potential factors that affect selecting suitable health e-coaching strategies and goals. The prototype, PHE-COACH, utilizes multiple knowledge rules to determine suitable health e-coaching strategies and goals of the individuals.

Keywords System evaluation · System development · Health e-coaching systems

1 Introduction

Over recent years the use of intelligent, autonomous e-coaching systems which supports individuals in promoting their health and well-being is a growing research field. An e-coaching system may encourage individuals to lead a healthy lifestyle with personalized recommendation generation and goal evaluation. Such an e-coaching system can provide people with a wide variety of strategies and techniques intended to help them achieve their goals for self-improvement. E-coaching systems were inspired by the need to model the "human intelligence" in a technology that can continuously monitor its users' activities and surroundings, detect situations where intervention would be desirable, and offer prompt assistance (Siewiorek et al. 2012).

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Correspondingly, e-coaching systems nowadays have existed in many forms and functions, including sophisticated avatars, and maybe targeted at a variety of domains. In this paper, we present the details of the development of the proposed system. In particular, the system includes identifying barriers and recommending appropriate health-related strategies and goals. The feasibility of the PHE-COACH system is demonstrated by the design and implementation of a “proof-of-concept” prototype. Section 3 present the details the system design of PHE-COACH and the features of components in the architecture.

2 Literature Review

This section identifies the literatures that have been studied to identify the gaps. By means of information and communications technologies (ICTs), e-coaching systems are named to play a central role in both prevention and intervention strategies for behavioral change. In recent years, e-coaching systems have played an increasingly significant role in promoting a healthy lifestyle and positive behavior change. Research efforts have grown to provide more useful and effective e-coaching systems for research or other purposes. The implementation of e-coaching systems resulting from these efforts utilizes several techniques including Artificial Intelligence (AI) methodologies. In the study demonstrated by Klein et al. (2013), the activity and goal recommendations were provided, but the final choice was left to users. Meanwhile, a recent work by Kyriazakos et al. (2018) proposes a cloud-based personalized intelligent virtual coaching platform that offers support, encouragement, motivation, confidence, and a tool to improve the well-being of cancer patients. Authors in Ochoa and Gutierrez (2018) describes e-coaching system as “a set of computerized components that constitutes an artificial entity that can observe, reason about, learn from and predict a user’s behaviors, in context and over time, and that engages pro-actively in an ongoing collaborative conversation with the user in order to aid planning and promote effective goal striving through the use of persuasive techniques”.

3 Methodology

Design Science Research (DSR) has become an important and widely used approach within the Information System (IS) research communities. DSR is a research philosophy which a researcher answer questions relevant to human problems through the creation of innovative artefacts or contribution of new knowledge to the body of scientific evidence. The designed artefact is both useful and fundamental in understanding that Hevner and Chatterjee (2010). The central aim of DSR is to develop knowledge that can be used by experts to design the solutions to the problems in their domain. Essentially, understanding the nature and cause of problems can significantly assist in designing solutions using a DSR approach. The DSR methodology was appropriate

for this study because this approach is fundamentally involved in the problem-solving activities, which is vital for resolving the research problems through the creation of a new IS artefact. Also, the end goal of DSR activities is to produce an artefact, which must be developed and evaluated (Hevner and Chatterjee 2010). Accordingly, we evaluated the artefact by using the artefact prototype. Theories were developed for further improvement of the artefact according to the needs of targeted users.

4 System Development

This section discusses the prototype implementation setup and the outcomes of the experiments in implementing the most essential and representative functionality. Requirements served for the conception of an initial system design and the development of a prototype. The system design and the development of the prototype were based on periodic revisions through adopting an iterative process of design and incremental development. This identification of requirements led to new development iteration, resulting in a high-level prototype of the PHE-Coach system. Semi-structured interviews were performed with health professionals to understand their real needs and translate the requirements.

4.1 Use Cases

Use cases have been extensively used for elicitation and analysis of system requirements. We utilized the use cases to help understand the structure of the system requirements and to be used as functional requirements, especially those related to the development and deployment. In this study, we started with the identification of PHE-COACH's stakeholders to define their typical interactions with the system. This use-case also describes the functionality of a personalized e-coaching system that typically involves a participant-user as the main actor.

4.2 Database

A database is a self-describing collection of integrated records, including tables and the relationships among the rows in those tables, and metadata (Cantador et al. 2008). The system database stores data about users' profiles and health coaching materials (e.g., strategies, goals). The database links the available users' profile data or information to generate the most relevant health coaching materials. The information and data contained in the prototype are archived into the MySQL database. In this study, an entity-relation diagram was created to design a database, which follows a τ method introduced by Hernandez (2013) for the data extracted in the analysis phase. The data

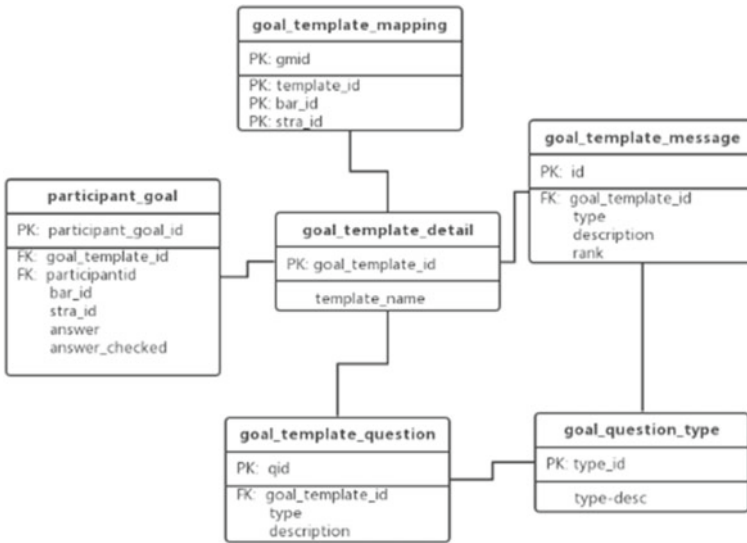


Fig. 1 Example of the PHE-COACH the database design

entities of the system were identified and presented in the database schema along with their attributes then connected with lines based on their relationships (Fig. 1).

4.3 Development Setup: Languages, Technologies and Environment

The developed prototype system, PHE-COACH, was built by using the following technologies: 1) PHP-Storm IDE. The dynamic aspect of the web pages, of which the server-side of the prototype system data querying and presentation, is written by using the PHP (PHP Hypertext Processor) language (P. H. P. Group 2003). The main advantage of using PHP is that it runs on various operating system (OS) platforms (Windows, Linux, Unix, Mac OSX) and it is compatible with almost all servers (e.g., Apache, IIS) as well as making it possible to execute users' call server-side efficiently and independently from the users' web-browsers; Web Server (Apache Tomcat). The decision to use the existing web server was taken to avoid conflicts and to make the PHE-COACH system work seamlessly in both the development and deployment environments; Graphical user interface is written in HTML5, CSS, and jQuery. This component is intended to facilitate the interaction between users and develop the building blocks of the user interface. Figure 2 depicts one of the user interfaces of the system. The user answers a question from the baseline screening form, the answer will be saved into the database and click Next to go to the "value identification" page.

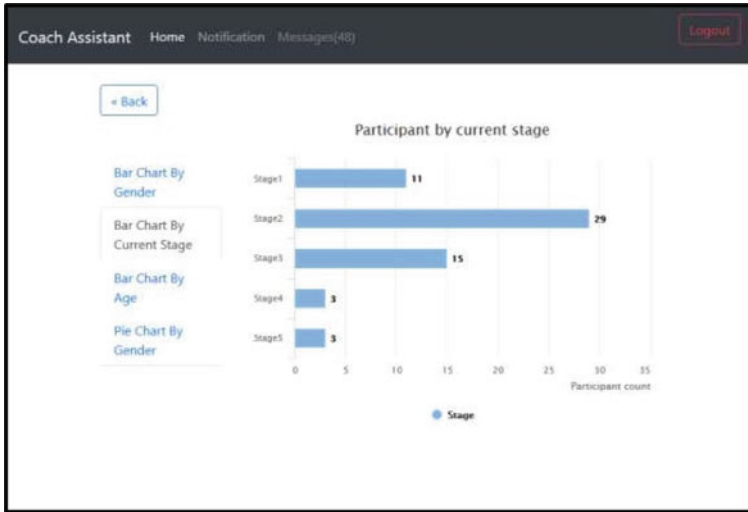


Fig. 2 The statistics page is a few distribution charts, such as “Bar Chart By Gender”, “Bar Chart By Current Stage”. It can be extended if more charts are required. By clicking the navigation tabs on the left, the user can switch between different charts

5 System Evaluation

The system evaluation strategy is based on “Design Science” guidelines, proposed in Hevner and Chatterjee (2010) was adopted as the overall research methodology. The guidelines formed the basis of our evaluation strategy. The evaluation in this study was administered in a lab setting. The lab was equipped with PCs running Windows 7 operating system and internet access, which was required to access the PHE-COACH’s prototype. The prototype was adapted to suit the experimental lab setting. Then, the system utilized the input based on each case study scenarios. The objective of the questionnaire was to collect the decisions from the health experts for the 20 (twenty) real patients as case study scenarios, measuring the differences between the health experts’ decisions and computerized PHE-COACH recommendations as well as analyzing the results. The questionnaire asked the health experts to use the provided information to decide whether the generated recommendations should be changed, and if so, how. Each case study scenario had two copies; one copy consisted of the minimum variables required by the PHE-COACH rules (input); the other copy provided additional patient information and the minimum variables required by system. The health experts were asked to respond to both copies in each case. Their decisions on the manuscript were compared to the recommendations (output) generated by the PHE-COACH, then the differences were analyzed.

6 Conclusion

This paper describes the implementation of the proposed health e-coaching framework. To conclude, a PHE-COACH, was developed and evaluated. We demonstrate that the proposed approach is feasible, by showing that it is possible to implement it. To implement and test a “proof-of-concept” prototype to demonstrate the most essential and representative functionality and usage of the proposed system. The evaluation aimed to determine the system’s performance level compared to the experts. The primary purpose of the evaluation was to conclude the degree to which the prototype system meets the actual assessment of health experts.

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An Industry Analysis and Preferred Generic Strategies in Sabah Tourism Industry: Perception of HR-Knowledge Focus Group



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Abstract COVID-19 has plunged global economy to recession and impacted businesses in all sectors, with reduction of manpower and termination of employment. Business organizations, especially those in the tourism industry may need to consider to continuously providing creative and innovative ways. Porter's five forces model has been a popular tool to assess the dynamic environment affecting business organizations. However, the practice has always being exercised by top management in the firm, and lack of perspective from HR insight. This Hence, the study attempted to collect data from a specific focus group of people, who shared the common characteristic which is with HR-knowledge, and to consolidate their perception towards the five forces model in Sabah tourism industry led to generic strategies that perceived to be applicable to the industry player. A total of 37 focus group respondents answered the questionnaire, and data was valid for data analysis. The result suggested that five forces model as one main variable (model) is found to be significant to the three generic strategies which are cost leadership, differentiation and focus strategy. Although the relations between the model was found to be significant to the strategies, it is also to be noted that each of the single force was found to be not significant. Contributions of this study are the research conducted, was participated by HR-knowledge focus group respondents, and the sixth force (influence. of government). Recommendations for future research is to include HR planning strategy as response to the relation between the five forces model and perceived generic strategies.

Keywords Five forces model · Cost leadership · Differentiation · Focus strategy · HR-knowledge people

1 Introduction

COVID-19 pandemic has been particularly catastrophic for travel and tourism sector. On September 1, Malaysian Minister of Health Khairy Jamaluddin stated that the

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pandemic is expected to become endemic in Malaysia by end of October, and Malaysia may introduce regular COVID-19 testing under the endemic scenario. The pandemic has triggered economic recessions worldwide. In Malaysia, Department of Statistics Malaysia reported that there is 7.46 million outside labour force in the month of June 2021, and unemployment rate at 4.8% in June 2021. The situation requires tourism small and medium enterprises (SMEs) to reassess its current position and gauging human capital strategy to align its human capital to meet the organizational target.

CFI Education Inc, (2020) described industry analysis as “market assessment tool that can be used by businesses and can be applied by analysts to comprehend the dynamic industry”. The analysis using five forces model can provide an outlook of the industry and analysis can be developed to helps business managers to comprehend how the forces are affecting the industry, especially during the COVID-19 pandemic time. Business managers would be able to analyze the external factors affecting the business based on the five forces which are the bargaining power of suppliers, the threat of new entrants, the threat of substitutes, the bargaining power of buyers and the industry rivalry. Analysis using five forces model can be used to evaluate business models and make adjustment to new environment post COVID-19 pandemic hit.

As of June 2021, a Labour Force Survey that was published by Department of Statistics Malaysia, employed workers in the economic sector registered a decline month-on-month in employment. The reduction of workers in the service sector reported were mostly in accommodation, food and beverage services, real estate, and wholesale and retail trade activities.

Wu et al. (2012) described the five forces model that was formed by Porter in 1979 as an industry analysis framework for the development of business strategy as the five forces in the microenvironment can affect the ability of an organization serving its customers and making profits. The formulation and implementation of strategy depicted by Wu et al. outlined the stages of strategy formulation and strategy implementation. Strategy formulation consists of vision and mission statement, environmental analysis, objectives, and strategy choice. Strategy implementation consists of plans and monitoring and control. The descriptions of the strategy process stage are organization’s purpose and its business, to monitor and analyzing forces affecting business, details of the results and accomplishment, options to decide and to achieve business objectives, specific actions, operational activities, and tasks, and plan monitoring and adjustment with strategy modification to obtain the intended results.

Zhong et al. (2021) described that COVID-19 pandemic was unexpected, where the pandemic hits heavily on businesses throughout the globe, impacting the human resource management in various industries. Zhong et al. have conducted an extensive library search on literature review related to the studies of human resource issues during pandemic time and HR practices facing the issues. The findings by Zhong et al. suggested that the COVID-19 pandemic had extensive impact on the human resource management and the current scenario requires the attention of researchers for theoretical and empirical attention. Zhong mentioned that Verma and Gustafsson

(2020) have also provided their perspectives for research on the impact of COVID-19 pandemic to business and management, while Minbaeva 2020 and Cooke et al. (2021) researched on the emerging issues caused by the pandemic.

Zhong et al. (2021) made an extensive search on published article related to emerging COVID-19 pandemic and human resource (HR) issues, comprised of well-being of employees, flexibility of workforce, remote work, job loss, human capital, human resource development, leadership, performance, and communication.

KPMG (2021) reported that in 2020, leaders in human resource field played important roles in managing business organization to adapting the workforce to the unforeseen changes caused by the COVID-19 pandemic. Based on the report, 87 percent of HR executives in Malaysia believed that human resource (HR) played a leading role in responding to the COVID-19 pandemic. However, the report also predicted that 13% of the workforce will be facing difficulty as the workforce would be made redundant. Apart from that, 30% of the workforce will probably continue working from home (WFH) and 47% of the workforce would need to go through training and development programme for reskilling and upskilling in facing the new reality after the hit of the COVID-19 pandemic.

The report by KPMG outlined there are three things that human resource (HR) can consider investing in to drive the organizations becoming more resilient: the first was to create a purpose driven culture; second one was to take the lead to reskill the workforce; and the third was harness analytics.

Based on the report by Zhong and KPMG, HR leaders played important role in maneuvering the business organization in adapting to the context of COVID-19 pandemic. Furthermore, a workbook published by Deloitte (2020), was an activation framework that can be used by HR and can be adapted for the unique environment. The elements that were highlighted in the workbook was the need to understand how capacity, capability, and affordability (CCA) affects workforce design after the crises.

Anastasiu et al. (2020) argued that real challenges affecting strategic human resource management by adapting to the model of the five forces are including the talent shortage, world population that is ageing, and repetitive jobs that are disappearing. Anastasiu et al. described the five forces model with the following descriptions: (i) Competitive rivalry: industrial sector competition, (ii) organizations as buyers: Hiring companies demands, and and update skills of employees, (iii) HR suppliers from recruitment companies and learning institutions, (iv) new entrants: migration of people and globalization effect, and (v) substitutes of modern technologies and innovation.

It was concluded by Anastasiu et al. that organization may find it harder to select or retain valuable employees that bring values and add value to the products and services offered by the organization depending on the strongness of the forces affecting the business organization. It was also mentioned that future employees would need to analyze the intensity of the forces when they are preparing for jobs or change of career, and all the forces were represented as threats to organization and its competitiveness in the business environment.

Davis (2017) demonstrated the resource-based theory and its practical application to HR practitioners and employees could be a competitive advantage source that can be gained by the organization and its businesses. Davis also mentioned that model seems to reduce employees to invisible units of product, criticisms made on Porter's model also excluded the workers. Internal resources of organizations, like the employees are playing their part to generate competitive advantage was not considered, despite research demonstrated that employees could also be a source of competitive advantage.

The study aims to explore the perception of HR-knowledge people on Porter's Five Forces Model and the generic strategies applicable to business organization within the context of tourism industry in Sabah. The aim of this study is to gain an insight from HR perspective (internal) to the five forces affecting the organizations and perceived strategies to be applied. Reviewing the contextual perception of HR-knowledge people would be meaningful to the business setting as HR is one of main functional departments for the success of business organization, as mentioned by Anastasiu et al. (2020), where strong competitive environment performed by organization determine its attractiveness in operation and making profits. The outcome of an organization is depending on the performance of employees, and an essential strategic approach to organization's business practices of organizations.

2 Research Design

The main purpose of this quantitative research is to generate knowledge and create understanding about the issue which is the relations between Porter's Five Forces Model and Generic Strategies as perceived by HR-knowledge people. The type of quantitative design is causal/quasi-experimental research.

The researcher attempted to establish the cause-effect relationship among variables. The study utilized convenience sampling, and the sample was formed by a focus group of individuals with characteristic and can contribute to help the researchers gaining better understanding of the issue related to five forces model and generic strategies.

The characteristic of selection is based on the criteria of individual, either involved in HR-related activities or possess academic knowledge in HR. The focus group was given a time frame of 4 months to observe the impacts of COVID-19 to the business practices especially tourism industry small and medium enterprises in Sabah. Survey questionnaire was used for data collection, with the following sections: Demographic information of respondents, Porter's Five Force Model, and Porter's Generic Strategies.

All the items in the study were measured using a 5-point Likert scale. McLeod (2019) stated the Likert scale "is a five-point scale which is used to allow the individual to express how much they agree or disagree with a particular statement". For

the purpose of the study, the Likert scale was to measure the statements of agreement: 5 - strongly agree, 4 - agree, 3 undecided/neutral, 2 - disagree, and 1 - strongly disagree.

3 Results

3.1 Demographic Profile of Respondents

37 respondents have returned the questionnaire and all 37 forms were completed and valid for analyses. Of 37 respondents, 24.3 percent were male respondents and 75.7 percent were female respondents.

Most of the respondents are in the age group of 21–25 years old, followed by below 20 years old and 36–40 years old each respectively.

Majority of the respondents have obtained tertiary level of education, with bachelor's degree (83.8%), with diploma (8.1%) and master's degree (8.1%).

3.2 Reliability Test

Taber (2018) described Cronbach's alpha as "a statistics commonly quoted by authors to demonstrate that tests and scales that have been constructed or adopted for research projects are fit for purpose", and Trizano-Hermosilla and Alvarado (2016) stated it as "the most widely used method for estimating internal consistency reliability". Daud et al. (2018) cited from Nunnally and Bernstein (1994) on the level of the reliability for the instrument is represented by Cronbach's alpha value above 0.6 is acceptable whereas the value is less than 0.6 considered low.

Reliability test for Five Forces Model in the study was tested. The Cronbach's Alpha value is .584, for five items (the five forces) excluding the force of influence of government. With the inclusion of Influence of Government as the sixth force, the Cronbach's Alpha value is .643. The low range of score is still accepted as the value is more than 0.5. The reliability test for Porter's Generic Strategies (Cost-leadership strategy, Differentiation strategy, and Focus strategy) was .869.

3.3 Mean Score

3.3.1 Mean Score for Five Forces Model

The mean score for all the Five Forces Model including Influence of Government is 3.77, and Five Forces Model without including the Influence of Government is 3.67.

This indicated that the Five Forces Model is more impactful to the organization with the influence of government being considered as part of the forces.

Mean scores for the Five Forces Model with each dimension were: Supplier power (3.32), Buyer power (3.32), Competitive rivalry (3.94), Threat of substitution (3.97), Threat of new entry (3.78), and Government influence (4.27).

3.3.2 Mean Score for Generic Strategies

Mean score for the Generic Strategies was 3.96, with the dimensions of mean score for each Cost leadership (3.83), Differentiation strategy (4.01), and Focus strategy (4.02).

3.3.3 Regression Analysis

The overall regression analysis result for Five Forces Model with the inclusion of Influence of Government was found to be significant to the Generic Strategies (that combined Cost Leadership Strategy, Focus Strategy and Differentiation Strategy). The model summary for the test has the score of .531a, R Square .281, and adjusted R Square .261 with a Std. Error of the Estimate .61994. The p-value was at .001.

The overall regression analysis result for Five Forces Model without the inclusion of Influence of Government was found to be significant to the Generic Strategies (that combined Cost Leadership Strategy, Focus Strategy and Differentiation Strategy). The model summary for the test has the score of .491a, R Square .241, and adjusted R Square .219 with a Std. Error of the Estimate .63714. The p-value was at .002.

3.3.4 Relation Between Five Forces Model and Cost Leadership Strategy

The model summary for the test has the score of .445a, R Square .198, and adjusted R Square .176 with a Std. Error of the Estimate .66011 (Table 1).

The model summary for the test has the score of .441 a, R Square .194, and adjusted R Square .065 with a Std. Error of the Estimate .70315 (Table 2).

Based on the result, it is found that five forces model added-in influence of government does have a significant relation with cost leadership strategy. However, when

Table 1 Regression between five forces model and cost leadership

Constant	Unstandardized B	Coefficients std. error	Standardized coefficients beta	t	Sig.
	1.413	.831		1.701	.098
Five forces model	.643	.218	.445	2.944	.006

Table 2 Regression between five forces model dimensions and cost leadership

Constant	Unstandardized B	Coefficients std. error	Standardized coefficients beta	t	Sig.
	1.143	.899		1.271	0.213
Supplier power	.005	.136	.006	.033	.974
Buyer power	.147	.119	.202	1.237	.226
Competitive rivalry	.191	.191	.205	1.000	.325
Threat of substitution	-0.46	.203	-0.48	-.225	.824
Threat of new entry	.064	.182	.072	.348	.730
Influence of government	.323	.191	.325	1.690	.101

Dependent variable: Cost-Leadership Strategy

the model is regressed independently, the significance level was not reported. Of the result, the higher significant value for this test is the influence of government. Hence, the model is partially supported.

3.3.5 Relation Between Five Forces Model and Differentiation Strategy

The model summary for the test has the score of .582a, R Square .338, and adjusted R Square .319 with a Std. Error of the Estimate .68586 (Table 3).

The model summary for the test has the score of .642 a, R Square .413, and adjusted R Square .295 with a Std. Error of the Estimate .69791 (Table 4).

Based on the result, it is found that five forces model added-in influence of government does have a significant relation with differentiation strategy. However, when the model is regressed independently, the significance level was not reported. Of the result, the higher significant value for this test is the threat of new entry. Hence, the model is partially supported.

Table 3 Regression between five forces model and differentiation

Constant	Unstandardized B	Coefficients std. error	Standardized coefficients beta	t	Sig.
	.399	.863		.462	.647
Five forces model	.960	.227	.582	4.229	.000

Table 4 Regression between five forces model with dimensions and differentiation

Constant	Unstandardized B	Coefficients std. error	Standardized coefficients beta	t	Sig.
	.700	.919		.761	.452
Supplier power	.011	.139	.012	.079	.938
Buyer power	.003	.121	.003	.023	.982
Competitive rivalry	.176	.195	.165	.901	.375
Threat of substitution	−343	.207	.315	1.654	.108
Threat of new entry	.313	.186	.309	1.670	.104
Influence of government	.007	.195	.007	.038	.970

Dependent variable: Differentiation Strategy

Table 5 Regression between five forces model and focus

Constant	Unstandardized B	Coefficients std. error	Standardized coefficients beta	t	Sig.
	1.478	1.016		1.455	.155
Five forces model	.676	.267	.393	2.532	.016

3.3.6 Relation Between Five Forces Model and Focus Strategy

The model summary for the test has the score of .393a, R Square .155, and adjusted R Square .131 with a Std. Error of the Estimate .80708 (Table 5).

The model summary for the test has the score of .451a, R Square .203, and adjusted R Square .044 with a Std. Error of the Estimate .84630 (Table 6).

4 Discussions

The original Porter’s Five Forces Model has supplier power, buyer power, competitive rivalry, threat of substitution and new entry as factors that influence on Cost Leadership Strategy, Differentiation Strategy and Focus Strategy. This current study has been modified to include the influence of government such as regulation, taxation and trade policies to the Porter’s Five Forces Model.

From the results, the result showed that there is a significant relationship between the Five Forces Model and Cost Leadership Strategy (H₁). The result indicated that

Table 6 Regression between five forces model with dimensions and focus

Constant	Unstandardized B	Coefficients std. error	Standardized coefficients beta	t	Sig.
	1.488	1.114		1.335	.192
Supplier power	.002	.169	.002	.012	.990
Buyer power	-.014	.147	-.017	-0.97	.923
Competitive rivalry	.100	.237	.090	.422	.676
Threat of substitution	.120	.252	.105	.475	.638
Threat of new entry	.236	.226	.224	1.045	.304
Influence of government	.191	.237	.162	.808	.425

Dependent variable: Focus Strategy

the Five Forces Model had a significant positive relationship with Cost Leadership Strategy.

Therefore, from the perspective of HR, supplier power, buyer power, competitive rivalry, threat of substitution and new entry, together with government influence through regulation, taxation and trade policies have a positive impact on Cost Leadership Strategy.

When the Porter’s model was tested against Differentiation Strategy under H₂, the results showed there was a significant positive relationship between the Five Forces Strategy and differentiation strategy.

This means the HR focus group thinks that the Five Forces Strategy has a positive impact on Differentiation Strategy.

The Five Forces Model was further tested against Focus Strategy under H₃ where the results showed a significant positive impact of the Five Forces Model on Focus Strategy. From the results, they showed that the supplier power, buyer power, competitive rivalry, threat of substitution and new entry had a positive impact on Focus Strategy.

5 Contributions of Research

The research conducted was an attempt to bring in the perspective of HR-knowledge people in analyzing the five forces model and perceived generic strategies. The practice of analyzing five forces model was always being exercised by top management, and this time the model has been sampled using a group of people that possessed HR-knowledge.

The respondents were also given a specific time frame for a period of three to four months in assessing the tourism industry. The respondents were required to observe the changes of movement control orders, and the promotions made by tourism and hotel industry in Sabah.

The model tested also included the influence of government as the sixth force affecting the business organization. Such attempt is quite relevant to the context in Malaysia as influence of government was perceived high among the respondents, which are trade, regulations and policies.

6 Limited of Research

Number of respondents that can be categorized as focus group were limited. Data collection was done during the movement control order and less respondents are available to be contacted.

The view provided by the respondents are from human resource perspective compared to the norm of the model is being utilized by top management holders in organizations. Different strategies may occur with the dissimilar positioning in the company.

7 Suggestions for Future Research

For future research, the authors suggested to include the establishment of relations between industry forces, perceived generic strategies by business, and HR preferred strategies. This is in line with the extensive summary made Zhong et al. (2021) that can contribute a significant impact to the body of knowledge.

For robust model development, a possible analytic network process (ANP) can be applied for multi-criteria decision analysis (MCDA) to be conducted to evaluate multiple conflicting criteria in decision making. With the MCDA, researchers can explore the possible effect of the forces, adapting to the organizational generic strategies, that eventually impacting the HR practices in the organization.

8 Conclusions

It is concluded that the five forces model works as a model, especially with the addition of influence of government. Of all, differentiation strategy was found to be the best perceived generic strategies compared to cost-leadership and focus strategy. The inclusion of HR-knowledge people as the focus group respondents can be considered interesting in the field of HR, as HR would be the one that is most responsible for recruitment, hiring and selection of new workers, retention of existing workers, and

let-go of workers inspite of this COVID-19 pandemic time. The research that has been conducted strongly suggest to includes potential HR strategies in response to the perceived forces and preferred generic strategies.

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The Structured Approach to Product Innovation Process: A Case Analysis of Cafe/Bars and Full-Service Restaurant Chains



Mazalan Miffi and Mat Salleh Ayub

Abstract It has been more than 20 years since the inception of Cunha and Gomez's (2003) anthology of product innovation models and little is known empirically as to what extent their synthesising works carry such validation. Hence, we extend further this phenomenon of interest by engaging two opposite chained restaurants, namely, a renowned and well-established international Cafes/Bar restaurant and a local full-service restaurant (FSR) in Malaysia. The aim of our study is to ascertain how these two restaurant chains conduct their product innovation with a research objective is to study the process-based of their new product development (NPD). We believe that the findings of this study will shed some lights as to whether those characteristics of Cunha and Gomez's (2003) product innovation models, namely flexible, integrative, and improvisational, have discreetly evolved in reality.

Keywords Product innovation process · Restaurants · New product development · Malaysia

1 Introduction

Study of product innovation process in the foodservice industry is virtually nonexistence not until the mid-80 s. Since the introduction of Feltenstein's (1986) methodical approach of product innovation process, the floodgate to the research of product innovation in hospitality services begun to flourish (Mooney et al. 1994; Jones and Wan 1992; Jones 1996; Jones and Miffi 2001; Miffi 2004; Ottenbacher and Harrington 2007, 2008; Miffi et al. 2017). Yet, such studies were by far still in its infancy if it is to

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be compared to other industries that were mature back then, such as in manufacturing and engineering, which begun more than half a century ago (Booz 1968; Schumpeter 1934). Since then, studies of innovation management in various industries have grown tremendously to the creation of knowledge in the theory of product innovation (Cooper 2001; Utterback 1975). It appears that the process-based product innovation is the most intensively studied dating back in the late 1960s when model of product innovation process was first coined by Booz, Allen and Hamilton's Consulting Firm. Since then, several refined conceptual developments of product innovation models were developed in various marketing and innovation literature (Utterback 1975; Abernathy and Clark 1985), advocating the importance of new product innovation in shaping sustainability, prosperity and being competitive advantage in a business landscape that is increasingly less predictable.

Indeed, most of the models of product innovation process in the literature are conceptualized and designed in an orderly manner, staging a step-by-step process from the stages of idea generations to product launching and end at the evaluation stages. While each of these models advocates different level of stages from one to another, it shed some lights the engagement in managing product innovation across different organizational platforms. However, despite of its conceptualization is widely presumed to fit every case in any context, research work of Cunha and Gomez (2003) suggests otherwise, arguing that the evolution of product innovation model has moved from being traditional, sequential approach to a more flexible approach. Iansiti (1995) argues that the unpredictability of today's marketplace what makes the traditional model less effective due to its rigidity as new information is generally being abandoned due to the closure of the 'window of opportunity' as the next activities along the development phases move to the implementation stages. Cunha and Gomez (2003) advocate that as the external environmental forces become unpredictable and complex for the organization to maneuver, approaches to product innovation should be flexible and integrative. The rationale of such proposition lies on the ground that it allows some flexibilities: extending further the closure of the 'window of opportunity' cut-off point and allow the activities within stages to run concurrently or parallel. The objective is multiple facets, which allow for organizations, depending on organizational structures and goal strategy, to have contingent models rather than universal one, to incorporate flexible practices rather than invariant, to capitalize opportunities rather than avoiding risks, to foster learning while planning, to integrate networks rather than relying on exclusive teams and finally, to move from structure to structured disorder.

The notion of Cunha and Gomez's (2003) new product innovation approaches is derived base on the two major theoretical foundations of an operating system in organization science that is either being operationalized through an orderly or disorderly manner. Theoretically, traditional organizations that are based on engineering or manufacturing perspectives are by large viewed as order, and therefore their product innovation is highly regarded as technical (Brown and Eisenhardt 1995). On the other side of the theory, some organizational operating systems are reported as partly chaotic (Abrahamson 2002), as Cunha and Gomez (2003) described, tended to be 'inter-related', 'complex' and behaviorally, not fully predictable. Hence, with

this notion, Cunha and Gomez (2003) propose a logical sound knowledge of new conceptual development of product innovation approaches based on the two opposite ways of organizing: order and disorder in product innovation models.

Yet, it has been more than 20 years since the inception of Cunha and Gomez's (2003) anthology of product innovation models and little is known empirically as to what extent their synthesizing works carry such validation. Hence, we extend further this phenomenon of interest by engaging two opposite chained restaurants, namely, a renowned and well-established international Cafes/Bar restaurant and a local full-service restaurant (FSR) in Malaysia. The aim of our study is to ascertain how these two restaurant chains conduct their product innovation with a research objective is to study the process-based of their new product development (NPD). We believe that the findings of this study will shed some lights as to whether those characteristics of Cunha and Gomez's (2003) product innovation models, namely flexible, integrative, and improvisational, have discreetly evolved in reality.

2 Managing Product Innovation in the Foodservice Industry

Relative to engineering/manufacturing industry, the development of product innovation process model in the foodservice industry is still novel despite some evidence for innovative gastronomic appeal since the mid-sixteenth (Fuller and Waller 1991). Feltenstein's (1986) conceptual product innovation model was the first one documented in the literature, proposing a methodical approach. To date, there is a reasonable documentation of product innovation models (Mooney et al. 1994; Jones 1996; Jones and Mifli 2001; Mifli 2004; Ottenbacher and Harrington 2007, 2008; Mifli et al. 2017), portraying a structured approach, which resemble to those models in other industries (Booz 1968).

Both Feltenstein (1986) and Mooney's et al. (1994) models of product innovation process are conceptual in nature whereas following Jones (1996), Jones and Mifli. (2001), Mifli (2004) Ottenbacher and Harrington (2007, 2008) and Mifli et al. (2017) are derived from their respective research-based studies. As mentioned earlier, the structured approach to product innovation is the most documented studied in the literature and appeared to be alike in the foodservice industry. According to Mooney (46), 'this type of disciplined approach is being utilized more frequently by foodservice management in many sectors of the industry. In a similar connotation, both Feltenstein (1986) and Jones and Wan (1992) argue that an orderly approach to managing new menu development is the key to product success. Similarly, Ottenbacher and Harrington's (2008) product innovation process of quick-service restaurant chains is also seen as 'structured' and 'iterative in nature' but appeared to show some signs of flexibility as evident of repetitive screening activities in some stages along the development process. However, sign of concurrent or parallel activities remains inconclusive as the framework of the above discussed models clearly demonstrated

its processes in an orderly manner. However, earlier work of Harrington (2007), although he too advocated a structured four-stage of culinary innovation process, appears to suggest 'the need for a more organic model integrating strategic action planning, marketing considerations, food science and culinary knowledge perspective'. This is quite interesting proposition as this indirectly analogize to Cunha and Gomez's (2003) improvisational model that emphasizes 'cooperative learning-based on real-time information [along the development process] rather than making early decision choice that may lead to deceptive convergence point'.

In Mifli's (2004) cross comparison study of four different restaurant subsectors on steps of innovation undertaken when engaging in new product development, established organization, such as food and beverage management in recreational sport club, undertakes more steps than small, self-own/cum chef, firm. He found that, although independent, self-own/cum chef, restaurants manage their product innovation largely based on intuition and personal experiences, intangible elements, such as human-relation services and ambience, are equally essential in managing quality menu innovation as stressed in other studies (Jones 1996; Jones and Mifli 2001; Mifli 2004; Ottenbacher and Harrington 2007, 2008; Mifli et al. 2017).

Without doubt, menu innovation has been, if not always, the pillar in differentiating one restaurant to another. It is quite clear that each foodservice establishment has a distinctive way of executing its menu innovation process. Such a distinctive way, however, is contingent to the directional way of organizing that is being influenced by its own managerial orientations and the state of market conditions (Cunha and Gomes 2003; Mifli et al. 2017; Iansiti 1995; Wood and Robertson 1997). By large, all those existing models of product innovation process being reviewed are structured and iterative in nature even though some of the abovementioned previous studies did acknowledge the informal ways of doing product innovation. Hence, because there is paucity of theoretical support whether the theory of cause-effect relations between organization science and product innovation process enhances the emergence of new paradigms in managing product innovation process that go beyond the conventional norm, this research question remains essential with important contributions to theoretical understanding and implications for both academics and practitioners of similar interests.

3 Methodology

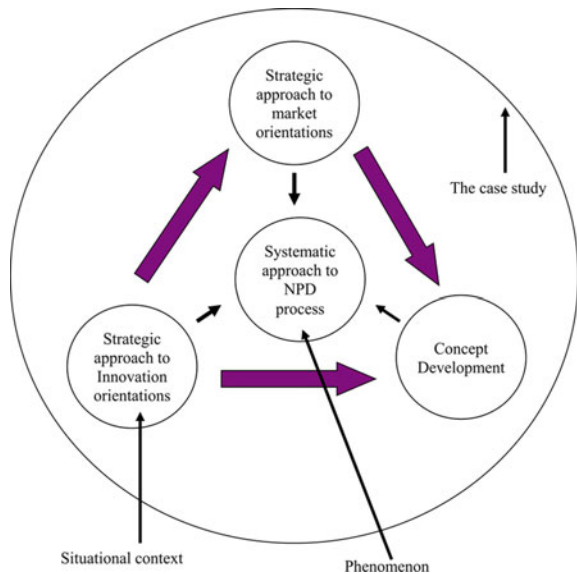
The aim of this study is to investigate whether actual practices of managing menu innovation have indeed go beyond the traditional structured approach. Specifically, Cunha and Gomez (2003) have remarkably established their conceptual propositions by linking it to the theory of order and disorder organization science. Yet, while such an assertion is greatly contributed to theoretical knowledge, it is still in its infancy because, as far as it is known, no further research has been carried out to substantiate this claim. Therefore, with great interest, a case-study qualitative research was used as this method deemed appropriated to meet this study research

objective: to better understand the complex issues and processes that are not explicit in the surface response (Yin 1994). The term ‘particularism’ has been used by Yin (1994) to describe a case study research which suits best when the purpose is to research a particular phenomenon within a particular situation. Brotherton (1999) states that ‘it is this particularism, arising from the inseparability of phenomenon and context, which Yin (1994) suggests is key issue in deciding whether the case study be the preferred method’.

At this point, the three situational contexts presented in Fig. 1 are basically already understood of its influence on the phenomenon, theoretically, which is presented in Chapter Four. Nevertheless, this section of this research method followed recommended guidelines for theory development from a case study research methodology (Eisenhardt 1989). Eisenhardt (1989) describes the process of inducing theory using case studies. She introduces a “roadmap” for building theories based on previous work on qualitative methods, the design of case study research (21), and grounded theory building (Glaser and Strauss 1967; Strauss and Corbin 1990) and extend that work in areas such as a priori specification of construct, triangulation of multiple investigators, within-case and cross-case analysis, and the role of existing literature.

Accordingly, this justifies of its application in this study as the phenomenon is to understand deeper the product innovation process within the context of two opposing organizations: organizing as order or disorder. As Sekaran (2003) suggested this type of investigation (correlational study) provides an opportunity to identify the relevant criteria associated with the focus of inquiry. Furthermore, the research instrument

Fig. 1 Case-study approach



used in the personal in-depth interviews was mostly with *how* and *why* type open-ended questions. Thus, with such type of questionnaires in seeking answers in meaningful levels of depth, it is difficult to see how this research objective can be effectively achieved using either experimental design or a large-scale survey (Brotherton 1999).

In this study, existing literature of product innovation process models from the foodservice perspectives were synthesized as a basis for constructing the research instrument. Specifically, each of the corresponding stage-process was thoroughly analyzed where every possible variable representing the respective stages was identified. This method of construction deemed advantages as increased reliability could be built up through multiple highly relevant references and viewpoints (Jones and Mifli 2001; Ottenbacher and Harrington 2008). Prior to final data collection, a pre-test was conducted from a panel of experts to review its content validity. Subsequently, a total of forty-two questions in the formed of open-ended questionnaires were successfully developed. This newly designed questionnaire was then used in the in-depth case study interviews with two highly respected chained companies' executives, namely the director of operations and the product development manager. Although higher number of case studies is desirable for better substantiation, limited numbers of in-depth interviews have been undertaken in previous similar studies (e.g. (Jones 1996; Mifli 2004; Ottenbacher and Harrington 2008). Both of these executives formed a purpose-based sampling as the sample's selection justified to ensure the right person with superior knowledge in recent NPD engagement involved in this case-study interviews.

By commissioning of these case studies interviews, supplementary questions were the key benefits to attain deeper probing of the complex NPD activities. Following these interviews, which took place at the firms' head office in Kuala Lumpur and about more than two hours was spent for each interview, a case study was written about each firm. As to enhance the cases validity and reliability, prior to analysis, each interviewee was sent a copy of the case about their firm and asked to correct any errors of fact and/or to comment on the content. This process took nearly five months, longer than anticipated, as verifications through telephone conversations were made several times to ensure highest possible accuracies and satisfactory acceptance of the written report.

4 Findings

4.1 *The Café/Bar Chain*

This brand is one of the renowned café/bar establishments in the world. Originally from the United States of America, this Seattle based company is primarily dealing with beverage menus, offering mostly assorted coffees imported from the tropical nations. In the early days, this chain was very much a typical traditional style of cafe & bar operations with a concept of 'grab and go'. But, nowadays, apart from

still heavily dependent on its beverage menus, food products, such as sandwiches and cakes, have been recognized as the up and coming match making for its beverage products.

Here in Malaysia, this brand was brought into Malaysia via a joint venture between a Seattle based international brand ownership called International Starbucks Coffee and a local Malaysian company called Berjaya Corporation. Thus, the name of this brand in Malaysia is called Berjaya Coffee Sdn. Bhd. During its early inception, all the Berjaya Starbucks's outlets were owned by Berjaya Corporation until only recently all the newly opened outlets are joint ventured with local owners.

Presently, there are more than 100 outlets scattered across Malaysia and half of them are in Klang Valley region, employing over a thousand employees. A growth rate of between 10 to 20 outlets is targeted for every year, focusing to city centers across the 13-state of Malaysia. According to the Product Development Manager of Berjaya Starbucks Company, unlike in the US, Starbucks outlets in Asia are designed more to a dining concept but the core business of 'grab and go' is very much alive as he explained:

Basically, we have recently revamped our food menus [taking] into account that most of our customers have our food in the store itself. We want to make it to a concept that it can also be taken out too.

At the conception, the new menu development was largely dictated through consumers' demands and in-house customers' feedbacks. Various ways were used to assess customers' demands and most notably was to assess it directly from the customers. Internally from colleagues, managers, and district managers. The front-line staffs, according to the manager, are the crucial ones because, 'they are the ones that interacts with the customers [and] who actually see the needs over there'. He continues,

Customers' trends in food preferences and acceptances are equally critical. What are people eating nowadays? I mean [that] at one stage Japanese food was very popular [and] before that was the Italian. After Japanese, I think, came right now is the age of Hong Kong restaurant. A lot of Hong Kong restaurant is coming up. Now the Kopitiam are also coming up soon [and] also recently the Mamak seems to be coming soon.

The increasing numbers of Asian restaurants, such as Japanese, Hong Kong as well as the growing popularity of local Indian Mamak restaurants have created awareness of the acceptability of these foods.

Apparently, with the growing trends in Asian flavors, the strategy of Starbucks's new menu development seems to be heading to this way. Nevertheless, the manager commented that some of the trendy food preferences may not be incorporated into their new menu development because of Starbucks brand image identity. Simply put, the brand image of Starbucks's menu is always be their own special brew of coffee recipes and the secondary products, which are the food items, that on the menu only be changed or improved in line with these food trends.

Therefore, the strategy is to develop or introduce trendy food items based on Starbucks's product development strength without compromising the core product that is the coffee.

So, we are looking at the trend itself. We try to place ourselves in the way but sometimes we could follow the trend. We just see what the opportunity for us to improve. We also look at what we currently sell. We just use our strength and capitalize on our strength. Our strength is mostly will be cheesecakes. So, we tend to go more on cheesecakes.

Apart from up lifting Starbucks' own product development strength, opportunity on another area, such as peak hours during luncheon period, was also being capitalized. However, such a strategy to lure customers during this limited lunch hours encountered some constraints due to their limited food menus. The manager explained that the selection and development of new food menus were also critical. This is because, according to him, new food menus that intended to be introduced and brought in onto the menu needed to be carefully scrutinized to ensure they were not overpowering the core coffee brand products.

We used to be very weak during lunch period. But we have some considerations [because] we are intolerant to any foods product which can actually overpower the aroma of our coffee in our store. Take for example pasta. If you heat up pasta inside our store the whole store will smell pasta itself. So, when someone walks into Starbuck, they don't smell coffee anymore. [Thus] we are not allowed to go into that area. [Nonetheless], one area which we can offer is sandwiches.

Presently, Starbuck is adopting two mechanisms regarding menu changes. According to the manager, every time a promotional campaign of beverages was launched, there would be a promotional food campaign that goes with it. The turnover of this promotional campaign is quite high, averaging of one to two months before the new one is being introduced. These new food menus were then be assessed in term of its popularity within that promotional campaign period. The mechanism of assessment was to look how popular these newly introduced food menus are based on the sales count. Those food menus that were found low in sales count and fall below the prescribed standard expectations, would be removed from the menu, and the development process continues again with introduction of new food menus in the subsequence beverage promotional campaign.

Nonetheless, such an introduction of new food menus during the beverage promotional campaign is conducted in a progressive manner and served as a testing ground to ascertain customers' acceptability. Accordingly, this constant changes in food trends have made Berjaya Starbuck in Malaysia to adapt accordingly by developing higher numbers of foods repertoire. Consequently, those food menus that performed well would be retained and those that were at the bottom five in term of its sale counts would be taken out. Another reason of menu change was due to the following consideration:

If the new product is actually quite similar to it, we will consider taking it off first for the new product. For example, cinnamon roll, if we have a chocolate chip cinnamon roll, we cannot actually put two cinnamon roll side by side. Basically, we will consider taking out the normal cinnamon roll and put in the chocolate chip cinnamon roll and see what happen. If it does not work, then we will roll back to the normal cinnamon roll...that is one of consideration that we are taking into account.

External Considerations

Apart from the internal policies that were used to fine tuning the new menu development, external factors were also played a part to menu changes. Issues of the availability of certain goods, particularly to the reliability of the delivery services were also taken into considerations. This is because, according to the manager, some of the main ingredients that were imported from oversea markets, such as halal turkey from the U.S., have known to arrive behind schedule. Consequently, food menus, such as sandwiches and pastry products that relied on turkey meats needed to be changed.

Apart from this issue, the manager explained that some of the poultry-based menu products that were related to global epidemic outbreak, such as the bird flu, had forced Starbucks to change these menus to the ones that were perceived safe for human consumptions. Because of this, together with the inconsistency of turkey supply, the meat-based products' menus were revamped to non-meat-based products.

In the event of bird flu...bird flu actually...causes a problem in Malaysia. There are consumers who actually afraid to eat poultry-based product. We may actually look as changing our product into non-meat based. [This is because] most of our meat-based products are chicken, followed by Tuna. We used to have turkey. But now...we have a supply problem [for turkey].

According to the manager, in reference to the current state of consumer food-service market in Klang Valley region, 'the customers [have] keen sense of differentiation for what they want'. He elaborates the following notation:

Customer who actually demand but not demanding, [referring] to this sort of market. These sorts of customers are customers that we have right now. We actually have to sense to their needs of what they are actually looking for. We have received actually direct feedback from the customer who actually gave us a call or send us emails and asking us to include certain products here and there.

Corresponding to this, he says that certain times customers do demand for foods that has to do with health issues. Nowadays, increasing awareness to healthy foods using organic food has made consumers demand for it. However, the cost of using organic food, according to the manager, is 300 times more expansive than the regular ones and this, consequently, affects the profit margin for these sorts of menus. Thus, even though the growing demand for organic food is growing, associated higher costs making it not viable.

Another external factor that was brought to the attention is the increasing numbers of restaurant outlets in Klang Valley's market, which accumulated stiffer competitions. Berjaya Starbucks main rival competitor always been Coffee Bean & Tea Leaf (CBTL) and lately, according to the manager, Kopitiam restaurants popularity is started to gain momentum. Few years back, Starbucks' outlets were the only coffee player available in shopping complexes, and thus, been able to monopolise the coffee business back then. However, soon after the emergence of these rival competitors, shrinking in market share gains began to show up, indicating there is wider choices to choose from various coffee players in the market. As a resultant to this 'competitive pressure', Berjaya Starbucks revenue suffered, but to what extents their market shares lost remained confidential and unclosed for the purpose of company's policies.

We welcome competition actually. Kopitiam offers something else. They offer nasi lemak, kaya in toasts, curry [noodle], otak-otak...we offer cheesecakes, pastries, sandwiches. They have their thoughts [and] we have our thoughts. In fact, there are some situations when our stores opened in a complex and we are the only coffee player and we were suffering. But we actually welcome when competitors opened in the same complex. We actually welcome them. They also help us because there is a differentiation factor. The closet we would say will be CBTL, but the thing is, [they] have their own crowd [and] we have our own crowd. What differentiate us from CBTL is the customer. It's the customer choice. Now they actually differentiate us.

Such a creation of product differentiation has revolutionized the complexion of the cafe business. This is because, according to the manager, even though almost all of the cafe business establishments offer coffee as their 'signature product', differentiation of menu products is quite obvious: Each of these coffee chains' menus have their own uniqueness in differentiating to each other.

Nevertheless, the manager also highlights that the strategy of product differentiation alone is not enough. Due to low barriers to entry into this business, rampant of numbers of cafe's establishments have actually escalated further competitions amongst the coffee players, leading to widespread of developing/introducing similar products, which can easily deceive in the eyes of the consumers. Hence, one way to distinguish us from the rest of the coffee players, according to manager, is through product features. Berjaya Starbucks has successfully incorporated three blends product features: unique recipe, presentation and packages. The manager continues that together with these product features, indulging experience inside the restaurant is also essential in order to further distinguish Berjaya Starbucks with the other competitors.

Anyone can do a marble cheesecake [or] black forest cheesecake. Anyone can do whatever I have inside [here]. But the thing is how do they do it...package it, sell it and what is the environment. We don't only sell our products here. We sell our experience and the experience must go well together with the products.

With regards to the issue of drastic change in customer's food preferences, the manager explains that this factor is very minimal and does not affect Starbuck's performances. Starbuck's policy and practice in new menu development strategy serve as a good platform to analysis their menu performances. Factor, such as changes in customer's price acceptances, is also not affected. Berjaya Starbucks' pricing policy is always slightly more than the other coffee players. Nowadays, the cost of doing business is always increasing. As such, a change in customer's price acceptance or simply lower the selling price as a strategy to lure customers does not fit to our new product development plans, rather a predetermined formula developed in Seattle, U. S, called *Latte Index*, is used in setting up the menus selling price.

The latte index is what you call the controlled subject where we compare our latte. Let say a competitor is selling their latte for RM6.00. We have to look at whether it is advisable to sell it on par or we raise it by, count of maybe perhaps [at] 50 cents. Once you [raised] it at 50 cents the rest of our drinks actually have got their index comparison to the latte index. For example, Caramel Macchiato, a hand-crafted drink, which is very indulgent and even a small cup, will make you feel so nice and satisfied at the end of your drink. [Thus] we did a particular index of 2.5 and if latte is RM6.50 its times 2.5.

Talking about technology advances, the manager comments that a readily available technology that can prolong the preservation process of the dairy product have help them tremendously. Part of this is because Berjaya Starbucks emphasizes more towards food safety in their new product development strategy. Together with this top priority, the new product also must be delicious and able to last long in shelf.

Personally, I love home-cooked food. But the [question] is whether it is still safe enough [to consume] after 2 days. A big question mark unless if you send it for third party laboratory verification. [Therefore] consideration for customers first of all, it must be safe. Second of all, it must be delicious. Is it last long enough? If it's last long enough then it is safe. Right now, first and foremost, its food safety.

Nonetheless, not all of Berjaya Starbucks' new products development is successful despite 'millions of dollars spent in [research and development (R & D) to get] the right profile'. The manager argues,

there is no guarantee success when it comes to product development whether it is for food or beverages. Sometimes accidents happen and when accidents happen, it is either good, which is very good to us or... bad [, and] there is when we go to the next project.

For example, chocolate, blueberry, and cheese were the top favorites taste profiles found based on their R & D. Yet, the sales of these new products found to be mediocre despite they were made based on the consumers favorite taste profile.

4.2 Full-Service Restaurant (FSR) Chain

The Ship, a well-known full-service restaurant (FSR), was established during the late 60 s by the Koo's family originally from Hainan, China. Back then, before the existence of this restaurant, Koo's families worked in a shipping business and the original idea of the name of restaurant, the Ship, was eventually named after this experienced. It began by introducing Hainan's food cuisines but eventually was abandoned to Western food concepts due to the much influenced of British colonial during that time.

It only came to them the idea in the early 60's [where] you got a lot of colonial influence. Then the British you have a little bit all these going on and you do not see anything other than colonial. I think they pick this up, the [Western] concept from the people that were visiting, and they were working with where you could find good basic western food.

Since then, the flagship of this restaurant, called the Ship, sailed comfortably carrying Western menu concept to this present day. To date, there are six chain restaurants carrying the flagship of this brand name. Two are in Penang and four in Klang valley and another one is soon to be opened in China. Each restaurant has a minimum of 40 employees inclusive of front-liners and back of the house staffs. Developing cities, such as Ipoh and Johor Bahru, will be targeted for future outlet expansion. Despite the fact of the Ship long existence, its growth rate is relatively very low in comparison to other chain rival competitors. Brand expansion through

franchise agreement gives huge advantages for many chain restaurants to increase their numbers of brand outlets. Yet, in spite of this, the Ship remains adamant to the traditional way of operating their restaurant business. According to the Director of Operation of the Ship Holdings (M) Sdn Bhd,

Franchising is an issue to the Company at this point of time because we are worried that qualities will be compromised if we franchise it out". He continued that they prefer running their own without denying "franchising is a very good business platform...but not at this point of time.

Menu Development

Since Nick took over the operation seven years ago, the menu was revamped twice. Back then, it was basically done in a conventional design, listing the menu items onto one folded menu display and no categorizations of kid and senior citizen meals on the menu. The early development of the menu was lacked innovation in term of display presentation, pricing strategy and some issues of trendy food acceptances.

Initially, the menu that came in the Ship was pictureless, without picture. They did not have categories which cater to senior citizen and children. They did not have kid menu. They did not have area where senior citizen could purchase with lower price...and another thing, they did not focus at health-conscious food. My latest innovative in engineering the menu was to look at all these. I actually look at health dietary program, quality of food, amount of cholesterol. We look into pricing, portioning, acceptance of price increase. We also look at qualities that go into instead of just bean sprout or mix vegetable. We look into quality other vegetables like broccoli and stuff like this. So, the menu became better in my own ways like I said with dietary, the health, the picture [and] the outlook.

In a nutshell, according to Nick, apart from those factors mentioned earlier, the concept of the new menu development was also done based on the restaurant's concept.

5 Model of Menu Innovation Process

The qualitative in-depth interviewed method was carried out using the forty-two open-ended questionnaires where two highly respected restaurant chains' executives participated in the semi-structure in-depth interviews. Both interviews took more than an hour and their responses were audio recorded, which were subsequently verbatim transcribed. This verbatim transcribed written data was then uploaded to N6 QSR1995 software, a sophisticated word search to locate and analyze contextual specific text. Based on this analysis along with the conventional mind-mapping content analysis technique, forty-nine variables were extracted representing the contemporary settings of chain restaurants' NPD process. Subsequently, using the forty-nine variables as the base framework, a new model of NPD process is proposed consisting of five stages that include formulation, development, testing, marketing and evaluation, along with their respective activities at each stage, which is presented in Fig. 2.

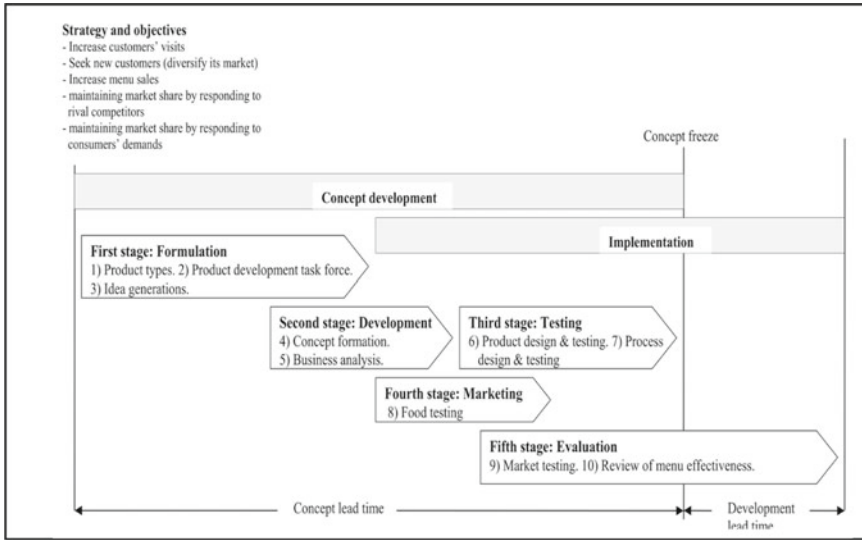


Fig. 2 The five-stage of menu innovation model

As can be seen in Fig. 2, the five-stage of new menu development derived from the qualitative in-depth interviewed method appears similar to the earlier models in terms of its sequencing steps. This is not surprising since the foundation of the research instrument during the interviews was based on the earlier models. Nevertheless, this newly developed of new menu development model provides new findings, which have never been reported in the hospitality literature. In the hospitality literature, all of those earlier NPD process models are in sequential stages approach. However, the findings in this qualitative data show that some of the steps within the stages are found to be overlapping between the stages, which appears to be resembled to the characteristics of the flexible, compression and integrative NPD process models highlighted by Cunha and Gomes (2003). Therefore, with this empirical evidence, managing menu innovation process is not wholly confined to a methodical approach as proclaimed in the literature.

In the literature, little is known about the explicit details of product innovation objectives. Earlier NPD process models in literature highlight the objectives of product innovation are streamlining based and guided by a well-defined strategy in order to achieve the desired innovation level (Feltenstein 1986; Mooney et al. 1994; Jones and Wan 1992; Ottenbacher and Harrington 2008). In this qualitative data analysis and results, the objectives of a new menu development appeared to be mundane and driven by product marketability in line to what have been advocated by Khan (1991), which basically covered both customers' express or latent needs approach strategy being proposed in Narver et al. (2004) and Berthon et al. (2004) studies.

5.1 Formulation

Once the objectives of the new menu development are determined, the next step is to establish the types of product categories. This early step appears to be similar to Ottenbacher and Harrington's (2008) product innovation process of quick-service restaurant chains (QSR), which they labelled it 'decision of which food category to focus on' and their categories appeared to be similar of the objectives found in this case-study. In this qualitative case-study data, both companies underlined their new product development based on adaptation of either internally or externally made, or from the competitors. In regard to product development task force, both formal and informal practices are used in which the formal task force refers to head quarter that includes individuals from marketing, accounting and finance departments, whilst informal is mainly derived from intuition and experiences of the interviewees as a director of operations and business development manager. At the idea generation stage, there are several sources being sought to generate new ideas that include culinary magazines, cooking books, competitors' products, the restaurant's chefs, personal experiences, frontline staffs, customers' comments and suggestions, in-house market research and interdepartmental meetings to discuss market trends. These findings are mostly identical to what have been highlighted in the literature.

5.2 Development

The first step in this stage involves with concept formation where all the ideas generated previously are subjected to concept formation. For example, old menu item that had been omitted from the menu is re-introduced because of customers' suggestions. The interviewee's statement is summarized and put forward:

Our customers are hard to predict in term of their food preferences. Items that are dropped from the menu because of no longer popular and low in sales are sometime re-introduced simply because of the customers demanded for it. This item used to do well in the past but wane down of its popularity because of changes in customer preferences. Every menu item is based on core ingredient, such as cheese, pumpkin, etc. Re-introduce of old items will be subjected to some modification but the core ingredient remained as it is.

At this point the re-introduced item is then undergone some testing that include either in customers survey, through focus group or put on informal trial in selected markets. Such testing is necessary because of the modification made in the concept and reaction from the customers.

In this development stage, business analysis is also being conducted that includes only two factors: analyzing rival competitors' top selling products and consumers food trends. Both interviewees agreed that it is not difficult from them to find their competitor's top selling products since both of them have been in the industry for many years. Word of mouths spread rapidly, and instinct experiences help them to notice their rival competitors' business performances. Alternatively, to find out what

is currently ‘hot’ product in the market is by simply patronizing rival competitor’s restaurant, according to one of the interviewees. On the other hand, consumers’ food trends are assessed either from local or overseas based markets or a combination of these markets. The cafes and bars, being a Seattle based chained company, use the US market trends and select products that are likely to be attracted in Malaysia that include mainly on beverages-based products. In comparison to the Full-service restaurant (FSR), their products based are remained intact with the original menus but constantly on the look-out for trendy food concepts that mainly associates to freshness and maintaining quality standard.

5.3 Testing

In this stage, two steps are identified that include product design and testing and process and system testing. Both of these steps are basically resembled to Jones’ (Mooney et al. 1994) 15-step model of new-product and new-service development process. In the third stage of Jones’ model, three steps of testing are proposed. Under the product design and testing step, new products are mostly tested by in-house personals. An interesting point to note that occasionally, cafes and bars outsource their pastries new product development from established food manufacturers, such as Nestles. According to the company’s product development manager, outsourcing helps them in term of cost-benefits in terms of new equipment and product expert’s requirements.

It is a win-win situation. They have the technologies capability and I have the ideas of what products I wanted. All I have to do is to inform them how I wanted my product to be- the portion size and weight. A strategy that is never allowed your customers get bigger portions of the pastry products. By hunch, I know the ideal portion size of a standard piece of a cake. Once I get the sample of the new product that I requested from the supplier, that new product is straightaway put onto our pastry counter and sees how saleable it is. If the customers like it, it will be one of our permanent menu items.

In the contrary, product testing and design is not much of a priority since changes in menu items are rare for FSR. According to the director of operations, the menu has been only revamped twice and most of the original menu items are basically the same to the present menus except with some upgrading in terms of dish presentations and quality, such as changes in thickness of the supps.

5.4 Marketing

In this stage, the marketing activities used by both companies are less prevalent in comparison to what have been advocated in the literature where most of the earlier models indicated at least two steps of marketing activities that include pre-marketing and market trials. In these case-studies, both companies engage only on

food testing where predetermined in-house panels are invited for testing the newly developed dishes. Activities related to marketing appear to be performed during concept formation at the first step of the development stage. Basically, those potential new dishes generated during the idea generation step and approved to proceed to development stage, the second stage of the NPD process, are concurrently tested of their marketability, indicating some evidences of the integrative, compression and flexible NPD models' characteristics (Cunha and Gomes 2003; Iansiti 1995).

Sequential NPD modals proposed in literature suggest most newly developed products are subjected to premarketing or market trials before officially being launched in the market. Nevertheless, the traditional sequential NPD models are not fully embraced by these two companies in this case-study research. Apparently, some of the activities at the NPD steps are found to be over-lapping within the stages approach, which resembles to the characteristics of a flexible NPD model highlighted by Iansiti (1995) and Cunha and Gomes (2003). In addition, characteristics of integrative and compression NPD models are also noticeable in these case studies where ad-hoc marketing activities are performed within the stages approach.

For example, in-house food testing is the only marketing activity found to be being conducted at the marketing stage. A closer analysis of the case studies result suggests that elements of marketing activities are also found to be performed at other stages that include development and evaluation. Therefore, the NPD approach used by both companies is found to be structurally informal, muddled and unsystematic as opposed to the methodical approaches of NPD process that are commonly cited in literature.

5.5 *Evaluation*

In this final NPD stage, review of new menu items effectiveness involves into two steps. The first step involves market testing, which is in a form of customers' feedbacks. In this customer's feedbacks, four assessment factors are used to test the menu items quality, price, value perception and intention to repurchase. The second step is about reviewing the menu performances where each of the menu items are analyzed based on their sales history. Customer counts are also used to denote the popularity of the restaurant as a whole in which the menu itself plays a key role. Average bill and profit and loss (P&L) assessments, which commonly practice in reviewing business performances, are also applied.

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Factors Influencing Volunteer Tourism Awareness Among University Students



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Abstract Volunteer tourism is known as an adventure that requires physical and mental abilities to help the community. However, since the difficulties related to volunteer tourism require more in-depth research, different concepts and theories were explored. Therefore, this study aims to identify the determinants of volunteer tourism awareness among university students in University Malaysia Kelantan City Campus, particularly in terms of their awareness in volunteer tourism. To achieve the best research outcome, the researchers used primary data by applying the convenience sampling method. A total of 359 university students in University Malaysia Kelantan City Campus was selected to answer the questionnaires. Overall, the study found that attitude, social influence, and perceived behavioural control significantly influence volunteer tourism awareness among university students. This study extended the knowledge of volunteer tourism awareness related to this study area in general and Malaysia in particular.

Keywords Volunteer tourism · Awareness · Attitude · Social influence · Perceived behavioural control

1 Introduction

Volunteer tourism refers to an adventure that requires physical and mental abilities to help the community (Stainton 2020a, 2020b). Besides often performed in a systematic situation that requires the integrity of all parties involved in the search and leisure to make the programme successful (Lyons et al. 2012; Mostafanezhad 2013), volunteer tourism has also been increasing significantly due to efforts to commercialize this type of tourism to the public (Lyons et al. 2012; Hashim et al. 2020a, 2020b, 2020c).

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In this regard, the industry creates an alternative form of tourism that involves the social and cultural aspects of the local community through volunteer tourism activities such as charity tours, goodwill, and many more. This type of tourism is also performed to implement small projects for the local communities that are beyond the tourism industry (Wearing and McGehee 2013). To illustrate the overall programmed and re-innovate volunteer tourism, trust and relationships between youths and organizers such as the Ministry of Tourism and Culture (MOTAC) are, therefore, required in order to meet the need and satisfaction towards authentic experiences that allow tourists to learn the local community's culture, language, and daily activities besides helping the neighborhood. To enhance awareness within the broad community, volunteer tourism programmes must be marketed in a way that piques the interests of the community through strategic and extensive measures so that they could satisfy the volunteering participants as well as achieving volunteer tourism objectives (Ithnin 2018). Given the rapid growth of volunteer tourism in the country, the government has, therefore, encouraged students in higher education institutions to participate in volunteer programmes (Arulrajah 2016) such as the Malaysian Civil Defense Force (APM) and the Department of Social Welfare Malaysia (JKM).

Student volunteering in Malaysia varies in many aspects (Faizli 2013; Mohamed 1986). In this regard, university students are encouraged to volunteer because the vision and the logo of the country should always be defined and elevated to the highest standard; however, before examining the role of youths and their involvement in voluntary work in Malaysia, it is first important to understand university students and Malaysian university students in particular. While volunteer tourism is well-received by many others, most university students do not clearly understand how volunteer tourism works within society and they also perceive volunteer tourism as a barely important activity because they often do not have enough time and funds for expenses to perform volunteer tourism activities (Danley et al. 2021). Despite the importance to engage youths such as university students in volunteer tourism work to help society (Checkoway 2011; Salman and Battour 2020), studies on the involvement of university students in volunteer tourism activities, particularly in the context of Malaysia are scarce (Siti Raba'ah et al. 2011; Turiman et al. 2009). Moreover, despite the existence of many non-government organisations (NGOs) offering various volunteer programmes around the world, many university students would rather prefer travelling than volunteering. For that reason, this study aims to examine the factors influencing volunteer tourism awareness among students in University Malaysia Kelantan City Campus. Subsequent paragraphs, however, are indented. This study started with the overall explanation in the introduction part and then the literature review. Next the methodology of this study was also discussed as well as the finding and discussion and conclusion part were also deliberated.

2 Literature Review

2.1 Attitudes

One of the factors influencing volunteer tourism awareness in the context of this study is attitudes, which refer to a positive or negative assessment of an individual through various aspects such as situation and environment. Attitudes typically change from time to time according to how one addresses and handles the situation and environment (Cherry 2020; Sengan et al. 2021). Attitudes consist of three components, namely cognitive, affective, and behavioral components. While the cognitive component uses thoughts and beliefs in influencing individual attitude, the affective component, on the other hand, is more inclined towards influencing individual feelings about a situation, environment, or object. Meanwhile, the behavioral component refers to a self-action that affects an individual attitude (Cherry 2020; Nik Hashim et al. 2019a, 2019b).

2.2 Social Influence

Social influence is treated as another factor influencing volunteer tourism awareness among university students in University Malaysia Kelantan City Campus. Social influence can change individual behavior in a way that allows the individual to follow the social-environmental demand and this is associated with external factors. According to Izuma (2017), external factors are formed through determinants such as influence and obedience, and these external factors further influence individual attitude in controlling a situation. This also includes a positive, moral social influence (McLeod et al. 2020; Gholami and Al-Tahoo 2021). Social influence explains the tendency of individuals to adapt to life norms and their ability to control their attitude based on the situation (Goodfriend and Heizen 2018, Hashim et al. 2020a, 2020b, 2020c). For instance, peer and family influence has a significant social effect on positive youth adjustment. Besides, social influence is also believed to positively impact individuals despite their extent of inability in adapting to social norms (Telzer and Do 2018; Aminova and Marchi 2021). Hence, since tourism has many potential activities such as community service, environmental discovery, and art reinforcement (Stainton 2020a, 2020b), social influence may influence volunteer tourism awareness in general.

2.3 Perceived Behavioral Control (PBC)

In this study, perceived behavioral control is the third factor that influences volunteer tourism awareness among university students in University Malaysia Kelantan City

Campus. Perceived behavioral control can be defined as a situation in which an action performed requires a great deal of effort and should be maintained by deeds (Bartlett 2019). According to LaMorte (2019), perceived behavioral control also refers to an individual's action according to the current situation depending on whether or not the individual can analyze the situation positively or negatively. Based on the theory of planned behavior by Ajzen (1991), behavioral determinant refers to individual intention towards participating in that behavior, which is defined by three constructs: behavior, subjective norm, and perceived behavioral regulation. According to Ajzen (2006), individual action and behavior, the influence of actions, and the purpose of actions are interrelated in the sense that if the beginning is good, then the whole thing will likewise be good. In the context of tourism, while attitudes are defined as measuring the tourists' cognition of their feelings about visiting a place, subjective norm refers to how the tourists' relatives, family, friends, and others influence their visit to the place and how perceived behavioral control influences them individually (Hsieh et al. 2019; Nik Hashim et al. 2019a, 2019b).

2.4 Awareness of Volunteer Tourism

As indicated by warwick.ac.uk (2019), awareness is a situation where an individual uses the mind and senses to know an event or behavior at a particular time, which is crucial for allowing the individual to understand something and make good decisions. Furthermore, in this era of sophistication, the use of technology is widely popular; hence, to foster awareness of the widespread existence of volunteer tourism, the use of technology is strongly encouraged in disseminating this news. For instance, the use of print media, social media, and electronic media are very helpful in carrying out this effort (Hanan et al. 2018; Nassar and Battour 2020).

3 Methodology

3.1 Research Design

The current study uses a non-experimental research design, which predicts and explains the innumerable verdicts correlated to the collection, treatment, and analysis of data but also provides a coherent basis for these choices (Marczyk et al. 2005). In this regard, the researchers explore an issue that is not clearly identified to obtain a deeper understanding of the current problem. As such, in the current study, the researchers use a survey as primary data and online resources as secondary data to propose the independent variables of attitudes, social influence, and perceived behavioral control and their relationships with the dependent variable of this study, which is volunteer tourism awareness.

3.2 Population and Sampling

In the current study, the researchers select university students as the target respondents to assist in achieving the research objectives. Since the researchers need to ensure that the estimates to obtain a sample in this study are accurate and conclusive (Anderson et al. 2017), a convenience sampling method was, therefore, employed in this study because it encompasses the readiness of the respondents along with the easy accessibility and the time taken before selecting a population (Etikan et al. 2016). The researchers also decided to include students from University Malaysia Kelantan City Campus as the research population because the location is convenient to the researchers. Besides, this study used an appropriate information concerning the research objectives to obtain data from university students. Overall, University Malaysia Kelantan City Campus comprises a total population of 5,616 students; hence, based on Krejcie and Morgan's table for determining sample size, the researchers selected approximately 359 students from University Malaysia Kelantan City Campus as sample size. However, the total sample size that can be used for this study is 345 students due to error data.

3.3 Data collection

In the social sciences field, survey methods such as interview surveys, questionnaires, and opinion polls are most widely used for gathering data from a large number of respondents who are commonly provided with the same set of questions that allow them to provide more insights and improve their ideas. Hence, as for the data collection procedure in this study, the researchers first developed and distribute questionnaires to the respondents to gather information related to their attitudes, social influence, and perceived behavioral control towards volunteer tourism awareness. Generally, a questionnaire is a testing tool that consists of a set of open-ended or closed-ended questions used to gather appropriate data from the research respondents and later utilized for several research purposes.

3.4 Instrumentation

To obtain numerous responses from a large sample of respondents, the researchers employed questionnaires that comprise three sections: Section A, Section B, and Section C. Firstly, Section A entails the respondents' demographic information such as age, gender, race, and education level. Next, in Section B, the researchers focused on the independent variables outlined in this study, namely attitude, social influence, and perceived behavioral control. Finally, Section C measures the respondents' awareness level about volunteer tourism. Additionally, the researchers used a Likert

scale to measure the extent of the respondents' agreement or disagreement with the items. In general, a Likert scale is a measuring scale of five to seven points ranging from strong support to strong opposition, which allows for a balanced view of the public. As such, a Likert scale often includes a midpoint for those who are neutral in the matter. In this study, the researchers used a five-point Likert scale that ranges from "strongly disagree (1)", "disagree (2)", "neutral (3)", "agree (4)", and "strongly agree (5)" in the questionnaires to be distributed to the respondents.

3.5 Data Analysis

The data obtained from the questionnaires distributed to the respondents were analyzed using IBM Statistical Package for the Social Sciences (SPSS) version 26 software and the results presented using frequencies and percentages. In addition, Pearson's correlation analysis was also be conducted to examine the correlations between variables.

4 Results

4.1 Demographic Profile

Table 1 shows the gender distribution of 345 respondents. The table shows that female respondents constituted 59.4% (n = 205), which is more than male respondents 40.6% (n = 140). The majority of the respondents in this study are females as opposed to men because the female respondents were more willing to answer the questionnaire compared to the male respondents. Besides, the female respondents were easier to approach and willing to spend some time answering the questionnaire during the data collection. Among the four age groups, the highest number of respondents includes those from the age of 22 to 24 years old with 48.4% (n = 167), followed by the second-highest from 19 to 21 years old with 47.0% (n = 162), and 4.6% (n = 16) of the respondents from the age group of 25 to 27 years old. The reason why the respondents who are 22 to 24 years old belong to the highest age group is that the people within this age range have more awareness and time to travel around or carry out volunteer activities compared to other age groups. Meanwhile, the age group of 25 to 27 years old was the lowest because the people in this age group possibly prefer traveling with their family members during holidays as a family trip and are less interested in participating in volunteer activities. In terms of the percentage of respondents by race, among 345 respondents, 66.1% (n = 228) of them are Malay, while 14.5% are Chinese (n = 52), and 11.3% are Indians, the remaining 8.1% of the respondents, which is also the lowest percentage belong to other races. As for the percentage of respondents by education background, 11.6% of the respondents had

Table 1 Demographic profile

Variables		Frequency	Percentage (%)
Gender	Male	140	40.6%
	Female	205	59.4%
Age	19–21 years old	162	47.0%
	22–24 years old	167	48.4%
	25–27 years old	16	4.6%
	Above 28 years old	0	0.0
Race	Malay	228	66.1%
	Chinese	50	14.5%
	Indian	39	11.3%
	Other	28	8.1%
Education	Certificate	2	0.6%
	Diploma	40	11.6%
	Degree	298	86.4%
	Master	2	0.6%
	PhD	2	0.6%
	Matriculation	1	0.3%

a diploma, 86.4% ($n = 298$) were had bachelor Degree, 0.06 ($n = 2$) had certificate, and those with a PhD and matriculation respectively constituted 0.06% ($n = 2$). Overall, the highest education level belongs to those with a degree with a total of 298 (86.4%) respondents.

4.2 Correlation

Table 2 shows that attitude and volunteer tourism awareness are significantly correlated with $r = 0.306$, $p < 0.01$. This shows a low correlation between attitude and

Table 2 Pearson's correlation analysis results

Item	Attitude	Social Influence	Perceived Behavioral Control (PBC)	Volunteer Tourism Awareness
Attitude	1			
Social Influence	0.526**	1		
Perceived Behavioral Control (PBC)	0.569**	0.675**	1	
Volunteer Tourism Awareness	0.306**	0.528**	0.614**	1

volunteer tourism awareness. Meanwhile, there was a moderate correlation between social influence and volunteer tourism awareness, which is indicated by $r = 0.528$, $p < 0.01$. There was also a moderate correlation between perceived behavioral control (PBC) and volunteer tourism awareness with $r = 0.614$, $p < 0.01$. In conclusion, there are moderate and high relationships between attitude, social influence, and perceived behavioral control (PBC) with volunteer tourism awareness.

5 Discussion and Conclusion

Based on the results, attitude has a low correlation with volunteer tourism awareness. Hence, the relationship between the first independent variable (attitude) and the dependent variable (volunteer tourism awareness) is positively low. According to Rhodes and Courneya (2003), several factors influence a person's emotions and attitudes in making a decision whether the decision has a good or bad effect on themselves or those around them (Foxall et al. 2013) in spreading awareness. The state of a social network also plays a role in influencing (Terry et al. 1999; Marican et al. 2021) the emotional attitudes of a person (Leary et al. 2007, Nik Hashim et al. 2019a, 2019b) in making decisions (Foxall et al. 2013). According to Courneya et al. (2001), individuals have their own opinions regarding strategy (Zmigrod et al. 2020), ability, performance, and intention towards volunteer tourism involvement and this influences a person's (Harrison 1995) behavior and motivation (Foxall et al. 2013). Another thing that can also influence an individual's thinking is rewards (Foxall et al. 2013). Volunteer tourism requires high costs (Fisher and Ackerman 1998; Bussell and Forbes 2002; Mowen and Sujana 2005); besides, earning rewards or awards (e.g., Guy and Patton 1989; Batson 1991; Manner and Gailliot 2007) such as money and certificate can also increase a person's motivation (Zmigrod et al. 2020; Anuar et al. 2020) to participate in volunteer tourism (Foxall et al. 2013) and one's awareness of volunteer tourism. Individual participation in volunteer tourism activities can further increase one's potential in the learning process in the behavioral, psychological, and moral-ethical aspects (Shan et al. 2020; Zainuddin et al. 2020) in addition to increasing the level of awareness (McGehee and Santos 2005) with respect to one's surrounding communities. Overall, there is a positive relationship between attitude and volunteer tourism awareness among University Malaysia Kelantan City Campus students. The attitude of volunteer tourism participants can explain why they want to travel to become volunteers (Woosnam et al. 2019); hence, these findings are supported in this study.

On the other hand, the result of this study found that social influence moderately correlated with volunteer tourism awareness. Social media such as Twitter and Instagram (Jansen et al. 2009; Aziz et al. 2019) are important platforms in disseminating important information in community networks (Benady 2012; Leonhardt et al. 2008) that need to be taken into account by every individual (Gass et al. 2014). Generally, the dissemination of information will be effective with the involvement of three parties, namely specialized expertise, connectors, and salespeople (Gass et al. 2014).

In the context of volunteer tourism, specialized expertise refers to those who organize events involving volunteer tourism (Keller and Barry 2003), connectors who market or disseminate information to the public regarding volunteer tourism (Gladwell 2000), and salespeople who know about the information and disseminate or suggest other people do the activity (Gladwell 2000; Shahzad et al. 2021) including family members, friends, and so on (Gass et al. 2014). Generally, the salespeople are the ones who perform the process of persuasion to give awareness to other individuals about the existence and benefits of participating in volunteer tourism such as personality, the openness of mind, and empathy (Gass et al. 2014). Effective communication in social networks also influences a person's motivation (Singh 2004) to participate in volunteer tourism (Jaques et al. 2019). Individuals who receive the message will understand it well and this will further increase volunteer tourism awareness. Overall, there is a positive relationship between social influence and volunteer tourism awareness among University Malaysia Kelantan City Campus students. Encouragement from the people around can influence variations in the frequency of participation (Woosnam et al. 2019); hence, these findings are supported in this study.

Last but not least, this study found that perceived behavioral control (PBC) is moderately correlated with volunteer tourism awareness. In this context of study, perceived behavioral control is applied to the individual's ability in terms of finance, stamina, time, trust, and any other factors involved (Hale et al. 2002) before the individual makes any decision to participate in any activity related to volunteer tourism. Perceived behavioral control is influenced by the internal and external environments of the individual (Rodgers et al. 2007; Bandura 1999) in making rational decisions by making detailed analysis and it is further influenced by intentions aligned with beliefs (Ajzen 2001). The external environment such as the support from close people, friends, attractive advertising, and complete information regarding volunteer tourism can also influence individual awareness of volunteer tourism and the decision making of individuals. Good perceived behavioral control (PBC) enables an individual to make decisions rationally (McGehee and Santos 2005; Morgan 2010; Ulusoy 2016; Zahra and McIntosh 2007) by assessing his or her own capabilities (Mezirow 1981) and contributions if the individual is involved in activities related to volunteer tourism in the future (Shan et al. 2020). Overall, there is a positive relationship between perceived behavioral control (PBC) and volunteer tourism awareness among University Malaysia Kelantan City Campus students. Certain behaviors are a function of participants' trust in themselves as well as tourism volunteer organizations that allow them to also produce good outcomes or vice versa (Chua et al. 2021); hence, these findings are supported in this study (Table 3).

In conclusion, the study found that attitude, social influence, and perceived behavioral control significantly influence volunteer tourism awareness among university students. The findings also indicated that the factors influencing volunteer tourism participation are due to individuals' intention to learn something new and this could make individuals join volunteer tourism instead of leisure tourism. In addition, another factor influencing volunteer tourism is the big commitment that is mostly given by the people around the individuals like friends or family to involve in volunteer tourism. The findings also demonstrated the importance of joining volunteer

Table 3 Hypothesis testing decision for this study

Hypothesis		Pearson's correlation result	
H1	There is a significant relationship between attitude and volunteer tourism awareness	$r = 0.369, p < 0.01$	Supported
H2	There is a significant relationship between social influence and volunteer tourism awareness	$r = 0.599, p < 0.01$	Supported
H3	There is a significant relationship between perceived behavioral control and volunteer tourism awareness	$r = 0.647, p < 0.01$	Supported

tourism among university students in University Malaysia Kelantan City Campus. Lastly, this study can provide a lot of knowledge that may be useful for the volunteer tourism industry to develop more awareness among university students to participate in volunteer tourism. There is no denying that this study has limitations. Mainly, this research focused only on university students. The generalization of results is limited to the scope of the research object, so it cannot be used to generalize results at a broader level. To improve the generalization of the results, repeat studies are recommended in the future, where future research can replicate this using study between different backgrounds, such as focusing on all university students in Malaysia or comparing two different nationalities, etc. It is better constructively to have a sufficient sample size for each group. In addition, the current study focuses on only three aspects to increase consumer awareness about voluntary tourism. Therefore, a longitudinal case study method can be proposed in the future to provide better results on voluntary tourism awareness among university students.

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Potential Heritage Tourism of an Old Palace, Istana Sepahchendera: Understanding the Influence of Socio-Culture of Royalty



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Abstract Heritage building in Malaysia consists of several typologies, and one prominent type is the palace. There are several historical backgrounds related to the architectural style of palaces in Malaysia according to the socio-culture, namely the decrees, customs, and function of spaces which result in the place typology, such as the residence palace, ceremonial palace, visiting the palace, crown prince's palace, and more. This research aims to analyze the socio-cultural factors of Kedah royalty on the spatial organization of an old residence palace in Kedah, namely Istana Sepahchendera, built in 1883. This research used the case study method to achieve its objective following analytical literature review, measured drawings, site observation, and personal interview. The findings indicated that the socio-culture of Kedah royalty, according to the royal custom and traditions, namely the activity system, privacy, family structure, the role and position of women, and social interaction, influenced the specifics of the residence palace architecture, particularly the spatial organization, spatial relationship and the circulation of the palace. The results of the research support the relationship between socio-culture and the built environment. The consort represents how the Siamese culture adapted the socio-culture of Kedah Royalty and honored them with a palace with the vertical division of space zoning in Istana Sepahchendera. This would be an attraction for heritage tourism in Kedah and Malaysia due to the exciting relationship between Kedah and Siamese culture.

Keywords Heritage · Palace · Royal · Tourism

1 Introduction

Heritage tourism is not a new attraction in Malaysia, yet it was increased as Georgetown, Penang, and Malacca City were honored as UNESCO Heritage Site for the historical cities. Nevertheless, other states in Malaysia can be developed with the

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same historical attraction, including Kedah Darul Aman. This state has an interesting connection with Thailand or Siam, from history, specifically the royalty relationship between these two. The socio-culture of royalty, the rulers as positioned on the highest social standing in a given society, is more refined than the commoners and strongly influenced by royal customs and traditions. Rapoport further suggested that culture is the main factor influencing traditional building, and other factors, such as climate, materials, economics, and site, are modifying factors (Rapoport 1969). The specifics of the how, where, what, and when certain activities will give clues as to what the forms of the building will be (Rapoport 1969). These specifics influence the characteristics of a building which subsequently support the socio-culture of the people who use or inhabit it. The socio-culture of royalty influenced the architecture of the palaces, particularly the space organization, consistent with the suggestion that socio-culture influences the built environment (Muhammad 2011). According to Rapoport, creating the ideal environment is expressed through the specific organization of space (Rapoport 1990). Hillier noted that the socio-culture must reflect the spaces provided; otherwise, there will be a design failure (Hillier 1996).

Meanwhile, the traditional Malay house is respected as a cultural and social representation of the Malay race whereby it resembles the indigenous technology impact upon the climate, human scale, and social needs (Muhammad 2020). The uniqueness of the traditional Malay house can be adapted by selecting suitable components that represent the aesthetic of traditional craftsmanship, such as the girders, floor, column, beams, and walls (Muhammad 2018). These characteristics may also be adapted in designing palaces in Malaysia. One of the socio-cultural factors is kinship and caste (Rapoport 1990). The ceremony is also a prime influence, as all society has a sense of belonging to its own culture, perception, and symbols (Rapoport 1990). A review of the literature has shown that the architecture of the palaces was influenced by the socio-culture of the royal families in general. For example, unlike commoners, the royal family does not cook for themselves, but meals are prepared and served by royal servants. Subsequently, the way and how the meals are served may have influenced the spaces.

Similarly, the hierarchy of the royal family members influenced the provision of the spaces in the palaces based on tradition. Therefore, this study's limitation and objectives are to determine the relationship between the royalty's socio-culture and the spatial relationship, spatial organization, and the circulation of Istana Sepahchendera. The findings can be the future reference in understanding the socio-culture influence on the architecture and potential tourism development for the country.

1.1 Palaces in Malaysia

A palace in Malay is known as *Istana*. The palaces were either built in a fort (*Kota*) or without a fort surrounding them. Literature review on palaces around the world indicates that there are many types of palaces related to their different functions (Samad 1984; Nasir 1993; Michell 1994; Suksri 1996; Jinghua and Hualiang 1998).

Table 1 The types of palaces in Malaysia (Jaafar and Morsidi 2007)

	Function	Example	Year
<i>Istana Bersemayam</i> (residence palace)	Official residence for the Sultan or Raja	<i>Istana Negara</i>	1928
		<i>Istana Jugra, Selangor</i>	1860
		<i>Istana Anak Bukit, Kedah</i>	1735
		<i>Istana Balai Besar, Kelantan</i>	1844
		<i>Istana Sultan Abu Bakar, Johor</i>	1866
		<i>Istana Hulu/Istana Kota, Perak</i>	1896
		<i>Istana Mangga Tunggal, Pahang</i>	1900
		<i>Istana Seri Menanti, Negeri Sembilan</i>	1902
<i>Istana Adat Istiadat</i> (ceremonial palace)	A ceremonial palace where formal ceremonies/ procedural take place	<i>Istana Bandar/Temasya/Kuala Langat, Selangor</i>	1905
		<i>Istana Balai Besar, Kelantan</i>	1844
		<i>Istana Maziah, Terengganu</i>	1895
		<i>Istana Pelandan, Kedah</i>	1900
<i>Istana Hinggap</i> (visiting palace)	A palace used for the Sultan/Raya and royalties during a visit or vacation	<i>Istana Hinggap Seremban</i>	1920
		<i>Istana Hinggap Lipis, Pahang</i>	1926
		<i>Istana Ampang Tinggi, Negeri Sembilan</i>	1865
<i>Istana Raja Muda</i> (crown prince's palace)	A residence for the crown prince	<i>Istana Kuala Chegar, Kedah</i>	1927
		<i>Istana Pasir Pelangi, Johor</i>	1912
		<i>Istana Pumpong, Kedah</i>	1883
<i>Istana Tetamu</i> (guests' palace)	A palace where royal guests stay during their visits	<i>Istana Tetamu, Kuala Lumpur</i>	1900
<i>Istana Sultan</i> (Sultan's private palace)	A palace specifically built for the personal and private use of the Sultan	<i>Istana Kuning, Kedah</i>	1904
<i>Istana Sultanah</i> or other royalty (the consort's palace or other royalty members)	A residence for the consorts	<i>Istana Sepahchendera</i>	1882
		<i>Istana Diraja Selangor</i>	1900
		<i>Istana Jahar, Kelantan</i>	1887
<i>Istana Kerabat</i> (the royalty's palace)	A palace built for the royal family members		

The palaces were built for the royal families' general and specific needs, security, and privacy. Table 1 lists the types of palaces in Malaysia concerning their functions. There are residence palaces, ceremonial palaces, visiting palaces, crown prince's palace, guests' palaces, the Sultan's private palace, the consort's palace, and the royalty's palace (Jaafar and Morsidi 2007).

1.2 *Istana Sepahchendera*

Istana Sepahchendera was specially built for Che Sepahchendera, the first consort of Sultan Abdul Hamid Halim Syah, in 1882. The architecture of the palace, which resembles the Siamese mansion (Fig. 4), in that era, was different from other Kedah palaces and strongly supported the idea that socio-culture influences the built environment (Rapoport 1969; Hillier 1996; McClure and Bartuska 2007) and on the architecture of the palaces. Unlike the other consorts who were also from Siam, Che Sepahchendera was not from an aristocratic family but a royal performer in the Siamese palaces (Tengku Zainol Rashid 2009). Figure 1 illustrates the main entrance of the old palace, Istana Sepahchendera.



Fig. 1 Main entrance of Istana Sepahchendera, Kedah



Fig. 2 Dusit Palace, Bangkok Thailand (Suksri 1996)

Istana Sepahchendera is symmetrical in plan. It was influenced by the Western architecture introduced in the 1800s in Southeast Asia, including Siam. The use of brick as a flat roof is consistent with buildings in Siam at that time (Fig. 2).

Western mansions had been constructed in Siam since the reign of King Rama III, who ruled the country from 1824 to 1851 (Suksri 1996). The mansion architecture was a trend for Siamese royalty whereby they had been exposed to Western life, economy, and education since 1800. Siam also hired several artists, painters, and architects from Europe, such as Italy and France, to design and decorate their palaces and mansions (Suksri 1996). Kedah was under the supervision of Siam since 1821 during the reign of Sultan Ahmad Tajuddin Halim Syah II, who was the Kedah sultan from 1797 to 1843. The architecture of the Istana Sepahchendera was built according to the socio-culture of the owner, who was from Siam. It reflects the need to have a supportive living environment for the users even in different contexts. The Sultan built the palace in honor of his consort, consistent with and supportive of the lifestyle of Che Sepahchendera, who came from a different culture. The intention was to provide a living environment similar to the one in her homeland. The palace includes a beautiful garden and was aesthetically beautiful, decorated with wall carvings and details. The physical form and architectural details of the palace are consistent with those in the Siamese mansions at that time. Information on the specific activity system of Che Sepahchendera's royal household is limited. However, as a consort to the Kedah sultan, the royal socio-culture was expected to be essential and followed while some socio-cultural traditions of the consort were maintained.

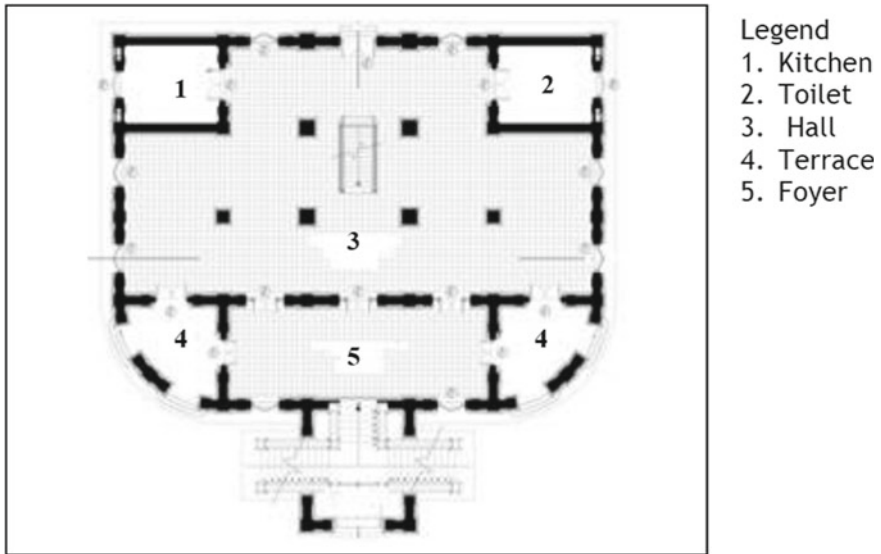


Fig. 3 Ground floor plan of Istana Sepahchendera

As far as the hierarchy is concerned, the Sultan is always at the highest position in the family hierarchy, followed by the consort and their children. As the consort to the Sultan, Che Sepahchendera was provided with maids, servants, guards, and other services according to the royal family. Therefore, as far as daily activity was concerned, the royal family was served. Food was prepared at the palace by the royal cook and served to the royal family. As mentioned, it was regular for meals for the Sultan to be brought from Istana Anak Bukit whenever he went to other palaces. Therefore, the food was prepared for serving on the ground floor of the palace. There is no information on the meals for Che Sepahchendera and her princes and princesses, but available information indicates that food was prepared on the palace's ground floor and served on the first floor through a dumbwaiter (Heritage Study 2018). Bathing and toilet activities were done in the bathroom on the first floor of the palace. Water for daily use was brought into the palace from the river. Security and privacy were necessary for the Sultan and his consort. Guards were stationed at the main entrance and surrounding the palace. The privacy of the royal households was provided by the separation of public and private spaces according to the hierarchy of the family through different levels. The ground floor was the public area where the maids, servants, and security guards were stationed most of the time. On royal occasions, when guests were invited, it would be held on the ground floor. Guests entered through a terrace before entering the main entrance (Fig. 4). They were not required to remove their shoes before entering the palace, unlike the Malay tradition of taking off before entering a house. Che Sepahchendera was said to be a beautiful Siamese royal performer before she married the Sultan. The literature review indicated that it was normal for people to bring their culture and way of

life when they settled in a different place and culture (Proshansky et al. 1976). As a performer, Che Sepahchendera was used to having many beautiful costumes. This is supported by the provision of a walk-in closet on the second level of the palace. This suggests that she brought her lifestyle to Kedah after becoming the Sultan's consort (Tengku Zainol Rashid 2009).

2 Methodology

The overview of the research methodology suggests that, based on the objectives, the most appropriate method was a qualitative approach. At the same time, there was a minimal reference in the study and works on royal socio-culture concerning the palaces in Malaysia. The qualitative method can provide insights into the subject studied. Tipple and Willis noted that the qualitative method allows for fluid interaction between people and the physical environment and interprets the built environment as a symbol of the inhabitants' cultural values and social order (Tipple and Willis 1991). Analytical review of the literature, historical, and documentary sources were used to acquire information on the socio-culture of Malay royalty and the background of the selection of palaces for the study. The review included secondary sources, running records, and recollections on the history and background of the royal families and palaces. The secondary source was gained from the archive at Arkib Negeri Kedah dan Perlis involved books, encyclopedias, and research reviews gathered from the State Library of Kedah, the National Library, the State Museum of Kedah, the National Heritage Trust, and the Library of International Islamic University Malaysia. An analytical review of measured drawings on Kedah palaces was employed to examine the architecture of the selected Kedah royal palaces for study. The secondary data of the measured drawings were in the form of reports, measured drawings, pictures, and multimedia on the Kedah palaces, namely Istana Kuning, Balai Besar, Balai Nobat, Istana Pelamin, Istana Sepahchendera and Istana Kuala Chegar from Heritage Laboratory, Kulliyyah of Architecture and Environmental Design, International Islamic University Malaysia. All the measured drawings on the palaces are available in hardcopy. The data included pictures and videos of the palaces that provided three-dimensional presentations of the palaces. The researcher conducted site observation on the palace to study the information gained from the literature review of the Heritage Studies' records about the palaces. The observation was based on a list of observationnaires to ensure that all required information was recorded. Information gathered was in the form of pictures, sketches, notes, and videos. A personal interview was employed to gain information regarding the research questions. The data collected particular activities in the palaces that were not available from secondary data. The interview was non-structured. One of the intentions of the interviews was to obtain information on the socio-culture of the Kedah royal family during the reign of Sultan Abdul Hamid Halim Syah and the functions of the spaces in the palaces. The interviews were conducted in the Malay Language, as it is the mother tongue of both the interviewees and the researcher. The questions

were non-structured basepared list of questionnaires. Two people were interviewed, namely the Director of Kedah's Royalties Society, Dato' Tengku Zainol Rashid bin Tengku Yahya, and the manager of Kedah Royal Museum, Madam Rosmah binti Mahmud. The former took place at the Istana Kuning (Yellow Palace), as it currently functions as the office for the Kedah Royalties Society or Persatuan Kerabat Diraja Negeri Kedah. The interview took about 40 min and was recorded using a video camera. The interview emphasized the subjects which have lack information from the review of historical and documentary resources, such as:

- i. The lifestyle of Sultan Abdul Hamid Halim Syah
- ii. The background of Che Sepahchendera
- iii. General information on other palaces

3 Findings and Analysis

The spaces in Istana Sepahchendera were vertically divided into public, semi-private, and private domains, whereby most of the public domain was located on the ground floor and the private domain on the second and third levels. The private domain was further divided, whereby the most private domain for the Sultan and his consort was located at the highest level. The clear division of spaces reflected the hierarchy of the royal family, whereby, symbolically, the highest level represented the hierarchy of the Sultan and his consort at the highest level compared to their children and royal workers. The division of spaces was influenced by the need to provide comfort for the daily activity system, provide privacy, and enhance the role and position of the Sultan and his consort. For example, the public domain where most of the maids, servants, and guards performed their works was separated from the first and second levels designated for the royal family. Similarly, the occasional activities held on the ground floor ensured their privacy at all times.

The provision of spaces in Istana Sepahchendera was based on the activity system of the royal family. The back area of the palace consisted of spaces that were considered as a wet and 'dirty area' where the preparation and cleaning took place. Kitchens and toilets were located at both sides of the symmetrical palace, with entrances directly to the outside for convenience. These areas were invisible from the public area or the 'front area' of the palace. The rear access of the palace faced the backyard where the royal canal was located. The royal canal was the source of water for Istana Sepahchendera. The kitchen and toilet at the rear of the palace and close to the rear entrance was convenient for the maids and servants to carry water from the canal for cleaning, cooking, food preparation, and toilette activities. The backspaces were screened to avoid views from the public area of the ground floor.

The front area of the ground floor was considered the public area, which was kept clean and in order as it was a public area and visible as one entered the palace. Two staircases from both sides at the front of the palace met at the landing in the middle of the covered porch leading to the first floor, giving a sense of grandeur to the palace. There were two entrances at the ground level accessed from the two covered terraces,

as shown in Fig. 4. Guards were positioned at the main entrances to provide security. The center of the ground floor hall was elongated and divided by the staircase leading to the first level. Screened panels were used to partition the back area of the ground floor. The staircase facing the rear entrance provided easy access for the servants to carry water and serve food on the first level for the royal family. The hall was multi-functional as it was used for many activities, including occasional activities when guests were invited. The foyer served as the resting place for the maids, servants, guards, and storage (Heritage Study 2018). Figure 3 illustrates the ground floor plan of Istana Sepahchendera.

As mentioned in the previous section, the second level of Istana Sepahchendera was a semi-private domain designated for the royal family. The plan was similar to the ground floor except for the usage. The spaces provided were a walk-in closet, toilet, living hall, foyer, and waiting area. The walk-in closet was designed to store Che Sepahchendera's costumes, dresses, and belongings. The provision of this space reflected the royal family's different lifestyles compared to the commoners and other royalties. The living hall was a multi-purpose space that accommodated many activities. Rooms were partitioned within the living hall to provide sleeping areas for the princes and princesses. The main entrance to the first level was through the grand staircase from the ground floor, providing a clear division between the private and public domains (Fig. 4). Two staircases were leading to the first floor other than the grand staircase. A semi-spiral staircase was located at the left foyer. This staircase was only accessed by Sultan Abdul Hamid Halim Shah and his consort. The front staircase was the only entrance to the first and second floor of the palace from outside. It linked to the waiting area where the guests waited to be entertained by the Sultan.

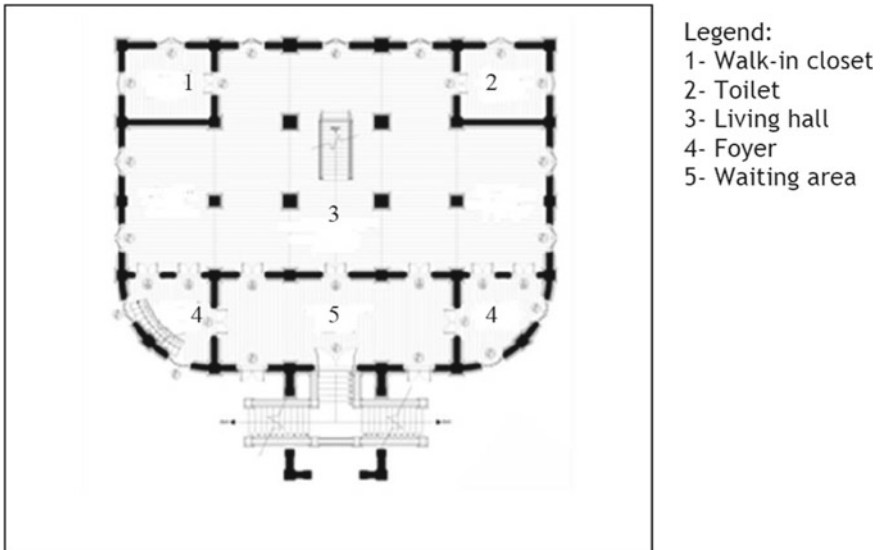


Fig. 4 First floor plan, Istana Sepahchendera

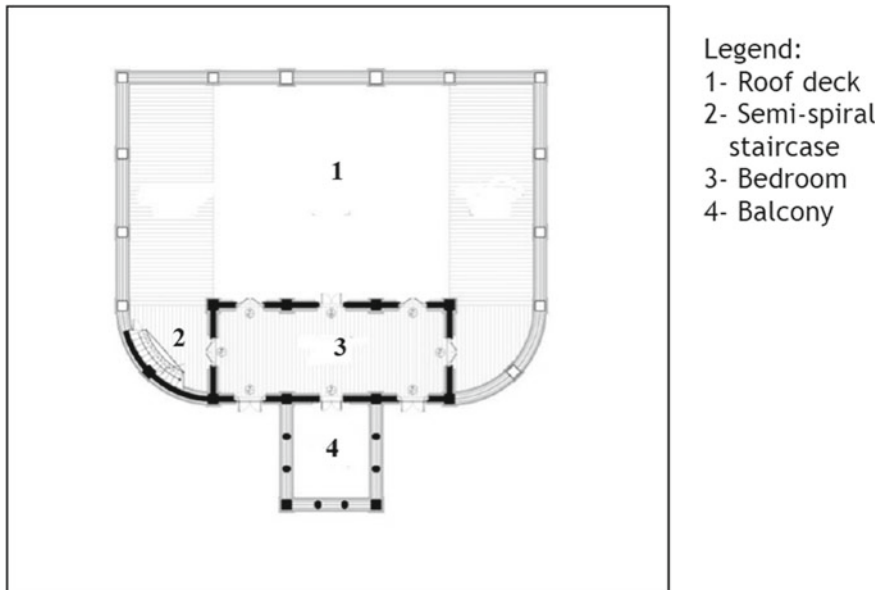


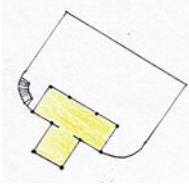
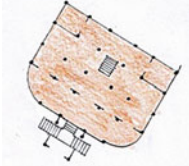
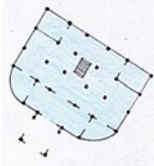
Fig. 5 The second-floor plan of Istana Sepahchendera

The second floor was the private area in the palace, mainly for the Sultan and his consort. It included a bedroom, a balcony, and a roof deck (Fig. 5). The deck at the rooftop was never reached by anyone except the Sultan and consort, as access was only allowed for them. The room for the Sultan and the consort was also restricted for others. The Sultan and his consort used the balcony which projected from the first floor's staircase to view the surroundings.

4 Spatial Relationship

Based on the above discussion, this palace was a residence palace built as a three-story building. The spaces within a space occupied different activities from different provisions, the private, semi-private and public. The interlocking space was created on the first floor. The open space in the living area occupied the multi-activities of the royal family. The view towards the living area and the hall on the ground floor were screened by the foyer and waiting area. The central staircase was the main link between the ground floor and the first floor, and the inner activities were through this access only. The provision of spaces at Istana Sepahchendera is summarised in Table 2, and Table 3 indicates how the socio-cultural activities influenced the spatial relationship, spatial organization, and accessibility of Istana Sepahchendera.

Table 2 The provision of spaces inside Istana Sepahchendera

Activity	Spaces	Description
Private i. Sleeping	Second floor 	Rooms at this level were forbidden to others except for the Sultan and Che Sepahchendera
Semi-private i. Living area ii. Eating iii. Sleeping iv. Relaxing v. Entertaining the guests	First Floor 	The main family living area was located here but used the concept of open space
Public i. Entertaining guests ii. Preparing the meals iii. Guarding the palace	Ground Floor 	This is the place for the maids, servants, and security guards to perform their duties. Were there to be any function, this area was opened for the guests


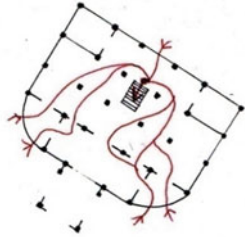
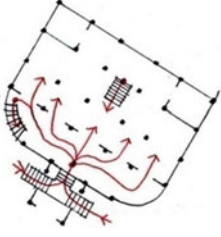
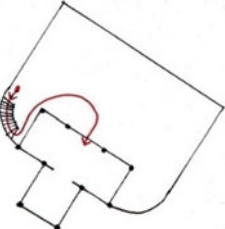
5 Spatial Organisation

The spatial organization of Istana Sepahchendera was centralized. The maids, servants, and security guards performed the activities and duties inside the building until the Sultan went to sleep. This building had a shared space as a center point, which was the inner staircase connected each level. The primary activity was centralized on the first floor, where the royal family spent their time most of the day. The staircase in the middle of the hall only connects the ground floor with the first floor and shows that the private area on the second floor was only accessible by the Sultan and his consort. The staircase to the second floor was narrow and semi-spiral, located at the first floor’s foyer. Table 4 shows the summary of the spatial organization of the palace.

Table 3 Summary of space organization

Spatial relationship	Istana Sepahchendera	Figure
Space within a space	<ul style="list-style-type: none"> - the spaces arranged in one building - the spaces divided the occupants by leveled floor 	
Interlocking spaces	<ul style="list-style-type: none"> - the open space concept utilised the space with multi-functions used on the first floor 	
Adjacent spaces	<ul style="list-style-type: none"> - the hall on both floors adjacent to the foyer and also the waiting area. The activities at the hall were screened by these spaces 	
Spaces linked by common space	<ul style="list-style-type: none"> - a hall with a central staircase was the main link between the ground floor and the first floor. The inner activities were through this access only 	

Table 4 The external spatial organization and the circulation of Istana Sepahchendera

Description	Figure
<p>i. The spatial organization of this palace was centralized</p> <p>ii. This building has a shared space as a center point, which was the inner staircase connected each level</p>	 <p>The stairs are at the center of the hall to the ground floor</p>
<p>Ground Floor</p> <p>i. The access to the ground floor was controlled by the compartment and lesser entrance/exit</p> <p>ii. It used recessed entrances for security purposes</p> <p>iii. The immediate access to the first floor was the staircase inside the ground floor</p>	
<p>First Floor</p> <p>i. The circulation approach was oblique and not directly to the entrance</p> <p>ii. The access on the first floor was from two main entrances/exits only</p> <p>iii. The staircase was connected from the ground floor</p> <p>iv. The semi-circle staircase was to the second floor</p>	
<p>Second Floor</p> <p>i. This was a private area</p> <p>ii. The only access was through the semi-circle staircase from the first floor</p>	

6 Circulation

The circulation of the palace is discussed in several characteristics, namely the approach, entrance, configuration of the path, path-space relationship, and form of circulation space. The circulation approach of this palace is oblique. This palace has

an indirect view towards the main entrance from a distance. The main entrance was emphasized with the decorated arches, but the access was indirect from the palace compound. The main entrance was also highlighted with the projection of the front staircase. Above the staircase was located a balcony from the second floor (Fig. 6) from which the Sultan and the consort could view the access of the main entrance and



Fig. 6 The balcony on the second floor

the surroundings. The entrances on the ground floor were recessed and welcomed the guests with a foyer before they reached the hall. The sequence of the path of the spaces is radial. The movement inside the palace was through the central staircase at the hall, and the path inside the palace was through the spaces—the entrances all connected with the foyer and a waiting area before reaching the halls. The guests were separated from the royal family's privacy with these spaces. The waiting area and foyers form a visual and spatial continuity with the spaces they link. Table 5 shows a summary of the circulation of Istana Sepahchendera.


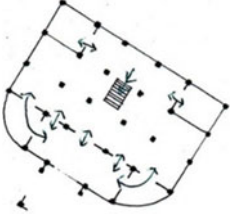
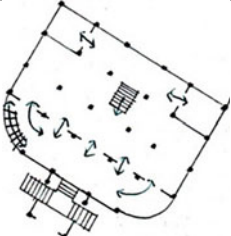
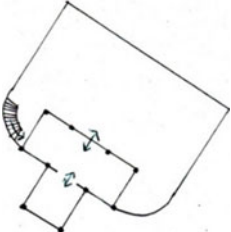
7 Conclusion

The literature review has indicated that Sultan Abdul Hamid Halim Syah had many wives or consorts. The background of the consort determined her position and also that of her children. For example, only a prince of a consort from royal blood could be enthroned as a sultan. A son from a non-blood royal consort would never be allowed to be a sultan. The family structure of the Kedah royal family influenced the architecture of the palaces, whereby, unlike some cultures, the consorts did not live together in one palace. The Sultan's consorts lived separately in different palaces with their respective children. The Sultan usually lived in one palace, merely visiting the palaces of his consorts. However, a personal interview indicated that he spent most of his time at the main palace, Istana Pelamin, which is closely located to the Balai Besar, the administrative palace. It can be assumed that Sultan Abdul Hamid Halim Syah divided his time between his consorts and the need to run a state.

Findings indicate some typical characteristics of the palace related to the socio-culture of the Kedah royal family, as follows:

- i. The division of domains according to public, semi-private, and private domains. Istana Sepahchendera was divided vertically, unlike the traditional Malay architecture; the palace is three-story high.
- ii. The provision of spaces in the palaces was consistent with the socio-culture of the royal family. The culture of the consort influenced the architecture of the palace, the space organization, and the provision of spaces. For example, findings discovered the provision of a walk-in closet in the Istana Sepahchendera, which was not a feature of traditional Malay architecture, as an influence from Western culture, which was in trend in Siam, the origin of the consort at that time.
- iii. Multiple entrances to the palaces separate the areas between the royal family and the palace workers, provided convenience to the daily activities, such as transporting water to the palace for daily use and provide and defend the 'front area' and the 'back area' of the palaces where the palace's daily chores of took place. The many entrances leading to the separate domains of the palace provided privacy to the royal family at all times.

Table 5 The internal circulation of Istana Sepahchendera

Description	Figure
<p>i. The circulation, which is the configuration of the path of this palace, was radial</p> <p>ii. A radial configuration has linear paths extending from a central or shared point. In this palace, the common point was the inner staircase</p> <p>iii. The path passed through the spaces</p> <p>iv. This building applied the open-spaces concept but separated the activities by a three-story building</p>	 <p>The balcony on the second floor</p>
<p>Ground Floor</p> <p>The inner circulation in the ground floor was controlled by the doors and limited access to the first floor</p>	
<p>First Floor</p> <p>The inner circulation on the first floor was also controlled with the door and compartment, such as the waiting area and balcony. It signaled the limitation of movement inside of this palace where family privacy and security were a priority</p>	
<p>Second Floor</p> <p>The inner circulation on the second floor was limited, with only a single entrance and access. It controlled the access to the rooms on this floor</p>	

iv. Appropriately located doors between the domains and the location of the staircases connecting the levels in the Istana Sepahchendera provided connectivity between the spaces but maintained the royal family's privacy.

- v. The family area was a multi-purpose space and used as the main space for the family. It was located adjacent to the 'back area' of the palace, providing convenience for the palace workers to serve the royal family.
- vi. The circulation of the palace afforded a welcoming approach and accessibility. Istana Sepahchendera had entrance staircases that were not frontal but located at both sides of the central porch.

This study contributes to conclude the robust understanding of the differences in the architectural style of a palace in Kedah, Malaysia, compared to other palaces because of the consort's socio-cultural influences. This can be an exciting attraction for Kedah's heritage tourism in the future.

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The Effect of Facility Aesthetics on Guest Satisfaction: The Case of Three Star Hotel in Kelantan



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Abstract The aim of this paper is to explore the effect of facility aesthetics on hotel guest satisfaction. Facility aesthetics is one of the features in the servicescape physical environment. It plays an essential role in many facilities such as restaurants and hotels, which provides the first impression before customers have a chance to interact with service employees. The effect of atmospherics, or physical design and décor elements, is crucial in facility aesthetics that articulate guest beliefs, attitudes, and expectations of a service provider that increases customer satisfaction. There is a study on servicescapes conducted related to the physical environment, but currently, no study is conducted on the effect of elements in facility aesthetics towards guests satisfaction, which focuses on the hotel located in Kota Baharu, Kelantan, Malaysia. This preliminary study involved 384 hotel three-star guests in Kota Bharu, which employed a questionnaire survey as the primary data collection method. This study's target respondents will be the customers who have visited any of the hotels in Kota Bharu, Kelantan were chosen for data collection. With 384 respondents, the data was analyzed by the process of multivariate analysis. The results of the study provide evidence that there is a linkage between facility aesthetics and guest satisfaction. Through these findings, it can be deduced servicescape through facility aesthetics dimensions influence guest satisfaction.

Keywords Customer satisfaction · Facility aesthetics · Servicescape

1 Introduction

The hotel industry is a business sector that provided large and multiple sectors to the guests and tourists, ranging from food and beverage service to sales departments (Gangai and Agrawal 2018; Joseph Ekhayemhe and Oguzie 2018). In 2014, the arrival of foreign guests to Malaysia was 63,193 people; however, it drastically decreased to 58,327 people in 2015. In contrast, the number of domestic guests is

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1,144,316 people in 2014 and decreased to 1,121,000 people in 2015. These data reflect the total number of tourist arrivals in Malaysia, and the number of hotel guests in Kelantan specifically keeps declining year by year. The declination of the total hotel guests in Kelantan can be affected by various factors (Tourism Malaysia 2017). Based on the previous study from past researchers, the dining atmospherics such as ambiance, furnishings, colors, style, layout, and lighting significantly impact service quality (Sekar and Sudha 2021). The elements of empathy, responsiveness, reliability, assurance, and tangibles are used to measure the hotel's service quality (Malik et al. 2013). The food freshness, food presentation, service reliability, service responsiveness, cleanliness, and ambient scent have a positive relationship with customer satisfaction Chow et al. (2013), Tuzunkan and Albayrak (2017) mentioned that the outcomes from the research study showed that the facility aesthetics, ambient factors, lighting, layout, table setting, and service staff have a strong relationship between customer characteristics. The physical environment, such as ambient conditions, spatial design, signs, symbols, and artifacts, plays an important element in customer satisfaction. The physical environment is not just a marketing tool, but it indirectly affects the hospitality industry's loyalty level (Jysmä 2012; Nassar and Battour 2020). The interior design, such as space and layout, background noises, aesthetics and tableware, color, ambient light, and music, influences customer satisfaction (Pecotic et al. 2014).

Angriawan (2021), stated that the result supported that facility aesthetics include interior design, artwork, furniture aesthetics, interior spacing, color, lighting, and layout accessibility, including the spatial layout and furniture layout influencing the customer's emotion positively. Hsieh et al. (2018), pointed out that the variables such as service quality, price, and environment have directly or indirectly affected customer satisfaction in terms of loyalty and word of mouth. Servicescape is commonly used to explain the service company's physical environment in the framework for Understanding Environment-User Relationships in Service Organization (Bitner 1992). Besides that, Ryu and Jang (2010) also mentioned that servicescape describes the characteristics of the physical environment. Sekar and Sudha (2021), explained that servicescape is the artificial physical environment where the service is taking place. This means that the physical environment is also described as a servicescape. Moreover, Amato (2016) stated that a servicescape is a tool used in consumer behavior, influencing consumer behaviors and emotions in the physical environment Ariffin and Aziz (2012), Hsieh et al. (2018), stated that facility aesthetics, ambiance, lighting, layout, service staff, and table setting are the six factors of a physical environment that can impact customer attitudes and emotions.

These six factors are used as the scale to measure the service quality for the hotel or dining area. Besides that, employee attitudes, room, price, location, services, reception, facilities, food and beverage, and parking will also affect customer satisfaction towards a hotel Ali and Amin (2014), Hanaysha 2016), mentioned that price fairness, food quality, and physical environment could enhance customer satisfaction. The freshness, nutrition, variety of menu items, taste, and delicious food, and the smell of food under categories of food quality and tangibles, reliability, responsiveness, assurance, and empathy, have a positive relationship with customer satisfaction

Al-Tit (2015), Tuzunkan and Albayrak (2017), researched Turkish customers that indicated the impact of the restaurant's physical environment. They looked for the elements of facility aesthetics, ambient factors, lighting, layout, table setting, and service staff. Hence, research conducted in boutique hotels in Hotel Haven, Helsinki indicated that physical environment elements are important to customer satisfaction which only focuses on ambient conditions, spatial layout, and signs, symbols, and artifacts (Jysmä 2012). A study by Singh and Band (2021) discovers that facility aesthetics impact hotel lobbies and layout accessibility on customers' emotions and behavioral intentions. This study only looked for the elements of facility aesthetics, whether it brings positive or negative emotions to customers.

The hospitality industry and customer service were related to each other, and all industry segments used it. The business focused on all or one aspect of hospitality. The way to satisfy guests would determine the level of success for the business (Nassar and Battour 2020). Previous research had provided many factors that lead to guest satisfaction towards the hotel. Service quality had not been studied much and specified on the hospitality industry in Kelantan, and the previous research mainly focused on Europe, the US, Korea, Australia, Bangladesh, and Iran. The critical factor used to differentiate service was the quality of service Dam and Dam (2021), stated that to secure customer satisfaction and provide a high quality of services and products. Each customer had a different way of measuring the values of service quality. He also said that the customer's point of view was the key point to determine the level of service since the customer used the product. Angriawan (2021), confirmed that the foodservice affected the different levels of satisfaction among regional groups.

Previous research discovered differences in satisfaction perception between three groups of tourists: on presentation of food, number of dishes, quality of food, food service standards, value for money, variety of dishes, and speed of service in general (Angriawan 2021). Studies in Romania scrutinize that the overall results showed that value for money, food quality, the attractiveness of the surroundings, variety of dishes, and food presentation were affected most to the overall foodservice experience. The study also showed that the critical contributor to tourist satisfaction was the food service. There were differences in satisfaction levels between Romanian, eastern, and western European tourists with the foodservice (Gabrow 2021). This clarifies that food quality might have a different effect on guest satisfaction for another country. Therefore, the relationship between food and guest satisfaction in hotel Kelantan needed to study. Quality accommodation was accredited accommodation providers could tell potential customers that they were a standard that was recognized at the national level. Ratings were separated by type of accommodation such as hotel, B & B, Holiday Parks, etc. Usually, they consisted of one to five stars, based on various standards and facilities and level of service. Based on Gabrow (2021), the inn was a clear link to tourism since the hotel provided accommodation and meals. Tourism was undoubtedly the key to the country's economic growth stimulus, and the hotel was an important part of the overall equation. However, no previous studied on the effect of accommodation on hotel guest satisfaction Kelantan even knew the apparent connection between accommodation for tourism. Therefore, the research aims to study facility aesthetics' impact on hotel guest satisfaction in Kelantan.

2 Servicescape

According to Amato (2016), servicescape involved the dimensions of the physical surroundings or physical environment that the customer could feel and experience. The Bitner (1992) framework has been created to understand the relationship between an environment and the user in service organizations. Servicescape will help the customers categorize a firm and help the customer create an emotional and physiological response, whether in a positive or negative impact to a firm. It also provides the image of an organization to customers before the customer interaction with the service provided. Bitner (1992) stated that servicescape is a physical setting of the environment where a service is delivered. How service to be delivered will depend on how the service providers use various physical factors that can be found in the environment to influence the customer behavior and attention (Petzer and Mackay 2014). Servicescape is the physical environment design also plays an essential role in facilitating and making sure the service that provides leads to customer satisfaction (John et al. 2013).

2.1 Facility Aesthetics

In elements of servicescape, namely facility aesthetics refers to the characteristics of wall decoration, pictures or paintings, architectural design, interior design, décors, such as furniture, plants or flowers, and Singh and Band (2021), Tuzunkan and Albayrak (2017), pointed out that facility aesthetics include artwork, furniture aesthetics, interior scaping, lighting, and color. Chang (2012) explained that facility aesthetics refer to the interior architectural design used in the hotel together with the interior design and décor. The interior architectural design focus on furniture, color, paintings or pictures, wall décor, and plants or flowers. Facility aesthetics is one of the components of the physical environment. The furniture and decoration, wall and ceiling design, texture and color, and window and door are the features of facility aesthetics (Liu and Chuang 2014). Facility aesthetics also refer to the aesthetic factors defined as a function of the architecture, including the ceiling and wall decoration, color scheme, flowers and plants, interior décor, and paintings and pictures (Ryu and Jang 2010).

Based on John et al. (2013), the dimensions of physical settings include the layout, interior design, and decoration under the part of the physical environment. The physical location will influence the customer's cognitive, emotional, and physiological aspects, including the customer's behavior. Ariffin and Aziz (2012) highlighted that the facility aesthetics cover the architectural design, interior design, and décor, drawing attention from customers to the hotel environment. Other parts that the hotel will consider during the interior environment design include plants or flowers, furniture, pictures or painting, and wall decorations. Pecotic et al. (2014) stated that aesthetics have the components of flooring or carpeting, furniture, paintings, or

picture and wall décor. Aesthetics is under the design factors with architecture color style, materials, décor, scale shape, texture, and pattern for the physical environment elements. The layout is under the part of functional (Chow et al. 2013).

These components or elements in facility aesthetics can be seen by the customers and evaluate the aesthetic ambiance (Sekar and Sudha 2021). Besides that, facility aesthetics create a good-looking atmosphere for a hotel; indirectly, the aesthetics provided can change the customer's opinion either become a repeat customer or attract the new customer to a hotel (Pecotic et al. 2014). The facility aesthetics make the internal environment more interesting and attractive. Indirectly create a positive emotion for the guests (Tuzunkan and Albayrak 2017). The attitudes, behavior, emotions, perceptions, and customer satisfaction will affect a hotel through the facility aesthetics (Ariffin and Aziz 2012).

The furniture, color, paintings or pictures, wall décor, and plants or flowers can influence customers' emotions and affect their pleasurable feeling (Chang 2012). For example, the plants or flowers placed can create a pleasant appearance for the hotel and decrease staff hotel and customers (Chang 2012). The architectural design is used at the hotel to catch the attraction of the customer. Other factors, such as paintings, ceiling, wall decoration, furniture, and flowers, can also attract customers Chang (2012), Jalil et al. (2016) mentioned that the interior design and colors used for the interior environment could affect the customer's emotions and behavioral intention. A positive customer's emotion can increase the customer's intention to stay at the hotel. Khanau (2015) highlighted that color is one of the most critical elements for interior perception. The colors chosen for painting the interior walls, floors, and finishing materials must have hygienic requirements.

Color not just only the visual performance but also influence psychology and aesthetics. The choice of colors plays a vital role in influencing consumers' sensory and emotional feelings (Amato 2016). Moreover, a color that is used allows creating a strong visual element of the physical environment. The combinations of colors can influence the perceptions and attitudes of customers (Ariffin and Aziz 2012), and different colors used will bring different moods and emotions to the customer (Chang 2012). For example, using bright colors is more attractive than dull colors (Budur and Poturak 2021). Bright colors can create pleasant feelings for the customer. Besides that, the combinations of colors allow to help the customer to find the way in a building (Khanau 2015). Cool colors can make the customer feel relaxing than using warm colors, which may sometimes create stress Amato (2016), Chang (2012) stated the example for each color has is association:

- a) Red is associated with danger, excitement, high energy, passion, and sensuality.
- b) Orange is associated with cheerful, refreshing, and stimulating.
- c) Yellow tends to evoke compassion, happiness, and sympathy.
- d) Green is associated with natural, refreshing, rejuvenating, and soothing.
- e) Blue tends to evoke peace, calm, and trust.
- f) Purple tends to evoke power, richness, royalty, and spirituality.
- g) Black is associated with grief, mourning, and sophistication.
- h) White is associated with cleanliness, purity, and safety.
- i) Brown is associated with organic and stable.

More effort in the design and providing a more comfortable environment for customers is the main factor that motivates the hotel industry to continue operating. The surroundings of the environment are more important than the food as well. Furthermore, the atmosphere of the hotel is often the single most positive feature considered by customers. The atmosphere can create expectations and a good experience for customers. The customers will observe the hotel's environment and feel enjoy and comfortable (Chow et al. 2013; Ebrahim Seyadi and Elali 2021; Hasan and Hassan 2021; Ahmed and Elali 2021).

2.2 *Guest Satisfaction*

Service quality is a business that provided high service quality to the guest. Consumers at all the notion of inferiority or superiority of his organization and its services. The most common definition of service quality is the conflict between consumer's expectations and perceptions of the service received. According to Budur and Poturak (2021), satisfaction can be seen as meeting guest expectations and world-class satisfaction to delight guests by delivering a good service or product that goes far beyond customer expectations. Budur and Poturak (2021), mentioned that genuine and ongoing satisfaction was one of the greatest assets a firm can achieve. Kandampully and Suhartanto (2000), described guest loyalty in their research that "guests who buy again from one service provider whenever possible and who continued to recommend or maintained a positive attitude. Based on study by Sekar and Sudha (2021), found that, guest loyalty had two orders of magnitude: the first was the behavior, and the rest was attitude.

Hill (1998) reveals that customer satisfaction would happen when the customer's perception of his expectations was met or exceeded. Hill (1998) discussed guest satisfaction as a customer illusion about their experience. Oliver (1980), defined from the psychological perspective about emotions and expectations of customers based on his previous experience. The number of guests or the percentage of total guests reported experience with a firm, products, or services (ratings) overcome determined satisfaction goals is guest satisfaction (Budur and Poturak 2021). Guest Satisfaction was also the feeling of pleasure or disappointment because of the result when comparing the product's performance with his expectations (Budur and Poturak 2021). Guest satisfaction was a business philosophy that tended to create value for guests to demonstrate the ability and the responsibility to meet their needs, anticipating and managing their expectations. The quality of service and guest satisfaction were critical factors for any business's success (Parasuraman et al. 1988). Hence, firms exist because they have customers to serve (Hill 1998). According to Budur and Poturak (2021), the key to obtaining a sustainable advantage was to deliver high-quality services that result in satisfied customers. According to Budur and Poturak (2021), several empirical studies showed a virtuous and robust connection between guest satisfaction and the most crucial variable, customer loyalty.

3 Methodology

3.1 Sampling and Instrument

A quantitative research approach with a survey questionnaire through a causal type of investigation, a cross-sectional study, is applied for information gathering and data collection. The target population or unit of analysis and the sample of this study is selected guests who visit and stay at the three-star hotel in Kelantan. This sample is believed to be knowledgeable and well experienced, thus providing relevant information on a particular subject. In this study, using a questionnaire survey to gather data is considered the primary data because the information or data collected through the questionnaire is first-hand by the researcher. The set of the questionnaire has been distributed to the consumer who visited or experienced the three-star hotel in Kota Bharu, Kelantan. According to Malaysia (2017), the total number of hotel guests in Kelantan is 1,179,327. In this research, the sampling frame is calculated by the population, which involves the hotel guests in Kelantan; therefore, the hotel guests in Kelantan were considered the population of the sampling size.

3.2 Research Instrument

This study investigates the relationship between facility aesthetics (independent variable) and guest satisfaction (dependent variable). The questionnaire survey instrument is consisting three (3) main sections; in conjunction with Section A solicit the information about the respondent's demographic profile. Section A explains the respondent's demographic information, such as age, gender, marital status, educational qualifications, and monthly income. Section A is necessary for the researchers to know about the background of the respondents. The studies are wide-ranging gain outcomes as respondents had answered the questionnaire with varied social backgrounds. Section B is constructed to measure the guest view on an element of servicescape (facility aesthetics). Finally, section C centrally examines guest satisfaction. Respondents are required to translate their perspective on a seven-type Likert scale ranging from 1 with "strongly disagree" to 7 "strongly agree". Most items were adapted from the previous related studies, with minor modifications to the wording to address the specific needs or suit the study's objectives. It is crucial to conduct a pilot study to verify and confirm the reliability and validity of the items used before moving to a final version.

4 Findings and Discussion

The Statistical Package of Social Science (SPSS) version 23.0 is used to analyze the data gained from the 384 sets of a questionnaire for this study. The four methods consist of descriptive analysis (frequency analysis and mean score), reliability analysis, Pearson correlation analysis, and multiple linear regression analysis are used to analyze the data collected.

4.1 Respondents Profile

This section explains the respondent's demographic data, including gender, age, race, occupation, monthly income, number of times visit per year, and purpose of travel. There are 51.8%, or 199, male respondents, and 48.2% or 185 are female respondents. Most of the respondents are from the age range between 26 – 35 years old, with the highest percentage, 35.4%. The result shows that most respondents are aged between 26 – 35 years old are worked and interested in travel. The result shows that most of the respondents are Malay, with the highest percentage, 38.5%. Based on the collected result from the total number of 384 respondents, 107 respondents are students, 87 respondents are self-employed, 65 respondents are government servants, and 78 respondents are private sector.

In contrast, the last 47 respondents are unemployed. Based on the collected result from the total number of 384 respondents, the majority of the respondents, which consists of 222 respondents with the highest percentage of 57.8%, had visited the hotel at least 1 to 2 times per year, 110 respondents or 28.6% had visited the hotel for 3 to 4 times per year, and 22 respondents or 5.7% had visited the hotel for 5 to 6 times per year. While, the last 30 respondents, or 7.8%, regularly visit the hotel in Kota Bharu, Kelantan, which is more than six times per year. Based on the collected result from the total number of 384 respondents, 174 respondents or 45.3%, had visited the hotel in Kota Bharu, Kelantan because of leisure purposes, followed by 80 respondents, representing 20.8% with the business purpose and 54 respondents or 14.1% with the convention purpose. While, the last 76 respondents, or 19.8%, had visited the hotel in Kota Bharu, Kelantan due to the purpose of visit relative. The result shows that most respondents visit the hotel in Kota Bharu, Kelantan, because of the leisure purpose with the highest percentage 45.3%.

4.2 Pearson Correlation Coefficient

Table 1 shows that the relationship between facility aesthetics and guest satisfaction is significant due to the p-value of 0.000, which is less than the alpha value of 0.05 ($p < 0.05$). Besides that, the result showed a positive relationship between

facility aesthetics and customer satisfaction, with the value of correlation coefficient 0.768 indicates as high. This can be seen through 76.8% dependent variable (guest satisfaction) influenced by independent variables (facility aesthetics).

4.3 Multiple Linear Regression Analysis

Table 2 shows the R-value is the correlation coefficient between the dependent and independent variables. It is demonstrated that R-value is 0.868, which means a positive and high correlation between dependent variables (guest satisfaction) and independent variables (facility aesthetics). Thus, R² refers to the extent of independent variables that can explain the variations in the dependent variable. The result showed the coefficient of determination. The R² value is 0.753, which means that the facility aesthetics influenced 75.3% of variation in dependent variables (guest satisfaction).

As shown in the ANOVA, Table 4.25, the F value is 288.336 and is significant where the p-value = 0.000 is less than alpha value 0.05 ($p < 0.05$). As a result, the overall regression model with one predictors of facility aesthetics has worked well in explaining the variation in guest satisfaction. (see Table 3).

This study has shown the p-value for facility aesthetics variables. The independent variables, namely facility aesthetics, are obtained with a p-value of 0.000. Therefore, facility aesthetics are significant to the dependent variable (guest satisfaction) due to the p-value is more significant than the alpha value ($p < 0.05$). The following linear equation is formed to explain the relationship between facility aesthetics and guest satisfaction in this study. Based on the coefficient beta and the equation formed, the regression coefficient of facility aesthetics is 0.196. The level of customer satisfaction will increase by 0.196 units when facility aesthetics increased one unit while others remain (see Table 4). Based on the study Ryu and Jang (2010), their finding shows that there is a significant relationship between facilities aesthetic and customer satisfaction. A unique and innovative atmosphere should create a positive perception among customers of the facilities aesthetic. This finding also supported Hanaysha (2016)

Table 1 Pearson correlation coefficient

	N	Facility aesthetics	Guest satisfaction
<i>Facility aesthetics</i>	384	1	.768**

** Correlation is significant at the 0.05 level (1-tailed)

Table 2 Model summary^b

Model	R	R ²	Adjusted R ²	Std. error of the estimate
1	.868 ^a	.753	.750	.34921

a. Predictors: (Constant), Facility Aesthetics, Layout, Ambience Condition, Lighting

b. Dependent Variable: Customer Satisfaction

Table 3 Analysis of variance (ANOVA)^a

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	140.648	4	35.162	288.336	.000 ^b
	Residual	46.218	379	.122		
	Total	186.866	383			

a. Dependent Variable: Guest Satisfaction
 b. Predictors: (Constant), Facility Aesthetics

Table 4 Coefficients

		Unstandardized coefficient		Standardized coefficients	t	Sig.
		B	Standard error	Beta		
1	(Constant)	.029	.113		.259	.796
	Facility aesthetics	.196	.049	.182	4.031	.000

a. Dependent Variable: Guest Satisfaction

study, the finding shows a significant positive impact between facilities aesthetics and customer satisfaction. Good facilities aesthetic in a hotel can help them become the top choice of the brand among customers. According to Githiri (2016), the finding shows a significant relationship between facilities’ aesthetics and customer satisfaction. Satisfaction on facility aesthetic in a hotel can make the customer have return intention towards the hotel and become a loyal customer.

5 Conclusion

Based on Pearson Correlation Analysis, facility aesthetic has shown a positive correlation coefficient with customer satisfaction ($R = 0.745$). In the rules of Thumb about Cronbach’s Alpha Coefficient Size, $R = 0.745$ will be under the range of 0.71 to 0.90, and the relationship can be justified as high. Besides that, the result showed that facility aesthetics is significant towards customer satisfaction. This is due to p-value as 0.000 which less than alpha value 0.05, ($p < 0.05$). These findings can be supported by Tuzunkan and Albayrak (2017); these researchers’ findings have shown a significant relationship between facility aesthetics and guest satisfaction.

Facility aesthetics will be critical to the customer, and these elements play an important role in altering the hotel’s aesthetics to meet the customer profile. Attractiveness and appealing wall decoration and colors, clean furniture, nice paintings or pictures, and furniture quality are also crucial to the customer stay and visit the hotel frequently. Besides that, under Chang (2012) study, these researchers’ findings also show a significant relationship between facility aesthetics and customer satisfaction.

A hotel that can provide a high level of facility aesthetics indirectly may lead to increased customer satisfaction. The higher quality and attractiveness of a hotel's interior design or décor, such as furniture, paintings or pictures on the wall, plants or flowers, and others, also increase the pleasure level of customers.

Based on a study by Ryu and Jang (2010), their finding shows a significant relationship between facilities' aesthetics and guest satisfaction. A unique and innovative atmosphere should create a positive perception among customers of the facilities aesthetic. This finding is also supported by Hanaysha (2016) study, and the result shows that there is a significant positive impact between facilities aesthetic and customer satisfaction. Good facilities aesthetic in a hotel can help them become the top choice of a brand among customers. Githiri (2016) the study, the finding shows a significant relationship between facilities aesthetics and customer satisfaction. Satisfaction on facility aesthetic in a hotel can make the customer have return intention towards the hotel and become a loyal customer.

The limitation of this study is a generalization in the servicescape model. This study only focuses on one aspect of the physical environment, which is facility aesthetics, that can influence customer satisfaction. Based on the servicescape model, few other elements can contribute to customer satisfaction, namely, layout, ambiance, conditions, and lighting. Amato (2016) servicescape model, the physical environmental dimensions are consist of ambiance conditions, space or function, and signs, symbols, and artifacts. There are limited dimensions and only a few elements that can be related to customer satisfaction. Thus, this has become one of the limitations of this study. Future researchers should conduct an in-depth analysis using all the elements in the servicescape model to enhance the generalizability. Thus, facility aesthetics has been proved to be an effect that can increase customer satisfaction towards the hotel in Kota Bharu, Kelantan. The objective to examine the relationship between facility aesthetics on customer satisfaction has been achieved.

In conclusion, the outcome of the research finding indicated that customer satisfaction is significantly influenced by facility aesthetics, one of the elements in servicescape. Thus, this study provided useful information for the future researcher or hotel industry player to investigate details regarding the element of a servicescape that affects guest satisfaction.

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