Chapter 7
Technology Application in the Tourism and Hospitality Industry of the Middle East Asia

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Abstract The use of technology has arguably benefited the tourism and hospitality industry of the Middle East. Tourists, on the other side, are also privileged for having easier access to scheduling their trips and finding all of the details they need to schedule the perfect trip with the ubiquitous help from the internet. They can also instantly find the necessary information about any chosen destination by browsing the internet. Theoretically, general technology-enhanced tourism and hospitality are relatively well investigated by researchers, meaning that; investigating the effects of technology-based tourism in the Middle East in the challenging pandemic time can be useful. Thus, this chapter is focused on discussing the advancements of the technology-based tourism and hospitality industry in the Middle East, highlighting the COVID-19 and the post-COVID-19 pandemic period. Current scholarly literature on technology-based tourism in the Middle East is brought into the discussion to generate insightful findings for the tourism policy-makers and relevant stakeholders in the Middle East. Results outline the opportunities and challenges of technology-based tourism in the Middle East with theoretical analysis. Although the

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chapter has limited discussion on a few Middle Eastern countries, it discovers valuable comprehension for the travelers and tourism policy-makers.

Keywords Technology · Tourism · Hospitality · The Middle East · COVID-19

Introduction

Application of technology in the Middle East of Asian tourism and hospitality industry reached momentum when most tourists in this region started to familiarize with the latest advancements. In Middle Eastern countries, mobile devices are used in almost every aspect of planning a trip. Starting from booking trips online, buying tickets, looking up hotels, etc. This offers huge opportunities for the tourism and hospitality firms, airlines, and tour planners who utilize the devices to connect with their customers and plan their business ideas according to customers' feedback. As tourists are more tech-savvy, a noticeable shift in traveling patterns using the key technologies rises to attain a competitive advantage (Chebib, 2014).

However, amidst the global pandemic in the most recent times, all of the Middle Eastern nations and their commercial sectors faced difficulties. The tourism and hospitality was no different in sustaining regular activities. Before COVID-19, tourism had been an important sector for the world economy, contributing up to 10% of Global Gross domestic product (GDP) and over 300 million jobs approximately (Behsudi, 2020). Tourist countries of the Middle East, for instance, Jordan, Dubai, UAE, Oman, and Qatar, to name a few, have experienced a negative impact of the crisis than other countries. Fear of job loss, industry shock, and shrunk GDP are among the few adversities of these countries. Not only the public tours but also the significant events of the Muslims like the Hajj are affected. The Hajj takes place in Saudi Arabia, mainly in Medina and Mecca. The government reported that it could lead to a loss of US$70 M of tourism revenue with the foreseeable travel restrictions set globally (Starr, 2020). Border restrictions have further caused tourism companies to shut down or minimize their operations. As a result, in the United Arab Emirates (UAE), the Meetings, Incentives, Conference/Conventions, and Exhibitions/Events (MICE) industry faced a sharp decline in demand, leading to noticeable losses. It is alarming to see that the industry could not function properly even though it is one of the most impactful sectors of the country (Aburuman, 2020). This study thus, explains the application of technology (i.e., Artificial Intelligence, Big Data, Machine Learning, Social Networking Sites, Smart technology, etc.) in the Middle East Asia with a particular focus on the effects of COVID-19.

The Middle East and North Africa (MENA) Region: A Glimpse of Tourist Cities

The Middle East and North African (MENA) region welcomed 87 million international tourist arrivals in 2018, equivalent to 6% of the world's total arrivals. International tourist arrivals increased to 10% in 2018 in these destinations in 2017, above the global average. The region earned US$77 billion as international tourism receipts in 2017 that was 6% of the world's passes (World Tourism Organization, 2019). There are many popular attractions in the MENA region as below (Fig. 7.1).

Dubai (UAE)

Dubai is one of the most attractive and popular tourist destinations in the world, known mainly as a megacity. It is the home to the tallest tower in the world, the Burj Khalifa. This city is renowned for its expensive architecture and magnificent skylines. Dubai has plenty of tourist scopes for adventure activities like Desert Safaris through golden Arabian Dunes, skydiving over the beautiful Palm Islands, and wreck diving.
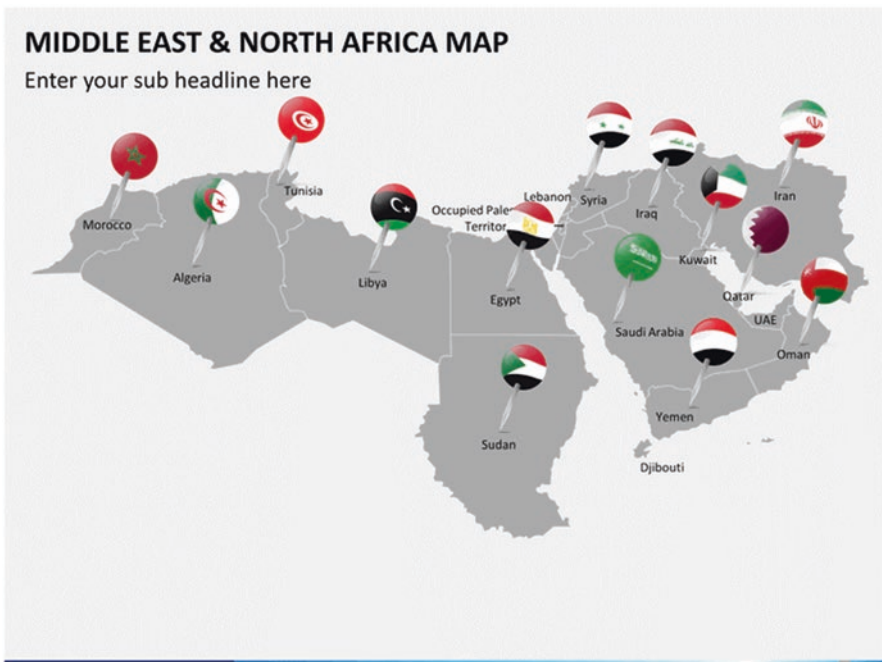

Fig. 7.1 The Middle East and North Africa (MENA) map. (Source: SketchBubble, 2021)

Abu Dhabi (UAE)

Abu Dhabi is one of the richest and popular travel destinations in the Middle East. It has a combination of rich culture and heritage. This city is full of luxury hotels, fine restaurants, and beautiful attractions such as Sheikh Zayed Mosque, Khalifa Park, the souks, etc.

Muscat (Oman)

Muscat, the capital of Oman, is a breath of full fresh sea air compared to its neighbors like Dubai and Abu Dhabi. This city is well known for its market area and its seafood. This place is very remarkable for having a great taste of the freshest seafood and experiencing endless deserts (Isalska, 2021).

Doha (Qatar)

Doha, the capital of Qatar, is one of the fastest developing cities in terms of tourism and hospitality. In Qatar, tourism is divided into several categories such as cultural, historical, religious, and maritime. The Museum of Islamic Arts is undoubtedly the best place to visit in Doha. It has a fantastic collection of ceramics, glassware, jewelry, and textiles. It is a must for the visitors to see the fabulous beach and swim in the Persian Gulf.

Mada'in Saleh (Saudi Arabia)

It is in the north of Saudi Arabia. The extraordinary rock-tombs of Mada'in Saleh are the Middle East's most remarkable and least known sights (Thomas, 2019).

Amadiya (Iraq)

It is located in the north of Kurdistan. From the Turkish border, it is only 10 km away. Amadiya is very photogenic, and it is one of the most beautiful villages in the Middle East. This village has the footprint of many civilizations and religions (Torres, 2019).

Dahab (Egypt)

Dahab is known as the "Diver's Paradise." This place offers tourists beaches, the sea, and beautiful architectural structures. There are some popular attractions here, such as Blue Hole, Blue Lagoon, King Safari Dahab St. Catherine, etc. (Bisht, 2020).

Beirut (Lebanon)

In the Middle Eastern region, Beirut is known as one of the best travel destinations. It used to name as the "Paris of the Middle East." Due to its lively nightlife, it is very remarkably familiar to the tourists. Beirut attracts people by offering its vast number of clubs and bars (Kelly, 2017).

Beit Al Quran (Bahrain)

With having a rich collection of the "Quran," the holy book for the Muslims, Beit Al Quran is one of the most valuable places to visit for tourists. This place has the "Quran" from almost every century. For tourists, this place offers books and works of the most famous Islamic writers worldwide. This place is also renowned for Islamic calligraphy, manuscripts, and wood carving (Agarwal, 2021).

The Role of the Internet in the Tourism and Hospitality Industry in the Middle East

Modern days tourism is almost dysfunctional without the use of the Internet. Whether it is about looking at the top tourist nations, checking out reviews of hotels, or the best tourist spots, the Internet is the human's initial guide to discover tourism and hospitality. Almost all tourism and hospitality industry areas have a website classified into four broad groups: corporation identity websites, chains, discount and attachment websites, and websites of individual sites and portals (Koelzer & Cox, 2005). The Internet can be recognized for its capacities to help growing competitiveness in the global tourism market demands. Travel agencies need Internet supports to offer exceptional efforts and investments in promotion, resources, knowledge, and quality to achieve satisfactory growth (Batinić, 2013). Thus, travel agencies and hospitality enterprises can incorporate the latest technologies to make the best use to stay ahead of the global competition. It is believed that the tourism markets should be researched.

The Middle East is quite technologically advanced due to its world-class security, military, defense, cyber-security measures, etc. Moreover, the Middle East also has a high demand for broadband and electronic gadgets. For instance, in the Middle Eastern nations, strata devices and public experiences helped countries like Oman and Jeddah attain the traditional, cultural, and resource-filled aspects of tourism. It was reported that "The UAE's hospitality market is set to rise to $7.6 billion by 2016, driven by a rise in visitors to both Dubai and Abu Dhabi. It is one of the most active markets in UAE in general and Dubai, particularly which welcomes more than 11 million visitors per year and is expected to grow to 20 million visitors for EXPO2021" (Almohammad, 2017). The UAE is the only country globally to have a ministry of artificial intelligence (StarupScene, 2021). Yuval Noah Harari once said that Israel is the leader in the field of surveillance. In 2019, the Badir Program for Technology Incubators and Accelerators represented King Abdul Aziz City for Science and Technology in a graduation ceremony they organized to celebrate 20 technological innovations. Not to mention, the GCC was among the first region on the entire planet to introduce the latest 5G networks. Thus, as you can see, this region has the technological capacity to provide solutions facilitating tourism. As mobile technology is prevalent globally, it would be wise to spread recommendations in trusted services like TripAdvisor to promote relevant vacation destinations in the Middle East to welcome higher tourists in the region than before the pandemic. It is discovered that 45% of its user uses smartphones to organize everything regarding their vacation (TripAdvisor, 2016). Services like Rehlat and Almosafer have made it easier for tourists overseas to book flights and hotels to MENA destinations.

Using public transport abroad can be a hassle, especially since people do not speak English at all in most the places in the MENA region. Fortunately, many of these regions have implemented easy solutions for foreigners to book private transport, like Dubai's alternative to Uber, Careem. A similar solution like renting a private car for greater freedom is also possible through apps like RTA Dubai Drive. The Middle East has cuisine full of comfort foods and goodies that people may crave after their first experience, and it varies from region to region. But locating the hidden gems and must-visit restaurants can be pretty challenging, having mentioned the language barrier. Multiple apps like Talabat, Zomato, and Uber Eats help solve the problem quickly and provide the convenience of having food delivered in your footsteps.

Even though existing technologies have propelled the MENA region to astonishing heights, it still has a long road to go. They need to bounce back from the losses resulting from the pandemic and make up for revenues that could have been earned through those years by gaining a much higher number of tourists. More increased convenience has been achieved by introducing a contactless payments system. A study has shown that 70% of respondents in the MENA region are already using contactless payments. This comforts tourists in case they're unable to use their credits or debit cards. Through Big Data, the government can gain insights into tourist

behavior, their spending, country of origin, their whereabouts, etc. Based on this data government can gain new insights regarding the popularity of certain parts of the cities and improvements o services that can be initiated by feedback from tourists.

Using Artificial Intelligence (AI) in the Tourism and Hospitality Industry of the Middle East

The implementation of AI in the tourism and hospitality industry has made travel arrangements much more straightforward and hassle-free. AI in the tourism industry ranges from in-person customer service to chatbox with other digital trends that have created various opportunities in the Middle Eastern countries. AI has provided the tourism industry with multiple options that lead to success and make it more attractive for their customers. AI has reconceived the tourism and hospitality industry (Ruel & Njoku, 2020) by enlarging production level, eventually brushing up the company's efficiency. The usage of AI aids in intensified decision-making with proof and creates an opportunity for talent management within the tourism company (Ruel & Njoku, 2020).

AI has made tourism more attainable to everyone as it expedites the guest's interaction with the amalgamation of their environment, which enlarges the standard of the escapade at the destination (Lopez de Avila, 2015). AI upgrades the traditional experience of tourism and hospitality in the Middle East. Using AI in tourism, the Middle East has made data collection less complicated by discouraging the display of an extensive amount of data. To intelligently store, process, integrate, and scrutinize data and aids to tourism and hospitality for their innovation towards operations and services they provide to the tourists by using artificial intelligence and big data technique (Tsaih & Hsu, 2018). Artificial intelligence has generated opportunities in the tourism and hospitality industry by enabling different intelligent systems and chatbots. It is best to be used in travel agencies or air transport companies (Zsarnoczky, 2017). They help establish better communication with the visitors and aids to reach out to their queries. Like other countries, the Middle East has also been facilitated, and opportunities have been open through AI. In Dubai, the handling of baggage, management of air traffic, and the replacement of immigration officers have been done through trials of artificial intelligence. Etihad, which belongs to Abu Dhabi, has partnered up with Microsoft to launch an in-house AI Academy, which would help track business ideas for the airline's workforce and a fast rate. Saudi Arabia is powered by artificial intelligence by using robotic cars, which aids cargo loading to become more methodological and well-planned. The robotic vehicles also steadily escort passengers around the airport (Arabian Business, 2020).

Use of Big Data and Machine Learning in the Middle East for Tourism and Hospitality

In recent years, the word "big data" has gained traction in the media, and it is now used in a rising range of sectors. Both kinds of data are overgrowing, which has become a need for all walks of life to expand and decline fast, ensuring that the rise of big data has opened doors for particular industries, such as tourism (Zhang & Wang, 2021).

Unlike tourism, many sectors have been alteration from data shortage to data abundance. Technological advancements have made it possible to handle vast volumes of data. Big data represents efforts to comprehensively quantify exchange, leading to computers' universal availability with increased computing power (Weaver, 2021). Tourism is highly valued in many countries for several reasons, including jobs, income, and economic benefits. Tourism is essential in Japan, where the government implements a national development plan (Tsuda, 2021).

Another example for forecasting the Chinese cruise tourism is critical to make investment decisions and planning. The researchers improved forecasting performance by combining the gravitational search algorithm (LSSVR-GSA) with the support vector regression model. To forecast the cruise tourism market, they used big data such as search query data (SQD) of Baidu and economic indices (Xie et al., 2021).

Hotels now have advanced tools to analyze and enhance their success thanks to machine learning. The need for knowledge regarding a particular travel destination has led to today's tourism, dependent on technical availability. For tourism research, big data has a significant contribution to its transformative potentiality. Tourism researchers are fascinated by the possibility of turning further facets of human behavior and commerce into data points (Gunter & Önder, 2016).

In the tourism industry, big data and ML relates to information collected by travelers. It aids tourism businesses in seeing more clearly by assessing customer appetite for various services and products. Big data can help people in the travel industry learn in numerous areas, allowing them to make more evidence-based choices. It will enable you to better forecast future demand, perfect your promotional plan, target advertising more accurately, and improve customer experience.

Applications (Apps)

Some popular applications have been created that influences the life of Middle Eastern people. The flexibility of using those applications made the lives of audience easy. Despite having a younger population, Middle Eastern countries are lagging in terms of technological advancements. However, many startups in the Middle East are overcoming the cultural barriers to tap into technological advancements (Singh, 2018). Some of those applications are Careem, Fordeal, and Anghami.

Careem

Careem is a vehicle hiring company and a subsidiary of the American company Uber. It is based in Dubai and has operations in over 100 cities in 15 countries (Arabian Business, 2018). It is one of the famous ride-sharing services in the world. Careem and its user-friendly features helped them to gain more users around the world. It is not only popular in the Middle East, but also it is providing its services to Africa, Asia. In just about 4 years, Careem has become an essential tool for those in need of transportation in 44 cities across 10 countries (D'Cunha, 2016). In 2019, Uber confirmed rumors that its building out its presence in the Middle East Asia and Africa by acquiring Dubai-based ride-hailing service Careem (Sawers, 2019).

Fordeal

Fordeal is a Chinese online shopping platform with large userbases in Saudi Arabia, UAE, Jordan, and Kuwait (WAYA Staff, 2020). This platform is one of the most popular platforms in the Middle East. In addition to people's expectations, this platform brings simplicity to online shopping.

Anghami

Anghami (Arabic: أنغامي) is the first legal music streaming platform in the MENA region, giving more than 70 million users access to over 57 million Arabic and International songs to stream and download and over around 100,000 Arabic and International podcasts. Anghami is a freemium service that allows users to play millions of international and Arabic songs for free. As for paid users who subscribe to Anghami Plus, they are granted access to various features that allow them to download songs, play music offline, view lyrics, rewind, scrub, and repeat all the music they want. Anghami Plus perks also include playing music in high audio quality, using the platform on Playstation, Sonos, Carplay, Android Auto, Apple TV, Smart TV, and Android TV (Anghami, 2021).

Thus, it can be forecasted that although the travel industry's performance was disrupted due to the global pandemic, by acquiring the policies mentioned and use of technology to analyze the market conditions, traveling patterns could be brought back to normal very soon.

The Role of Social Networking Sites (SNSs) in the Tourism and Hospitality Industry in the Middle East

In the Middle East, tourism and hospitality includes diverse events and tourist attractions across a region covering more than 13 million square kilometers. The tourism industry has been affected by the COVID-19 pandemic in this location. To

revive the global tourism industry post-COVID-19, a study of 35 research papers analyzed the pandemic's effect (Sharma et al., 2021).

SNSs have dramatically influenced the tourism industry. Consumers use social media networks to plan journeys, make informed travel choices, and share their personal experiences with a particular airline, hotel, and restaurant. SNSs are becoming an inseparable part of our daily activities, both for commercial and personal reasons. SNSs are now described in a variety of ways (Kacetl & Klimova, 2020).

SNSs are web-based systems that enable a user to make a profile on an online platform that helps connect with the other users shared by the mutual connections and make a list of relationships (Boyd & Ellison, 2007). They also highlight their social component, as this SNSs enable users to express and make their social networks accessible (Poulova & Klimova, 2015). In the Middle East the advent of the internet in developing various channels of social media in recent decades. It has changed the travel business and industry worldwide, and the way people travel (Iglesias-Sánchez et al., 2020).

In recent decades, the tourism industry, especially the travel and hospitality market, has focused on information and communications technology (ICT). The development of various ways and modes of social channels has been accelerated by increased Internet penetration and reliance. SNSs also revolutionize the travel industry, allowing agencies and businesses to collaborate and sell their offerings to specific demographics.

The Contemporary Scenario and Prospects of Smart Tourism in the Middle East

Smart tourism increases the reliance on tourism destinations with smart ICT facilities (Gretzel et al., 2015). As time passes and global citizens get more exposed to virtual reality and IT advancements, technology is recognized more as an infrastructure than singular pieces of systems. People, companies, and nations can make meaningful and impactful decisions.

The role of smart cities is to connect the dots within a community to create a more habitable, worthwhile, feasible, and sustainable place to live in (Wayne, 2016). However, the role of smart cities has extended to the development in the industry of tourism and hospitality by generating smart tourism, which in return gives numerous benefits to the travel companies. The use of artificial intelligence in tourism creates feasible portability, social incorporation, and territorial marketing. It implicates that smart cities are developing the tourism and hospitality industry so that its tourism and its product and services will be accessible to even people who are either temporarily or permanently paralyzed (Dias et al., 2021). It brings hope amongst people who cannot access privileges including traveling and smart cities make these dreams come true. Smart cities may bring change in which people encounter their environment. Their capacity to provide precise services is crucial (Dias et al., 2021)

that transforms tourism into a more accessible, understandable, and entertaining one. The trend of smart tourism is gradually becoming highly remarkable to urban modernization because of the combination of ICT in tourism. Under these situations, the incorporation of tourism and the smart city has transformed into an evaluative, participatory, and interactive journey of the strategies set by the smart cities (Gautam et al., 2016). The execution of certain smart services for visitors at the airport has helped them finalize and accomplish their airport formalities flawlessly (Abdelmoaty & Soliman, 2020). It demonstrates the feasibility and how tourism and hospitality have become more delightful, hassle-free, and less time-consuming for travelers, travel agencies, and airports. It has been found that the evolution of smart cities has been successfully contributing to the tourism and hospitality industry by engaging more people from the neighboring countryside along with a total number of tourists (Eichelberger et al., 2020).

Smart tourism uses technology to generate ideas and make efficient uses of tourism resources that enhance traveler's experiences and protect the valuation of land that cashes the economy favorably. Among the countries in the Middle East, Oman is one of the naturally diverse ones rich in resources to make the land exposed and promote travel scopes. The virtual reality projects were implemented, and several mobile applications were introduced such that it helps tourists discover Oman quickly, such as Muscat Geotourism Guide (Muthuraman & Al Haziazi, 2019). It has also been reported that Oman telecom and the Ministry of Tourism signed a strategic partnership during July 2018 to enable tourists a big-data-based application facility (Muthuraman & Al Haziazi, 2019).

Although there lie some challenges such as changes in customers' preferences on touring spots, extreme weather conditions can't always be predicted accurately via weather forecasting systems. With the lack of research on incorporating advanced tools and limited research on the environmental scopes while reserving the resources, the country still keeps on trying to take feedback and implement necessary changes. On the other hand, Dubai has been named as a Smart City based on the rich traveling experiences it has to offer to the world. Starting from a large-scale transformation program to facilitating digitized transportation throughout the city, Dubai has created a fashionable society based on communication, integration, and cooperation.

Introducing revolutionary applications on the tourism scenes such as Dubai GuidePal offers tourists various city highlights and trending events. Eateries users can also use the app to connect with locals, make friends, and personalize tour guides based on individual taste and preference and book tours (GuidePal, 2019). Besides this, apps such as Google places API bring out a full-on, virtually enhanced experience. The functions are described, such as a custom algorithm that can determine an itinerary for the user (Fig. 7.2).

The country's most prominent airline companies and the hospitality sectors have received enormous support from the government via fund, support schemes, and capital packages. Oman, for instance, came up with a campaign named 'Within Oman' where the citizens are encouraged to patronize the local airlines, hotels, and resorts. The campaign aims to focus on the natural assets of Oman and draw in more

YEAR	VISITORS	INCREASE/DECREASE	INCREASE/DECREASE (%)
2015	14,200,000	1,000,000	7.58
2016	14,900,000	700,000	4.93
2017	15,790,000	890,000	5.97
2018	15,920,000	130,000	0.82
2019	16,730,000	810,000	5.09
2020	5,510,000	-11,220,000	-67.07

Fig. 7.2 Unusual decrease of Dubai visitors in 2020. (Source: Dubai Online, 2021)

Daily average rates dropped from 415 AED (£81.77, €94.59, $112.98) in 2019 to 343 AED (£67.59, €78.18, $93.38) in 2020.

PROPERTY TYPE	NUMBER OF ESTABLISHMENTS 2020	ROOM SUPPLY 2020	OCCUPANCY RATE (%) 2020	NUMBER OF ESTABLISHMENTS 2019
5 Star Hotels	134	44,067	45	128
4 Star Hotels	161	34,905	53	158
1 - 3 Star Hotels	225	21,732	59	258

Fig. 7.3 Daily average room rate dropped. (Source: Dubai Online, 2021)

travelers by offering them lucrative traveling facilities. Hafidh Al-Hadhrami, the asset manager of the tourism group of Oman, stated that the tourism momentum might climax the only natural, heritage, and cultural practices in Oman (Arab News, 2020) (Fig. 7.3).

Post-COVID-19 Pandemic Tourism and Hospitality Industry in the Middle East: Scenario and Synopsis

The Middle East more or less has been a place for foreign attention, flocking an enormous number of tourists each year. This might prove to be a shock to most people unacknowledged of the region. This is well understood from the stereotypes about the region: drought-stricken, bone-dry desert flocked with camels. The Middle East is known to its populaces for lavish and luxurious living conditions. Equipped with cutting-edge technology and world-class security, it is no surprise that it generates billions of dollars in revenue from the sector. While places like UAE and Egypt have established themselves as top-ranking hotspots, many others like Saudi Arabia and Oman have shown great promise in recent years, leveling up gradually. But given the COVID-19 pandemic situation businesses, consumer markets, airports have all experienced crashing downfalls. As most countries started putting flight bans and travel restrictions, so did the Middle East. This caused the countries a significant loss in revenue, which contributed a massive percentage to its national budget. Here we discuss potential strategies directed towards the recovery of the region's tourism in a post-pandemic situation.

COVID-19 pandemic has demolished nearly every industry globally, as sharp decline became visible within 4–5 months of the global spread of the novel Coronavirus. No industry has seen the absolute nightmare than the aviation industry, with most countries declaring flight bans and travel restrictions soon after initiating lockdowns. As well as stranding many in their home countries preventing business travels, it also prevented people from spending vacations overseas. This decreased revenue earned from tourism. For some, the loss might be minimal, but for others, like the Middle East, it was a whole new story. Shocking it would be to most people in the world, holding presumed stereotypes of drought-stricken, bone-dry desert flocked with camels. The region is well-known to its foreign inhabitants for luxurious living conditions. Coupled with world-class security and cutting-edge technological developments, it is a favorite destination for hundreds of thousands of visitors each year. For some countries like UAE and Qatar, tourism is a significant growth sector to their economies, providing a massive percentage of revenue to their GDPs. In contrast, many others like Saudi Arabia and Oman were seen as potential prospects for tourist hotspots. Not to say, religious pilgrimages such as the Hajj and the Umrah to the cities of Makkah and Madinah and visitors from Jewish pilgrims to the Western Wall in Israel.

Retrospectively speaking, the Middle East has recently (for the past 10 years) been attracting foreign attention. This is not surprising, given many favorable conditions facilitating international travelers. Most prominently, affordability and low rates of crime. Counterintuitive, it might seem, as the Middle East is often believed to be transfixed with terrorism, in reality, most places have a negligible crime rate. Thus, travelers can roam free without concerns about putting their lives in danger. As already said, the Middle East is incredibly cheap, enabling you to extend your stays at hotels without running out of your budget. The fantastic cuisine of the

region is considerably underrated, including the sheer convenience provided by the introduction of online food delivery apps. Despite the language barrier of the area, tour guides are at hand's reach.

Returning to the present, we are now concerned by the catastrophes mentioned above, thinking of recovery. We would discuss portent strategies we could implement to tackle the tourism sector in a post-pandemic reality in need of recovery.

How to Implement Technology-Enhanced Tourism in the Post Pandemic Period

The COVID-19 pandemic has brought a lot of changes in our lives. Every activity is modified, and traditional methods are shifted to online or internet-based ones. People can also not follow the conventional way of conducting all the processing of visits in the tourism and hospitality industry. The tourism businesses have also transformed themselves to provide the facilities to cope with the pandemic. Thus, in the post-pandemic period, the tourism industry has implemented technology-enhanced tourism like Airbnb, which is considered one of the most remarkable and outstanding innovations in the tourism industry (Guttentag, 2019).

This is a mobile application that aids to access and book without going physically, which maintains the pandemic rules and regulations like maintaining social distance and keeping the passenger safe. This mobile application facilitates travelers by examining and inspecting a big data set containing all the online reviews and comments on the internet. It is discovered that the users try to assess their experience through the past hotel that was obtained from the references given online (Cheng & Jin, 2019). This also helps visitors evaluate and predetermine their choices through technology-enhanced tourism sites and applications. The tourism industry also facilitates its customers with mobile applications, and they also have adopted certain websites. One of them is bookings.com, a magnificent source of information by an academic researcher in the hospitality industry. It can accumulate millions of reviews of hotels in a swift, economical and suitable method (Mellinas et al., 2015). Due to the speedy evolution and enlargement in the sector of technology, the utilization of E-commerce has spread out significantly in the current years, leading to the concentration of online travel ticket booking websites (Kaushik & Srinivasa, 2017) as well as mobile applications.

Besides these, the Middle Eastern countries are collaborating with the European countries to ensure a rise in tourism. For instance, UAE and Bahrain signed an agreement with the UK under the corridor travel list, which encourages travelers to move across the borders to visit the Middle Eastern countries while maintaining a safety quarantine period and inbound travel until a mutual visa waiver. This will increase the volume of incoming tourists, and the government will see a boost in the economic recovery. The Middle Eastern countries have also decided to lift travel bans from South Africa and neighboring nations (Ley, 2020).

Conclusion

This study explores how technology is used in the Middle East, emphasizing the impact of COVID-19. Findings show that technology is an essential part of the Middle East tourism and hospitality industry. It aids companies in their day-to-day activities while also improving customer satisfaction. This MENA region has witnessed the broader popularity of AI, Big Data and Machine Learning, SSN, Smart technology, etc. As a result, hotels, airlines, restaurants, and other businesses need to keep up with the new technological developments in the travel industry. However, the disruptions caused by COVID-19 in this region require adequate attention. Some suggestions to cope up in the post-COVID-19 pandemic period are: First, the potential visitors should be informed about their safety measures. Safety is the most important issue considered by the tourists. If safety measures can be ensured, tourists might be motivated to travel in the Middle East. Secondly, the Middle Eastern countries should work together to provide adequate health insurance for travelers, significantly different health schemes for COVID-19. If the tourists are infected, they should get proper treatment and care in the post-pandemic period. Finally, the Middle Eastern countries should ensure technology-enhanced tourism with the advanced usage of robots and artificial intelligence to reduce infections.

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