



Smart Technology Applications in Tourism and Hospitality Industry of The New Administrative Capital, Egypt.

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Abstract

Smart technology has become of great importance in the tourism sector at present, especially in light of the great developments in the field of information and communication technology and the use of artificial intelligence techniques in many fields, including the tourism field. This research focuses on the concept of Smart technology, its importance in tourism, and its applications in the Tourism and Hospitality Industry. The new administrative capital in Egypt is chosen to conduct the research. The study examines two research questions: (1) What is the extent of smart technology applications in restaurants, the Capital International Airport, and the hotel? (2) What is the current use of artificial intelligence applications in restaurants, the Capital International Airport, and the hotel? The study aims to illustrate the types of smart technology applications; to identify the importance of using smart technology applications; to evaluate the current use of artificial intelligence applications; and to provide helpful recommendations based on the study findings. Surveys, the checklist form, and content analysis methods were used for gathering data. The results revealed that the hotel and the Capital International Airport don't offer new types of smart services to guests till now although they have good technology infrastructure. The study recommended the implementation of some smart services for travelers at airports such as applying smart apps that direct passengers to complete their airport formalities perfectly. Moreover, applications of smart restaurants and smart rooms in the hotels should also be implemented.

Introduction

The developments in technology from the end of the 20th Century till now have been increasing so fast in all activities of Tourism and Hospitality enterprises. Recent studies from (2015 to 2019) (Gajdošik, 2018) show that smart technology in the tourism and hospitality industry is being used to improve the holiday and accommodation experiences of tourists, and to provide innovative tourist service that

increases the satisfaction of all trips (Jasrotia & Gangotia, 2018). Furthermore, smart technology increases the competitiveness of such enterprises through gaining a competitive advantage over their competitors by automation in services and benefiting from information communication technologies (Gretzel *et al.*, 2015). This study tries to investigate the two questions that were set by the researchers to find the solutions, which are:

- 1- What is the extent of smart technology applications in restaurants, the Capital International Airport, and the hotel?
- 2- What is the current use of artificial intelligence applications in restaurants, the Capital International Airport, and the hotel?

The importance of the study

The importance of the study is stemmed from the importance of digitalization of services that is crucial to appeal to techno talent guests and to move on to a digital organization model by approaching hospitality and tourism services to customers' touch-point. This study contributes to drawing the attention of hotels, restaurants, and airport management to the importance of the applications of smart technology and artificial intelligence and its effect to attain competitive advantage, the study contributes to enhancing hospitality and airport services, moreover, this study is one of the few studies that discuss the application of smart technology in the New Administrative Capital as the latest smart city in Egypt and contributes to the literature by identifying the idea of a smart tourist destination.

Research Objectives:

- 1- illustrate the types of smart technology applications in the restaurants, the hotel, and the airport.
- 2- identify the importance of using smart technology applications in the restaurants, the hotel, and the airport.
- 3- evaluate the current use of smart technology and artificial intelligence applications in restaurants, the hotel, and the Capital International airport in the New Administrative Capital of Egypt.
- 4- provide helpful recommendations based on the study findings that contribute to attracting new customers.

Smart Technology

The smart concept has emerged as a result of information technology that integrates hardware, software & network technologies to help people make more intelligent decisions about alternatives in business processes and performance (Washburn & Sindhu, 2010). Smart technology can be defined as " a mechanical system equipped with sensors, actuators, and pre-programmed controllers which allow a structure to adapt to unpredictable external condition" (Holnicki-Szulc and others, 2008, p2). Others indicated that smart technology means information and communication technologies used to improve the management of territories and businesses including big data, cloud services, internet of things, artificial intelligence, end-user internet service system, and many other types (Gelter, 2017).

Smart Technologies in Tourism

Smart Technologies are defined as: specific products and services which add value to tourist experiences in a concrete behavior by fostering higher interaction, co-creation, and personalization (Gretzel *et al.*, 2015). This definition is derived from the concept of smart tourism, which is a phenomenon firmly grounded in technology depending on cloud computing, sensors, and Global Positioning System (GPS), wide spread use of artificial intelligence, virtual and augmented reality, with full adoption of social media and mobile technologies to push the emergence of smartness in tourism. Smart tourism is considered a fundamental part of smart cities which means “intelligently using available technology and resources to develop urban centers that are integrated, habitable and sustainable” (Washburn and Sindhu, 2010, p2). Smart Tourist Destinations: is a smart city which utilizes information technology and innovations to enable high standard service of Quality, pleasure, and excellent travel experiences for tourists (Jasrotia and Gangotia, 2018).

Importance of Smart technology In Tourism:

With the rapid advancement of information and communication technologies (ICTS), smart technologies have received predominant interest in the tourism industry (Atembe, 2015). The concept of (smart) is being applied in tourism because the cities and destinations are becoming increasingly smart (Conyette, 2015).

The recent trends in tourism and hospitality industry in the 21-century showed that new technologies like smart and digital technologies are considered the main motivators for travelers to choose the tourist destinations. A study stated that 75% of travelers plan their trips on the internet, while 13% still use travel agencies to prepare them (Vidal, 2019). In addition, 85% of travelers use their smartphones in their transfers and trips, 97% of Millennials share photos of their trips on social networks, also 1.50 million users connect to TripAdvisor to inform their decision based on opinions of other users (mocasplatform, 2020). So, smart technology can impact managing, marketing, and offering all parts of trips. Figure (1) clarifies the importance of smart technologies in tourism.

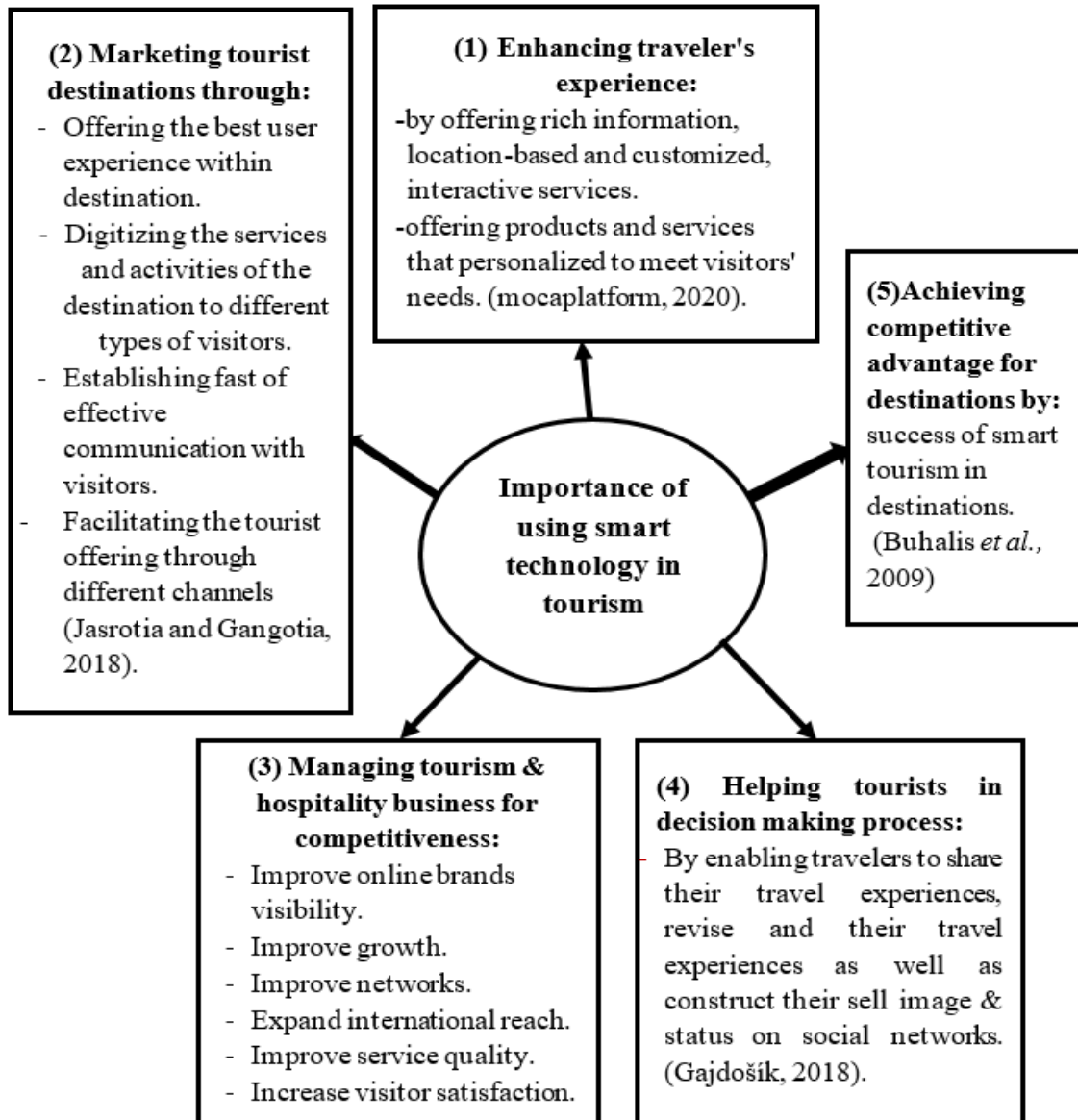


Figure.1. Importance of mart Technologies in Tourism

Application of Smart Technology in Tourism and Hospitality Industry

Table (1) clarifies the types of smart technologies, definition, and its application:

Table 1

Types of smart technologies, definition, and its application:

Type of Technology	Example	Application in tourism	Application in Hospitality
<p>(1) wearable technology: It's a technology that the user place on the body hands-free, must contain wireless connectivity (Terry,2018).</p>	Smart Watch	Travelers with android devices can integrate a travel management itinerary app, which allows them to click the notification on the watch (Atemble., 2015).	Used in (Alessandra Hotels in Houston, USA) by issuing smart watches to their employees, paired with task management software to help in the speed of service by responding to its messages & improving guest communication & efficiency instead of asking a guest to call in a request to a human operator or wait for the service (Terry, 2018).
	Wrists Band	Travelers can also receive real-time flight alerts, gate changes, and other information on their wrists, through an app called Trip case, used in Airports, and travel Agencies like Sabre (Conyette, 2015).	Tracking of guests sleeping patterns, so watch or bracelets can wake them through vibrations (used in western hotels) (Gelter, 2017). -Wrist band swipe hotel room keys (used in Disney Resorts) (Gajdošík,2018).
<p>(2) Mobile Technology</p>	Mobile phone, for web, multimedia, e-mail, apps, key less entry, Vertical concierge (Ivanov and others,2017)	using Smart app, location-based app, target marketing device 24 hours in service during the whole trip, especial in search, booking like trip advisor, Expedia (Gelter, 2017). Used in presenting the positions of tourist attractions by overlaying icons onto maps. Helping travel agents to provide products services of high quality and customer online booking & design trip) (Panagiota,	Smart App and platforms like online Expedia, Booking.com, etc. to offer hotel rooms quality products and offer views of the guest to contribute to the decision making of choosing hotels, restaurants (Popescu, 2019). Using smart phones through GPS app, free connecting to Wi-Fi, book room and all facilities of the hotel. (Ercan, 2019). Vertical concierge: it's an application that uses smart phones in communication with staff in the hotel by sending Automatic messages for asking

continued

		2017).	any service in the room to solve complaints quickly of save time (Ristova & Dimitrov, 2019). Using a mobile app to pay the bill when leaving the hotel, enable the smartphone to use the phone as a room key, make payments within the hotel with contactless payment, (Popescu, 2019). Access to the hotel guide service, including the hotel's different facilities (such as spa, pool) (Revfine, 2020).
<p>(3) Social media platforms interactive computer-mediated technologies that facilitate the creation or sharing of information, ideas, and other forms of expression via virtual communities and networks. (Ensemble, 2020).</p>	<p>Facebook Blogs Instagram YouTube Twitter (Jasrotia and Gangotia, 2018).</p>	<p>Many agencies shifted from in-person to online experience to increase online booking reverses (Gelter,2017). by using them in sharing traveler's videos, experiences, photos with a wider audience than ever before, Instagram could improve the promotion and marketing of tourist destination. (Popesku & Zlatanov, 2019)</p>	<p>Many hotels & Resorts turned to run social campaigns to ensure their guest's credit (Strarkov, 2019). Kimpton Hotels used photos of guests, tag them with the hash tag, curating positive reviews and sharing hospitality brands to increase brand quality and display and Activities to a wider range of people (Ercan, 2019).</p>
<p>(4) Internet of Things (IOT) Involve extending internet connectivity to objects devices and appliances in a tourist of hotel establishments. (Geisler,2018).</p>	<p>GPS, Bluetooth, and beacon technology (Tourism) Smart Room Accommodation (Ivanov and others ,2017)</p>	<p>Beacon technology; GPS, Bluetooth opened up new possibilities in delivering location base information, can be used by travel agents, tour guides to send messages to tourists at the precise time mean sending up-to-date information about tourist services, nearby attraction etc., to improve the tourist experience. (Wisskirchen, 2017).</p>	<p>Smart room: completely personalized to guest preferences, as in Hilton and Marriott hotels, which have rooms working on synching loyalty members and profiles with preferences room experiences, room temperature, lighting, bathroom, accessories, streaming, media preferences, bedding and more (Singer,2016). The smart room must have high-speed internet with smart utility management through voice assistants, IOT controls, thermal occupancy sensors & hotel app, IOT: applied in the hotel lobby, hotel security, operation, management, room service (Strarkov, 2019).</p>

continued

<p>(5) Artificial Intelligent (AI) refers to the performance of seemingly intelligent behaviors by computers of machines (Sun and Zhang ,2019)</p>	<p>A) Block chain It's a new method of handling data in blocks which are verifiable, trustworthy & permanent without the need for a central node of control (Rejeb and Rejeb, 2019)</p>	<p>Block chain provides a high level of trust and confidence to the tourist in online travel platforms, because any transactional data will be secured. (Jasrotia and Gangotiam, 2018). Provide the traveler with universal digital systems (IDS) which are used for voice tourist & hotel reservations, loyalty reward programs, and increase quality services, and ability to reach new potential tourist segments (Vidal, 2019). Promote travel flexibility through crypto currencies, so tourists would no longer need to convert currencies when they travel to other destinations, avoiding any potential delays (Gelter, 2017).</p>	<p>used in all aspects of hotel distributions, marketing, operations, more over all hotel transactions like: procurements: block chain used in Marriot Hotel deals to introduce traceability in its supply chain and streamline its procurement logistics (Newman., 2018). secure contracting: block chain can secure legal contracts between numerous companies, vendors and groups (Starkov, 2019). Hotels and travel agencies would be free of adjusting their service price with their guests as a response to the pressure of exchange rate variability (Geisler, 2018).</p>
<p>Artificial Intelligent (AI)</p>	<p>B) Chat bots: Means using AI-powered chatbots for assisting customers online. (Newman,2018)</p>	<p>Travel chat-bots are enhancing the travel experience as they guide tourists through their trip from booking to travel advice there are different types of travel chat-bots, customer service bots, Facebook chat-bots and AI- empowered travel bots. (Wisskirchen, 2017). Used on social media platforms of travel agents, tour operators to allow travelers to ask questions and get instantaneous responses, 24 hours a day, seven days a week. Like: Sam, intelligent travel chat-bots. (Vidal, 2019).</p>	<p>Guests could access the information at any time, from any device, they get access to the voice-activated chat bots to open the curtains, set the alarm, or order meals, without ever talking to a live person, Marriott has been using AI-powered chat bots at over 5,000 hotels to make reservation changes, check on account balances or redemption vouchers (Starkov, 2019).</p>

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<p>Artificial Intelligence</p>	<p>C) Robots: Intelligent physical devices with a degree of autonomy mobility and sensory capabilities that allow them to perform tasks without human intervention (Popseku& Zaitanov, 2019)</p>	<p>Robots can do the job of tourist guides for introducing tourist or historical places, by a prepared program that can be output in form of audio through the command of the controller provided by a large number of voice translators (Sun and Zhang, 2019). Receiving a call from a tourist in case of danger & react immediately to call for help and ensure the personal safety of tourists (Alexis, 2017). Robots convert images in tourist destinations into data, then obtain the calculation results through analysis of processing, and analyze the tourist flow at various points. (Geisler, 2018)</p>	<p>robots Perform professional services in hotels as: food preparation, room cleaning, self- check-in Kiosks, robot waiters, robotic hotel information agents, delivering orders to the guest rooms, greeting guests and speak-ing multiple languages to help guests at the front desk as doing many services in: Marriott, Hilton Chain, and Holiday Inn, (Alexis,2017). Fully automated hotels are opened like Henn-na Hotel in Japan which is the world's first hotel staffed. (Popesku&, Ziatanov, 2019). The acceptance of robots in accommodation is positive because of its role in providing improved services with high quality in hotels, but some countries will adapt more quickly than others: Chinese travelers - the most accepting. German travelers - the least accepting. UK travelers - 50% accepting of robots as a hotel receptionist accompanied by a human (Singer,2016).</p>
<p>(6) Virtual Reality (VR) It is a computer technology which utilizes images, sounds, to make users feel as they are physically present in a virtual world. (Newman, 2018).</p>	<p>VR headsets. VR glasses. Google Cardboard. VR 360. (Ivanov and others,2017)</p>	<p>Using 360 videos, Google cardboard, to provide a virtual experience of tourist sites, museums, beaches, historic places, etc, in the tourist destinations to enhance traveler expectation of what they are buying (Gelter, 2017). Travel Agents & Tour operators offering an entire booking process through a virtual reality headset, by choosing a destination, hotel, landmarks, tourist activities airline, then see all layout of the trip to feel the wonderful experience of travel and book the selected trip with all details (Jasrotia and Gangotia., 2018).</p>	<p>Applied in hotels by using 360 video technologies for showing guests the experience of virtual recreation of a hotel room and take a look at the nearby attractions of the hotel. (Revfine.2020). putting VR hotel tour on hotel websites help hotels in marketing all the facilities, services, rooms and displaying advantages of the hotel by using VR headset with access to social media like Facebook, etc (Ercan, 2019). using VR in the booking process to allow guests to look and compare hotel prices, explore hotel rooms, and book a room seamlessly. (Ristova. C, 2019).</p>

continued

<p>(7) Augmented Reality (AR) This means enhancing the real-world environment through using smart-phones, tablet devices, or headsets by overlaying information over a live picture (Vidal, 2019).</p>	<p>Gamification - Beacons. - AR Apps. (Buhalis and others,2009)</p>	<p>Developing tourist companies AR apps which allow tourists to enhance physical locations and tourist attractions (Revfine,2020) by allowing smartphones at a landmark and learn more about it (Alexis, 2017). Using beacons technology which works through Bluetooth to allow businesses marketers to send notifications when tourists enter a specific tourist place (Geisler, 2018).</p>	<p>The use of interactive elements within hotel rooms (Premier Inn in the U.K. has started using AR in with wall maps placed in its hotel rooms (Revfine,2020).by pointing a smart phone at the map guests able to see information about local places of interest, making their stay more enjoyable. (Starkov, 2019). Using AR games to improve the experience of staying children & guests in a hotel. Allowing the AR app to let children see themselves alongside characters of Disney Films (Ensemble, 2020).</p>
<p>(8) Facial Recognition It is a kind of biometric technology, used to identify people by comparing a scanned image or video with the faces contained within a database (Revfine.2020).</p>	<p>Apple Face ID Facebook Deep Selfie Pay System. (Ivanov and others,2017)</p>	<p>Used to improve personalization for tourists, by identifying, greeting them, and mentioning the tourism services provided to each of them (Geisler, 2018). Verify tourist's identity and granting them access to tourist facilities of a destination while in Airports, it might use in place of boarding pass procedures and passport checks (Wisskirchen, 2017). Used in travel agents as a key to data analysis and tourist marketing, by getting information about the demographics of tourists and how they respond to different locations and services, then deliver excellent tourist services to their clients. (Popesku and Zlatanov, 2019) Applied in tourist companies to identify loyalty scheme member & automatically apply discounts to their final payments (Geisler,2018)</p>	<p>using Apple Face ID & Facebook Deep face security & access purposes by granting guests to access their hotel room and identify trouble the same guests or guests who have previously been removed from the premises. (Popesku and Zlatanov, 2019). used in the hotel check-in process by scanning guest face, identifies them, and provides them with a key card around one minute (Applied in Marriott Hotels in China). (Revfine.2020). used to deliver a greater level of customer service, by allowing employees to quickly identify guests and deliver more personalized greetings. (Singer,2016). Companies like Master Card implemented systems by Facial recognition, where a guest can confirm payment using a camera on their smart-phone by "Selfie Pay System (Buhalis and others,2009).</p>

The research methodology

The study is based on quantitative and qualitative methods of research. In quantitative research, results provide numerical data used to evaluate the relationship between factors and variables (Parker, 2014). The quantitative research included a questionnaire and the quantitative included an observation method. Qualitative research includes a content analysis of the World Wide Web (videos, articles, and websites). This study employed the quantitative approach to find out the current use of the artificial intelligence applications in the hotel and restaurants, explore the importance of the smart technology from the point of senior hotel's managers' perspective and to identify the obstacles facing managers to implement artificial intelligence applications in the hotel. Furthermore, the quantitative approach was used to explore the advantages and disadvantages of applying smart technology. The qualitative approach was used to give an in-depth analysis of the hotel and airport in the context of smart technology applications.

Research design

The administrative capital is chosen to apply the study. It is designed to be the first smart and sustainable city in Egypt by building a digital city based on modern information and communication technology infrastructure (fiber optic cables, telecommunications equipment, and sensors, data centers). Being a digital city, it would be able to provide the instantaneous circulation of information with world-class standards to provide many electronic services to citizens, facilitate living, promote welfare and keep pace with the technological development of the cities of the fourth generation.

The new capital is utilizing the latest technologies to become an internationally recognized smart city; the new capital is built over a connected fiber infrastructure and shared mobile towers. The administration and operation of the city are run from centralized and integrated control rooms named a City Operation Center and Command and Control Center. It is planned that the new capital will include several smart services including but not limited to smart utility networks, intelligent utility counters, smart poles, building management systems (residential/administrative/commercial), transport management, parking services, waste management services and unified web and mobile applications to interact with citizens, and businesses (Administrative Capital for Urban Development, 2016).

Data collection instrument

This study adopts a mixed method using a triangulation of data collection (surveys, Conventional analysis method, and quantitative Observation method). The objective of using the three methods is to help the best understanding of the studied phenomenon, in which agreement among different sources confirm the legitimacy (Malterud, 2001). To give a full overview of the application of smart technology in the tourism and hospitality industry in the New Administrative Capital of Egypt, three methods for collecting data were used:

1) Questionnaire

In this study, two forms of questionnaires were distributed to senior hotel managers' positions of the Al Masa Royal Palace hotel - New Administrative Capital managers and restaurants. The questionnaire incorporated the organization type code to give complete and accurate results. The questionnaire items were induced from the study done by

(Ivanov et al, 2017). Because the study requires the collection of large amounts of information from various sources, the questions that were built could be divided into four parts. The first and second parts were multiple choices. For part three, the respondents were asked to rate the degree of agreement for each of the proposed items (criteria) based on a five-Likert scale ("1" means strongly disagree; "2" means disagree; "3" means neutral; "4" means agree and "5" means strongly agree). In the fourth part, respondents asked to put the appropriate score for each statement where one means the lowest score and five means the highest score.

Survey questions cover four parts. Part one is about the demographic background of the respondents as gender, age category, and the length of working time. Part two is to measure the importance of smart technology from the viewpoint of restaurants or departmental managers in the hotel. This part involves three questions as to what extent the hotel or restaurants contribute to the formation of a smart travel experience for customers? To what extent an artificial intelligence technology will make a huge difference in the hotel or restaurant sector in terms of the service provided to customers? and What are the obstacles facing hotel or restaurant management in using artificial intelligence applications?

Part three is to identify the advantages and disadvantages of using smart technology applications in the hotel or restaurants. Regarding smart technology applications, advantages include enhancing the guest experience across all stages of the guest journey, improving hotel guest response and service time and decrease problem resolution time, helping to present guests with highly relevant offers and services at the right time, helping to improve business processes, reducing hotel or restaurant operating cost, and doing routine work repeatedly. On the other hand, the disadvantages of smart technology applications include inability to invent new ways to deliver services to customers, being perceived as a threat by human employees, and the ability of chatbots and robots to provide answers to questions that include specific keywords, which they recognize to activate a particular predetermined set of answers but they lack a personal approach.

Part four is to identify the current use of artificial intelligence applications in restaurants and the hotel. Regarding restaurants, dimensions include: "AI is used in personalized service for customers", "using Intelligent Chabot's services for easy communication", "robotic process automation and revenue accounting", "all the dishes, desserts, drinks and everything that restaurant offers, in one Application", "AI is used in restaurant staff assistance", "AI is used in lodging services", "using beacon technology to promote the organization", " using service automation technologies", "depending on robots to deliver the item in restaurants", "Advertising possibilities within startup applications", "check-in with facial recognition is to allow guests to skip lines at the front desk and complete registration forms", "quests can use their mobile devices to control all the functions within the restaurant", "using restaurant software systems in operational analytics, tablet, which replaces printed catalogs", "customers can browse through the offered products watching pictures", "using restaurant software systems in marketing efforts", "the restaurant is mainly staffed by robots for example the reception is staffed by multi-lingual robots" and "Virtual Reality by imagine being 'in' a restaurant mile away even before customers decide whether or not to book."

The current use of artificial intelligence applications in the hotel include "AI is used in personalized service for customers", "using Intelligent Chatbots services for easy communication", "robotic process Automation and revenue accounting", "AI is used in sentiment and loyalty analysis", "AI is used in hotel staff assistance", "AI is used in lodging services, using beacon technology to promote the organization", "using service automation technologies", "there is a personalized destination guide based on their guests' travel dates using an AI-empowered content solution", "robot concierges", "check-in with facial recognition is to allow guests to skip lines at the front desk and complete registration forms", "using A Smartphone application as a digital Key", "using hotel software systems in operational analytics", "guests can use their mobile devices to control all the functions within the room", "room service robots bring food, drink, and extra towels to guests", "the hotel is mainly staffed by robots for example the reception is staffed by multi-lingual robots", and "virtual Reality by imagine being 'in' a hotel room miles away even before customers decide whether or not to book".

2) Quantitative Observation method

Data gathering combined direct observation with the checklist form. Data collection instruments in quantitative observation are usually more specific and detailed than those used in qualitative observation. The checklist form is established with a rating scale from one to three. "Three" in the rating scale means exceed entry-level criteria and requires minimum care for application technology in the international airport; "two" indicates to meet the entry-level of criteria and require some care for smart technology application in the airport, and finally "one" means needs improvement and require much interest for smart technology application in the airport. The checklist items were induced from the study done by Rajapaksha and Jayasuriya (2020). The checklist form contains (8) core standard criteria as smart check-in, Smart wearable, biometric services, and self-boarding, Indoor navigation, Self-baggage tagging, artificial intelligence, shopping, and real-time information. Each standard contains three factors as follows: Smart Check-in contains "there are online methods to check-in online in advance", "there are mobile phone applications for checking in" and "there is a shared kiosk placed at the terminal permits Passengers to check-in".

Smart wearable contains "Providing travelers with Wrist bands to enhance the travel experience", "Providing travelers with Smart watch to make easier travel procedures" and "Using any electronic accessories with sensors to give alerts to passengers on timing for airport formalities". Biometric services and Self-boarding include "Applying face recognition technology to make processes more efficient", "E-gates are applied to improve accuracy levels" and "Boarding card scanning machines place at the gates to self-scan the boarding pass printed by the self-check-in counter". Indoor navigation involves "Using Google indoor maps in the airport to improve travel efficiency", "Navigation from and to the airport and all other related facility locations within the terminal can be included in the personal devices", and "Applying SMART apps direct passengers to complete their airport formalities perfectly".

Self-baggage tagging dimension includes "Using drop-off machines at the departure terminal", "Providing with Smartphone applications to track the baggage status", and "Digital baggage tags are an alternative to conventional paper-based baggage tags". The artificial intelligence dimension entails "Applying Airport robot guide in different

languages", "Providing with customer service robotic agents", and Concierge robots can improve face-to-face communication". Shopping and Real-time information include "Using augmented reality application enhances the perception of passengers to give a better perspective of where to go", "There is an E-POS system enables passenger to shop whenever and wherever they want", and TV screens to provide real-time flight details, queue info, and notifications". Finally, the dimension of basic IT solutions contains "Wi-Fi technology", "Check-in process-based- computers", and "TV Screen".

3- Content analysis method

Content analysis can be performed on virtually any medium with verbal and/or visual content – printed material, radio and television programs, recorded meetings, movies, songs, etc. The content analysis has been broadly applied in marketing and consumer behavior studies (Abeysekera and Guthrie 2006; Kassarian, 1977; Sayre, 1992; Wheeler, 1988). A content analysis method was chosen to successfully execute the study. Once the sample population had been identified, the next step in the research process was to collect the content presented about The New Administrative Capital of Egypt with its new airport, restaurants, and the Al Masa Royal Palace hotel via the World Wide Web from august 2019 until August 2020. It was analyzed for the major websites, namely the Arab Republic of Egypt Presidency, YouTube, as well as search engines such as Google. The results from searches are listed in Table 2.

Table 2

Results of researches on the web

Research words	No of the websites chosen	Results of the research process
The New Administrative Capital Airport	384	41,700,000
Al Masa Royal Palace - New Administrative Capital	382	163,000

The content analysis is defined as “analysis of the manifest and latent content of a body of communicated materials (as a book or film) through classification, tabulation, and evaluation of its key symbols and themes to ascertain its significance and possible outcome” (Krippendorff, 2013, p. 14). Conventional analysis typically is used in the study to portray the phenomenon under study, and this is appropriate only when the existing literature on a certain phenomenon is limited. For the Capital International Airport, the direct content analysis is done upon three criteria:

- 1- The Capital International Airport components.
- 2- Safety and security systems.
- 3- Automated landing systems.

Population and sampling

This study was applied to the New Administrative Capital Airport and Al Masa Royal Palace hotel. Al Masa Royal Palace is five -star hotel and involves (4) restaurants as follows:

1. La Sponda- Italian restaurant
2. Montego Restaurant- The main restaurant
3. Al Khedive – oriental restaurant
4. Morgana- sea food restaurant

A complete census approach was selected for this study, which contains senior hotel managers in the Al Masa Royal Palace hotel in the New Administrative Capital of Egypt. Senior hotel managers' positions incorporated general managers, assistant general managers, Room division managers, front office managers, assistant front office managers, house-keeping executives, house-keeping assistant executives, engineering and maintenance managers, assistant engineering and maintenance managers, food and beverage managers, food and beverage assistant managers and human resources managers. Twenty managers were targeted to participate in the study. Thirteen of them answered the survey with a response rate of (68.4%). This sample size and statistical error could permit the generalization of the results.

Validity and reliability

The questionnaire form and the checklist were distributed to the five experts in the field of tourism and hospitality industry to take their opinions, then, the questions were updated and refined to reflect the comments and suggestions received by experts. Regarding the questionnaire forms, the Test-retest method was applied. It was equal to 93% and 90% for parts three and four respectively. Cronbach's Alpha Coefficient was used to measure the reliability of all factors in part three 0.70 and 0.71 for part four. Regarding the checklist, Cronbach's alpha coefficient was used to explore the internal consistency of eight core dimensions.

Data analysis

After collecting data from the methods mentioned above, data were analyzed from June to August 2020. It depended on SPSS version 20 to calculate means and standard deviation for the survey forms and calculating means score for the checklist. Content analysis is a qualitative research process that utilizes a set of procedures to make valid inferences from the text. It includes fast reading an object to find out its major theme and contribution. The process of analyzing involved speed-reading the whole article and browsing websites and watching YouTube videos. Based on this information and after watching YouTube videos, conclusions could be drawn. The content analysis method has been used successfully elsewhere to identify the article's subject matter (Chen, 2001).

Results and discussion

A- Survey results

Table 3

Characteristics of respondents

Respondents characteristic in restaurants(n=8)	No	%
Gender		
Male	8	100.0
Female	0	0.0
Age category		
Less than 30	2	25.0
Less than 40	5	62.5
Less than 50	1	12.5
50 or more	0	0.0
Job Tenure		
Less than one year	8	100.0

continued

From 1 to less than 5 years	0	0.0
From 5 to less than 10 years	0	0.0
10 years or more	0	0.0
Respondents characteristic in the hotel(n=5)	No	%
Gender		
Male	4	80.0
Female	1	20.0
Age category		
Less than 30	0	0.0
Less than 40	0	0.0
Less than 50	5	100.0
50 or more	0	0.0
Job Tenure		
Less than one year	5	100.0
From 1 to less than 5 years	0	0.0
From 5 to less than 10 years	0	0.0
10 years or more	0	0.0

Table (3) represents a summary of the characteristics of respondents in the study. Regarding the restaurants' respondents, 100% of the respondents were males. This can be interpreted to mean that all of the respondents were males. The respondent's age in restaurants was less than 40 with the majority of (62.5) and the hotel's respondents were less than 50 with all respondents (100.0). The length of time that has respondents worked in the hotel and restaurants was less than one year by all of the respondents (100%) and all of the respondents who involved in the study, worked less than one year, and this is because of the hotel was newly built.

Table 4

The importance of smart technology from the viewpoint of restaurants and senior hotel's managers

The viewpoint of restaurants senior managers	No.	%
How interested would restaurants managers in contributing to the formation of smart travel experience for customers?		
Very interested	1	12.5
Quite interested	4	50.0
Hardly interested	0	0.0
Not at all interested	2	25.0
Don't know	1	12.5
To what extent do you think an Artificial intelligence technology will make a huge difference in restaurant sector in terms of the service provided to customers		
Make many	3	37.5
Make some	1	12.5
Make a few	4	50.0
Make none	0	0.0
Don't know	0	0.0
		continued

What are the most common obstacles facing managers in using artificial intelligence applications in the restaurant?		
Lack of skills	3	37.5
High cost	5	62.5
Data loss	0	0.0
Other, specify it	0	0.0
The viewpoint of the hotel senior managers	No.	%
How interested would the hotel in contributing to the formation of a smart travel experience for customers?		
Very interested	5	100.0
Quite interested	0	0.0
Hardly interested	0	0.0
Not at all interested	0	0.0
Don't know	0	0.0
Please, say to what extent you think Artificial intelligence technology will make a difference in the hotel sector in terms of the service provided to customers		
Make many	0	0.0
Make some	5	100.0
Make a few	0	0.0
Make none	0	0.0
Don't know	0	0.0
What are the most common obstacles facing hotelier in using artificial intelligence applications in the hotel?		
Lack of skills	0	0.0
High cost	5	100.0
Data loss	0	0.0
Other, specify it	0	0.0

Where:

Strongly disagree range = 1: 1.8 Disagree range = 1.81: 2.6 Neutral range = 2.61: 3.4
 Agree range = 3.41: 4.2 strongly agree range = 4.21: 5

From Table (4) it is observed that the all hotel managers were very interested in contributing to the formation of a smart travel experience for customers (100%) of respondents, and they thought that an Artificial intelligence technology will make some difference in the hotel sector in terms of the service provided to customers, and they declared that high cost was the most common obstacle to use artificial intelligence applications in the hotel. Restaurants mangers were quite interested in contributing to the formation of a smart travel experience for customers with the half of respondents of (50%). Half of the respondents (50%) thought that artificial intelligence technology will make a few e differences in the hotel sector in terms of the service provided to customers. The most common obstacle facing managers in using artificial intelligence applications in restaurants was high cost with the majority (62.5%).

The results indicated that there is an interest in the application of artificial intelligence to some extent in the hotel and restaurants, and managers are to some extent convinced that

these technologies can make a positive change to the service provided to customers, but the most likely obstacles to not applying this technology are the high cost and lack of skilled staff.

Table 5

Advantages and disadvantages of using smart technology applications in the hotel and restaurants:

Q	Advantage and disadvantage of using smart technology applications in the restaurants	Strongly disagree %	Disagree %	Neutral %	Agree %	Strongly agree %
Smart technology applications advantages						
1	Smart technology applications enhance the guest experience across all stages of the guest journey	0.0	0.0	0.0	62.5	37.5
2	smart technology applications improve hotel guest response and service time and decrease problem resolution time	0.0	12.5	62.5	25.0	0.0
3	Smart technology applications help to present guests with highly relevant offers and services at the right time	25.0	50.0	25.0	0.0	0.0
4	Smart technology applications help to improve business processes	62.5	0.0	37.5	0.0	0.0
5	Smart technology applications reduce hotel operating costs	75.0	0.0	25.0	0.0	0.0
6	Smart technology could do routine work repeatedly.	100	0.0	0.0	0.0	0.0
B Smart technology applications disadvantages						
1	Technology cannot invent new ways to deliver services to customers	75.0	0.0	25.0	0.0	0.0
2	Technologies may be perceived as a threat by human employees.	12.5	0.0	25.0	62.5	0.0
3	Chatbots and robots can provide answers to questions that include specific key words, which they recognize to activate a particular predetermined set of answers	0.0	0.0	0.0	25.0	75.0
4	Technologies lack a personal approach.	0.0	0.0	0.0	25.0	75.0
Q Advantages and disadvantages of using smart technology applications in the hotel						
A) Smart technology applications advantages						
1	Smart technology applications enhance the guest experience across all stages of the guest journey	0.0	0.0	100	0.0	0.0
2	smart technology applications improve hotel guest response and service time and decrease problem resolution time	0.0	0.0	0.0	100	0.0
3	Smart technology applications help to	0.0	0.0	0.0	0.0	100
						continued

	present guests with highly relevant offers and services at the right time					
4	Smart technology applications help to improve business processes	0.0	0.0	0.0	0.0	100
5	Smart technology applications reduce hotel operating costs	100	0.0	0.0	0.0	0.0
6	Smart technology could do routine work repeatedly.	0.0	0.0	100	0.0	0.0
b) Smart technology applications disadvantages						
1	Technology cannot invent new ways to deliver services to customers	0.0	0.0	0.0	0.0	100
2	Technologies may be perceived as a threat by human employees.	0.0	0.0	0.0	0.0	100
3	Chat bots and robots can provide answers to questions that include specific key words, which they recognize to activate a particular predetermined set of answers	100	0.0	0.0	0.0	0.0
4	Technologies lack personal approach.	100	0.0	0.0	0.0	0.0

Table (5) shows the advantages and disadvantages of using smart technology applications in the hotel and restaurants. It is observed that 37.5 % of respondents strongly agreed on "Smart technology applications enhance the guest experience across all stages of the guest journey" as the advantage of smart technology applications in restaurants and 75.0 % of respondents also strongly agreed on " Chatbots and robots can provide answers to questions that include specific keywords, which they recognize to activate a particular predetermined set of answers" and "Technologies lack personal approach" are the most disadvantage of using smart technology applications in restaurants.

Regarding the disadvantages of using smart technology applications in the hotel, all participants strongly agreed on "Technology cannot invent new ways to deliver services to customers" and Technologies may be perceived as a threat by human employees and this result contradicts with the study done by (Wisskirchen ,2017) that the advantage of robotics and intelligent for staff is that employees have to do less physical or hard work; cyclic and repetitive, for example, back-office actions in the service sector: algorithms will gather data automatically, they will transfer data from purchasers' to sellers' systems, and they will find solutions for customers' troubles. Once an interface between the sellers' and the purchasers' system has been set up, employees are no longer required to manually enter data into an IT system, and employees might have more free time that they can use for creative activities or individual recreational activities.

Data was analyzed to find out the current use of artificial intelligence applications in restaurants and the hotel, table (6) shows the summary of data collected.

Table 6

The current use of artificial intelligence applications in restaurants and the hotels

Q	The current use of artificial intelligence applications in restaurants	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	SD.
		%	%	%	%	%		
1	AI is used in personalized service for customers.	62.5	0.0	25.0	0.0	12.5	2.00	1.51
2	Using Intelligent Chatbots services for easy communication	75.0	0.0	25.0	0.0	0.0	1.50	0.93
3	Robotic process Automation and revenue accounting.	75.0	0.0	25.0	0.0	0.0	1.50	0.93
4	All the dishes, desserts, drinks and everything that Restaurant offers, in one Application.	75.0	0.0	25.0	0.0	0.0	1.50	0.93
5	AI is used in restaurant staff assistance.	75.0	0.0	25.0	0.0	0.0	1.50	0.93
6	AI is used in lodging services.	75.0	0.0	25.0	0.0	0.0	1.50	0.93
7	Using beacon technology to promote the organization	75.0	0.0	25.0	0.0	0.0	1.50	0.93
8	Using service automation technologies	0.0	25.0	12.5	62.5	0.0	3.38	0.92
9	Depending on robots to deliver item in restaurants	87.5	0.0	0.0	12.5	0.0	1.38	1.06
10	advertising possibilities within Startup Applications	75.0	0.0	25.0	0.0	0.0	1.50	0.93
11	Check-in with facial recognition is to allow guests to skip lines at the front desk and complete registration forms.	75.0	0.0	25.0	0.0	0.0	1.50	0.93
12	Guests can use their mobile devices to control all the functions within the restaurant	75.0	0.0	25.0	0.0	0.0	1.50	0.93
13	Using restaurant software systems in operational analytics	12.5	0.0	37.5	50.0	0.0	3.25	1.04
14	Tablet, which replaces printed catalogues. Customers can browse through the offered products watching pictures	62.5	0.0	25.0	12.5	0.0	1.88	1.25
15	Using restaurant software systems in marketing efforts	37.5	12.5	50.0	0.0	0.0	2.13	0.99
16	Restaurant is mainly staffed by robots for example the reception is staffed by multi-lingual robots	87.5	0.0	12.5	0.0	0.0	1.25	0.71
17	Virtual Reality by imagine being 'in' a restaurant mile away even before customers decide whether or not to book	100	0.0	0.0	0.0	0.0	1.00	0.00

Q	The current use of artificial intelligence applications in the hotel	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	SD.
		%	%	%	%	%		
1	AI is used in personalized service for customers.	0.0	0.0	0.0	0.0	100	5.0	0.0
2	Using Intelligent Chabot’s services for easy communication	0.0	100	0.0	0.0	0.0	2.0	0.0
3	Robotic process Automation and revenue accounting.	0.0	0.0	0.0	100	0.0	4.0	0.0
4	AI is used in sentiment and loyalty analysis.	100	0.0	0.0	0.0	0.0	1.0	0.0
5	AI used in hotel staff assistance.	100	0.0	0.0	0.0	0.0	1.0	0.0
6	AI used in lodging services.	100	0.0	0.0	0.0	0.0	1.0	0.0
7	Using beacon technology to promote the organization	100	0.0	0.0	0.0	0.0	1.0	0.0
8	Using service automation technologies	100	0.0	0.0	0.0	0.0	1.0	0.0
9	There is a Personalized destination guide based on their guests’ travel dates using an AI-empowered content solution.	100	0.0	0.0	0.0	0.0	1.0	0.0
10	Robot concierges	100	0.0	0.0	0.0	0.0	1.0	0.0
11	Check-in with facial recognition is to allow guests to skip lines at the front desk and complete registration forms.	100	0.0	0.0	0.0	0.0	1.0	0.0
12	Using A Smartphone Application as A Digital Key	100	0.0	0.0	0.0	0.0	1.0	0.0
13	Using hotel software systems in operational analytics	0.0	0.0	100	0.0	0.0	3.0	0.0
14	Guests can use their mobile devices to control all the functions within the room	100	0.0	0.0	0.0	0.0	1.0	0.0
15	Room service robots bring food, drink, and extra towels to guests	100	0.0	0.0	0.0	0.0	1.0	0.0
16	Hotel is mainly staffed by robots for example the reception is staffed by multi-lingual robots	100	0.0	0.0	0.0	0.0	1.0	0.0
17	Virtual Reality by imagine being ‘in’ a hotel room mile away even before customers decide whether or not to book	100	0.0	0.0	0.0	0.0	1.0	0.0

From Table (6), it is observed that some smart applications need special attention to key strategic challenges they are; "Tablet, which replaces printed catalogs that customers can browse through the offered products watching pictures" (mean score = 1.88) , "Guests

can use their mobile devices to control all the functions within the restaurant" (mean score = 1.50), "Check-in with facial recognition is to allow guests to skip lines at the front desk and complete registration forms" (mean score = 1.50), "advertising possibilities within Startup Applications" (1.50) , "Using beacon technology to promote the organization "(mean score = 1.50), "AI used in lodging services" (mean score = 1.50)," AI used in restaurant staff assistance"(mean score = 1.50), "All the dishes, desserts, drinks and everything that Restaurant offers, in one Application" (mean score = 1.50), "Using Intelligent Chatbot’s services for easy communication(mean score = 1.50)", "Robotics process Automation and revenue accounting" (mean score = 1.50), "Depending on robots to deliver item in restaurants" (mean score =1.38) and "Restaurant is mainly staffed by robots for example the reception is staffed by multi-lingual robots" (mean score = 1.25) and finally "Virtual Reality by imagine being ‘in’ a restaurant miles away even before" (1.00). However, the results indicate that The Al Masa Royal Palace hotel and the Four Restaurants in The New Administrative Capital apply a low average level of artificial intelligence technologies.

2- Check list result for The Capital International Airport:

Table 7

Result of the Airport check list items: Means and rating

Check list	Mean	Rating	Rank
1. Smart Check-in	2.33	Meets the entry level criteria	2
2. Smart wearable	1.0	Needs improvement	6
3. Biometric services and Self-boarding	1.33	Needs improvement	5
4. Indoor navigation	1.0	Needs improvement	6
5. Self-baggage tagging	1.0	Needs improvement	6
6. Artificial intelligence	1.67	Meets the entry level criteria	4
7. shopping and Real-time information	2.33	Meets the entry level criteria	2
8. basic IT solutions	3.0	Exceeds entry level criteria	1
Overall Check list	1.71	Meets the entry level of criteria	

Needs improvement =1–1.66

Meets the entry level of criteria= 1.67–2.33

Exceed entry level criteria= 2.34–3

From the previous table (7), it is obvious that there is one item only excess entry-level criteria "basic IT solutions" get a score of 3.0 that means requires minimum care for application technology in the international airport. Moreover, three items which meet the entry-level of criteria and require some care for smart technology application in the airport are " shopping and Real-time information", "Artificial intelligence", and "Smart Check-in" with rating score, 2.33, 1.67, and 2.33 respectively. There are four items that needs improvement and require much interest for smart technology application in the airport like "Self-baggage tagging", "Indoor navigation" (1.0), "Biometric services and Smart wearable " with rating score (1.0), and "Self-boarding" with rating score (1.33).

With the most modern technology, getting to the destination can be made less stressful. The latest flight information that can be accessed via Smartphone and through the use of interactive kiosks provide much better experiences for travelers, can enhance their customer loyalty with solutions that integrate the use of single board computers, touch panel PCs, and digital signage players. However, it is obvious from the checklist result that overall checklist items meet the entry-level of criteria with rating score (1.71) and require some care for smart technology application in the international airport in the new administrative city, which means that the airport management in the new administrative city don't give much interest to all of the almost smart technology applications and it is an early adaptor to the digital technology into the airport.

3- The content analysis results

A - The new administrative capital airport

Based on the website's analysis, the following data were extracted:

1- Location of the New Administrative Capital Airport

- The airport is located at km 61 on the Cairo / Suez road to the east of Cairo International Airport.
- The airport is connected to four main roads: (Suez Road - Middle Ring Road - Ain Sokhna Road - Regional Road).
- The airport serves the districts of Greater Cairo of 6 October and Sheikh Zayed, as well as the governorates of Fayoum and Beni Suef.

2-The Capital International Airport components:

- The Airport can accommodate the capacity to accommodate 300 passengers per hour, with 45 buildings around the place and the main terminal of over 4000 square meters of space. The building also contains the following:
 - 8 parking lots
 - 6 counters to reach.
 - 4 counters for travel.
 - 2 bags conveyor belt.
 - An arrival hall for VIP visitors.
 - 6 counters for airline companies.
 - An Information counters.
 - Airlines firms' offices.
 - Tourism companies' offices.
 - Banks area.
 - Quarantine, veterinary and agricultural offices
 - Shops.
 - Egypt Air duty-free port.
 - Cafeterias.

3-Safety and security systems:

- The airport has been equipped with the latest surveillance cameras and X-Ray detection systems, as well as manual inspection.
- The airport has been equipped also with an automatic fire alarm system, an access control system.

- Camera surveillance systems have also been installed.
- There are also security services related to the detection of bags, minerals, and all contraband, such as:
- Baggage detection service through 9 units.
- It is equipped with state-of-the-art technology especially for the security systems and 7 X-RAY baggage inspection machines.
- 7 metal gates to screen passengers.
- 88 security cameras inside the halls.

4-Automated landing systems

- The airport is equipped with automatic landing systems (ILS / DME).
- The surveillance software building is equipped with the latest air traffic management devices.
- The airport contains several other services, which are:
- FIDS data displays, TV screens, indoor broadcasting, center clocks and Wi-Fi internet.
- The parking can accommodate 400 cars and 20 buses.
- 12 car toll gates (6 entry + 6 exit).
- Administrative roads are (about 20 km long), and walls (about 26 km long).
- The site has been completely coordinated with an area of 21 thousand square meters (landscaping).
- 42 administrative and service buildings are divided into a building for aircraft waste and waste, an administrative store building, a power station, a water tank, a permit building, a cooling station (cooling units), an administrative building for workers, and a meteorological station.

From the results of the content analysis of websites, articles, and documents about the international airport in the new administrative capital, we can conclude that although there is a high good interest in infrastructure, technology, and insurance systems for travelers, the airport administration is not interested in implementing smart technology applications that would provide an enjoyable travel experience for travelers.

B - The Al Masa Royal Palace Hotel,

- A hotel involves 90 suites, 270 rooms, and fully equipped areas to accommodate people with special needs.
- The hotel also has several features as Wi-Fi, Parking, Fitness center, Tennis court Billiard tables, Archery, Outdoor swimming pool Sun terrace, Garden area, Restaurants, Meeting/ Banquet Facilities, Spa & wellness center, Flat-screen, TV Non-smoking rooms, Smoke detectors, ATM/Cash machine, Fire extinguishers, and other general facilities and for disabled guests.
- The hotel' has four in-house -restaurants including Italian, Middle Eastern, and international cuisine, and guests can drink coffee at the coffee shop/cafes.

IOT technology units are as thermostats, motion sensors, and ambient light sensors that can be used to manage temperature and lighting in hotel, can reduce energy costs by 20 to 45 percent (DePinto, 2016). It is observed that the incorporation of IoT technology in the

hotel building as the smart building which is an important facet of smart cities is not found in the Al Masa Royal Palace hotel. The hotel has not placed a tablet in rooms or restaurants. The hotel management isn't tending to follow the growing trend to offer new types of smart services to guests as well as to enact cost-saving measures which means that the hotel leader has not adapted yet to the possibilities of the digital revolution. Robotic process automation (RPA) is defined as “the use of a software robot that replicates the actions of a human to implement duties across several computer systems. Norfleet (2017) added that “a minute of work for a robot is equal to about 15 minutes of work for a human”.

Conclusion and recommendations

Although the Capital International Airport and The Al Masa Royal Palace hotel are well equipped with smart technology and ready for digital transformation, they still depend on traditional operational processes which need using more AI technologies and cooperating with experts to use them effectively in facilitating travel and accommodation procedures for tourists. Undoubtedly, this research reviews many important improvements that must be applied in the hospitality sector and airports to suit the modern era, including smart restaurants, hotels, and airports which offer an innovative technology-first approach for customers, to achieve their high expectations from applying smart technology on tourism and hospitality sectors. Based on the previous results, it was possible to make some recommendations and suggestions. The recommendations of the research were divided into two parts. Firstly, recommendations directed for the administration of the airport includes the necessity of incorporating IoT technology in the airport as the smart building to support airlines, developing applications in the context of digitizing services lead to saving effort for travelers and offering smart services to travelers as smart wearable devices, biometric services and facial recognition system. Secondly, recommendations directed to the hotel and restaurant stakeholders involve implementing smart rooms and using smart room applications as digital keys, installing beacon technology to promote and up-selling hotels and restaurants, developing hospitality services to incorporate robots, and replacing paper menus with tablets in restaurants.

Limitations and further study

A set of challenges were faced in the research related to the fact that the new administrative capital – Egypt is still under construction and many investments have not been completed yet, which led to the sample of the study being limited. Finally, further studies should be conducted to evaluate applying smart technology on the work of tour operators and tourism agencies in the New Administrative Capital of Egypt as soon as its opening for the tourism activity. It is also necessary to do researches on the role of adopting artificial intelligence and the Internet of Things to keep future guests' safety, especially in the COVID 19 outbreak and help reduce face-to-face contact and provide travel and hospitality services without contact to reduce disease transmission.

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تطبيقات التكنولوجيا الذكية فى صناعة السياحة والضيافة بالعاصمة الإدارية الجديدة، مصر

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المفص

أصبحت التكنولوجيا الذكية ذات أهمية كبيرة فى قطاع السياحة فى الوقت الحاضر، خاصة فى ظل التطورات الكبيرة فى مجال تكنولوجيا المعلومات والاتصالات واستخدام تقنيات الذكاء الصناعى فى العديد من المجالات، ومنها المجال السياحى. يركز هذا البحث على توضيح مفهوم التكنولوجيا الذكية وأهميتها فى مجال السياحة، وكيفية تطبيقها فى صناعة السياحة والضيافة. وقد تم اختيار العاصمة الإدارية الجديدة - بجمهورية مصر العربية لإجراء البحث، وتتضمن الدراسة سؤالين بحثيين: (1) ما مدى انتشار تطبيق التكنولوجيا الذكية فى مطار العاصمة الدولية والفندق والمطاعم؟ و(2) ما هو الاستخدام الحالى لتطبيقات الذكاء الاصطناعى فى مطار العاصمة الدولية والفندق والمطاعم؟، ويهدف البحث إلى توضيح أنواع تطبيقات التكنولوجيا الذكية؛ التعرف على أهمية استخدام تطبيقات التكنولوجيا الذكية فى قطاع السياحة؛ وتقييم الاستخدام الحالى لتطبيقات الذكاء الاصطناعى فى مطار العاصمة الدولية وفندق الماسة؛ وأخيرا تقديم توصيات مفيدة بناءً على نتائج الدراسة. تم استخدام استمارات الاستقصاء ونموذج قائمة المراجعة وطرق تحليل المحتوى لجمع البيانات، لقد تم تحليل البيانات باستخدام برنامج SPSS إصدار 20. وقد أوضحت النتائج أن كلا من فندق رويال الماسة ومطار العاصمة الدولية لا يقدمان أنواعاً جديدة من الخدمات الذكية للضيوف حتى الآن؛ على الرغم من أن لديهما بنية تحتية تقنية جيدة، وأوصت الدراسة بتنفيذ بعض الخدمات الذكية للمسافرين فى المطارات مثل التطبيقات الذكية المباشرة على الركاب لإتمام إجراءات المطار بشكل مثالى، وضرورة توفير تطبيقات المطاعم الذكية والغرف الذكية فى الفنادق فى العاصمة الادارية الجديدة لمصر.

معلومات المقالة

الكلمات المفتاحية

التكنولوجيا الذكية؛
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