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Artificial Intelligence Techniques in Egyptian Hotels: Current Status and Prospective

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Abstract

The pioneers of AI in the hotels when adoption artificial intelligence techniques, they will face different reaction concerns and questions from employees about this innovative artificial intelligence technique. This research aims to explore the current status and prospective to apply artificial intelligence techniques in Egyptian hotels, and their willingness to merge with employees' within Egyptian hotels and the challenges they face while using it, to achieve the research aim, an electronic questionnaire was designed and distributed to a random sample of employees' in Egyptian hotels, 400 valid responses were received and analyzed by SPSS V.29. The results indicated that Egyptian employees' do not have enough information about artificial intelligence techniques to accept the experience of artificial intelligence techniques in the future. This information includes advantages, risks, and artificial intelligence techniques substitution for the human element, Therefore, maybe employees' no acceptance and confidence in artificial intelligence techniques is the major obstacles to the adoption process of this innovative techniques in Egyptian hotels. Based on the results, some recommendations were suggested and directed to artificial intelligence techniques (AIT) professionals, hotel managers, hotels owners and the government and institutions responsible for revitalizing tourism and hotels in Egypt. One of the main recommendations was that the work in the concerned departments must be restructured and developed in terms of digital transformation, digitization, and service automation in terms of speed, goal achievement, ease of use, prices, and the institutional and intellectual readiness of department managers to provide their services in this context. Employees in the hotels industry should receive training in entrepreneurship, business administration, and innovation to link changes in smart technology and artificial intelligence techniques to the international hotel industry.

Key Words: Artificial Intelligence Techniques, Employees' Perspectives, Digital Hotels, Egyptian Hotels, Current Status and Prospective.

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Introduction

According to **Han *et al.* (2021),** Intelligent techniques refer to the set of functions provided by hardware and software components to create seamless communication within the social space, taking the form of smart devices and intelligent systems. Intelligent techniques can also be understood through two dimensions: enabling techniques and applied techniques. Enabling techniques, including video analytics, robotics, drones, the Internet of Things, data analytics, cloud technologies, artificial intelligence, and machine learning, form the basis of applied technologies (**Go *et al.*, 2020; Shnurenko *et al.*, 2020; Hwang *et al.*, 2021; Lee *et al.*, 2021; Yu *et al.*, 2023**). One of the types of technology applied is facial recognition, which was developed based on video analytics. Automated concierges, robotic vacuums, in-room service robots, etc. are developed based on robotics technology and the Internet of Things "*IoT*" along with mobile techniques applied in hotels and wearable technology in the hotels (**Kılıçhan and Yilmaz, 2020**). Baggage tags in stores, in-room lighting sensors, automatic checking of minibar items, etc. are technological manifestations of the Internet of Things. A smart hotel room consists of Internet of things connected devices that are used to provide a seamless guest experience (**Foroudi *et al.*, 2018; Lim *et al.*, 2018**). The emergence of the Internet of Things has expanded the social space from its physical dimension to a virtual one (**Baiyere *et al.*, 2020**). Recently, modern smart techniques have appeared that are used in hotels, such as virtual reality, augmented reality, mixed reality and Metaverse technology (**İlhan and Çeltek, 2016; Abass and Zohry 2022; Chiappa, 2022; Ghare, 2022; Robinson, 2022; Verkerk, 2022**).

The research's problem is to explore the attitudes of employees' perspectives to use artificial intelligence techniques in Egyptian hotels between current status and prospective, studying the current status and prospective to application of artificial intelligence techniques , challenges that prevent the organizational application of artificial intelligence techniques in Egyptian hotels in the study community and raising awareness among employees' With Advantages of Artificial Intelligence Techniques in Hotels Industry in all its forms to most of the hotel services provided in the smart hotels. The opinion of hotel employees' is important when making decisions to introduce artificial intelligence techniques into hotel services. When they do not see the advantages of using artificial intelligence techniques in Egyptian hotels, this is an obstacle towards its application, Especially in the event

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of a threat to their jobs in hotels when some smart techniques are applied. Therefore, the application of artificial intelligence techniques in hotels is very important to increase the awareness about employees' of its benefits to deal with it if applied at the current time or in the prospective **(Yu *et al.*, 2023)**.

Aims of the Research:

This study aims to explore the current and Prospective situation of applying artificial intelligence techniques in Egyptian hotels, and to list the motives and advantages of applying smart techniques in hotels and to know the doubts, questions and challenges facing employees towards the application of artificial intelligence techniques in the hotel sector in terms of the applied and behavioral study of their views of the current and Prospective situation to adopt the application Artificial intelligence techniques. This study seeks to enhance the understanding of the stakeholders' attitudes, represented by a sample employees of five-star hotels in Cairo and Sharm El-Sheikh, towards smart hotel techniques. To analyze employees' intention to adopt information technology, their perceptions and experiences of using smart hotel techniques. And measuring performance regarding the adoption of artificial intelligence techniques in the Egyptian hotel industry.The field study was completed in 7 months "from **2** April 2022 to **25** October 2022".

Research Hypotheses

The research the explored while studying the current and Prospective situation of applying artificial intelligence techniques in Egyptian hotels, that advantages of artificial Intelligence techniques have an informational effect and contributes to the reduce of challenges facing employees' of apply artificial intelligence techniques in the Egyptian hotel industry. The research hypotheses can be suggested as follows:

Hypothesis1: The Challenges Facing Applying artificial intelligence techniques on Egyptian hotels have a significant effect Current Status on the applicability it in Egyptian hotels.

Hypothesis 2: Determining the advantages of investing in the use of artificial intelligence techniques in Egyptian hotels have a significant effect on Increasing perception towards the application of artificial intelligence techniques in the prospective.

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Hypothesis 3: There are significant differences on 0.05 degree among the perceptions of the investigated respondents towards the applicability of artificial intelligence techniques in Egyptian hotels refers to some demographic data.("H .3.1" Current Status referring to the level of education, " H .3.2" Current Status referring to the years of experience, " H .3.3" Prospective Status referring to the level of education, " H .3.4" Prospective Status referring to the years of experience).

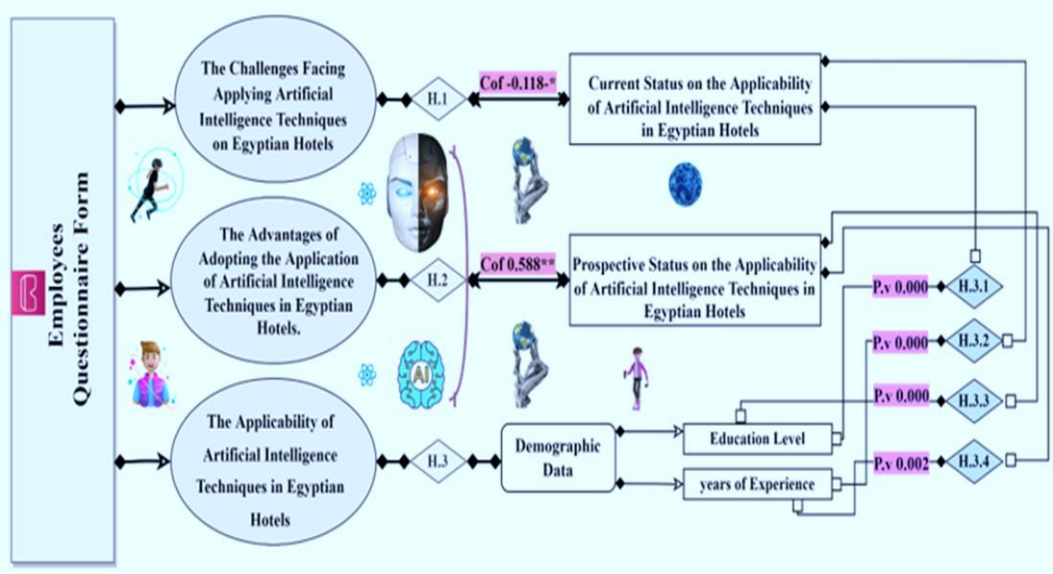

Figure 1: The Proposed Research Framework and Hypotheses

Literature review

Smart Hotels / Digital Hotels:

According to **April (2022),** "***Smart Hotels***" refers to a "*smart*" world where hotels incorporate the latest technology to meet the desires of their guests, Smart hotels provide guests with an innovative technology-first approach, addressing the way we live today and our high digital expectations. Accordingly, smart hotels have integrated robots into their business operations to take advantage of artificial intelligence techniques to attract customers and find solutions to customer problems **(Ercan, 2019**). According to **Stankov *et al.* (2019)** provides an example

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that Wynn (Las Vegas, USA) was among the first hotels in the world to commercially introduce "*Amazon Echo*" smart speakers as room equipment where guests could verbally control many aspects of lighting, temperature, and audio-visual components A hotel room using commands via voice-activated "*Alexa*" assistance. According to **Tung and Law (2017)** detail the use of robots in the day-to-day operations of hospitality environments as robotic servants (eg, Boltr at Aloft Hotels), and robotic arms as bartenders (Bionic Bar on Royal Intake of Seas in the Caribbean) A virtual automated operator at the Tourist Information Center in Singapore. This indicates that robots are gradually beginning to gain motivation and ability to perform tasks normally performed by humans, and can be deployed as receptionist, concierge, bellboy, housekeeper, and chef robot (**Ivanov and Webster 2019**). In fact, one of the most advanced applications of AI is illustrated by the introduction of a human-like social robot developed by Singapore's Nanyang Technological University *"NTU"* in 2018 **(Drexler and Lapré, 2019)**. The robot works as a receptionist at the *"NTU"* Institute of Media Innovation **(Drexler and Lapré, 2019)**. With workforce issues and economic efforts in mind, recent technological breakthroughs in service automation, artificial intelligence and robotics have created limitless possibilities to enhance organizational performance, productivity as well as quality consistency (**Drexler and Lapré, 2019).**

Smart room or smart room technology is an example of AI widely used in hotels (**Neuhofer *et al.*, 2015**). Hence, smart hotels have started rolling out room controls within their smartphone platform that enable guests to change room temperature, lighting mood, TV, music, curtains etc., asserts that this level of customization has not been possible before and will change the guest experience and improve energy consumption (**Shedd, 2020**).

It is also clear, that artificial intelligence occupies a major role in enhancing the guest experience, and trends now include the use of virtual and augmented reality, predictive analytics, personalization technology and robotics in the hotel, (**Seal, 2019**). AI applications can enhance the perceived quality of service on new and interactive approaches to service delivery and guest engagement, thus, an increasing number of hotels are adopting AI in their service processes to provide what they perceive as a much-needed technology (**Li *et al.*, 2019**). To illustrate, robotics, artificial intelligence, virtual reality, and self-service technologies used in smart hotels can help reduce operating costs, portray a positive brand image,

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provide targeted marketing opportunities and create a competitive advantage to face other competitors in the market (**Ercan, 2019**).

Application of Artificial Intelligence Techniques in the Hotel Industry:

Table (1) illustrate the types of artificial intelligence techniques , definition, and its application:

Table 1: Types of artificial intelligence techniques , definition, and its application:

Type of Technique	Example	Application in the Hotel Industry
1. Artificial Intelligence Techniques: The Organization for Economic Co-operation and Development has defined artificial intelligence as follows: "An AI system is a machine-based system that, for a given set of human-defined goals, can make predictions, recommendations,	**A. Robots**: According to the **International Federation of Robotics (2021a)**, a service robot is a type of autonomous robot that performs useful tasks for humans based on the situation it is dealing with through sensing without human intervention. In a more specific sense, service robots are described as social agents that can replace human service providers in service trials **(Van Doorn *et al.*, 2017)**.	According to **Samala *et al.* (2022)**, Robotic techniques are the most common application of artificial intelligence techniques in the hotel industry, where robotics are prominent as pioneering technologies, their use is becoming widespread, and they are seen as emerging techniques in the hotel industry. Hotels can take advantage of smart robots in the food and beverage department, save money and people, enrich menus, reduce errors, reduce food waste, and work 24/7 without boredom or downtime. In this context, the following are application examples of robotic techniques in the hotel industry departments **(Feller, 2021)**.

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or decisions that affect reality or virtual environments", AI systems are designed to operate with different levels of autonomy **(OECD, 2019)** .AI is broadly defined as the ability of intelligence to acquire knowledge and apply it to achieve results and combine actions with descriptions rather than remembering a situation **(Chatterjee, 2020)**.	**B. Drones:** According to **Lutkevich (2022)**, Drones are officially known as unmanned aerial vehicles "UAVs" or unmanned aircraft systems. Essentially, a drone is a flying robot that can be remotely controlled or flown autonomously using software-controlled flight plans in its embedded systems, which operate in tandem Combined with on-board sensors and GPS.	Drones appeared in different industries for different purposes. There are also studies on the use of drones in order delivery in the tourism and hospitality industry (**Hwang *et al.*, 2021; Kim *et al.*, 2021**). Other than delivery, drones are used for video shooting to market the destination (**Stankov *et al.*, 2019**) and photography to monitor visitors in areas such as archaeological sites (**Donaire *et al.*, 2020**). In the food and beverage industry, drones serve as waiters by transporting meals and beverages to guests' (**Hwang and Kim, 2021; Waris *et al.*, 2022**). As drones use electrical energy to deliver orders, they contribute to the green image of food and beverage companies in protecting the environment (**Hwang and Kim, 2019**).
	C. Chat bots: According to **Pillai, and Sivathanu (2020)**, has been defined Chatbots as virtual agents, instant messaging bots, and artificial conversational entities, chatbots are computer programs that can respond to text or verbal commands, and questions, providing advice in the place of a human staff member.	There are many advantages of the chatbot is that it helps to enhance the guest experience when corresponding with the hotel. The chatbot is available 24/7 and as a multilingual application can serve guests from different nationalities, avoid queues and crowds, keep social distancing in covid19, Avoid the need for face-to-face contact with staff, ensure cleanliness and Ensure safety Provide instant up-to-date information, At the same time, this contributes to reducing the staff workload, Lowering costs via automation (**Lukanova *et al.*, 2019**). As the guest communicates with the chatbot throughout his stay at the hotel, this could help the hotel to collect and study his behavioral trends and thus to refine its services and offerings. This in turn would help to build brand loyalty **(Stoilova,**

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		2022).
	D. Blockchain: is a new method for structuring, organizing, processing, and recording data, and a Blockchain is defined as a chain of blocks containing a technical plan for a trusted database that is collectively maintained through decentralized and trusted methods, each block in the blockchain Time-stamped and connected to each other using cryptographic hash functions. Blockchain technology is generally referred to as distributed ledger technology because it consists of a distributed ledger that is transparent in nature and requires common consensus among all nodes to update data **(Florentina, 2022)**.	Blockchain aims to revolutionize the way customer information is stored and managed. Nowadays, customers are required to show their ID cards at various stages starting from hotel reservations, flight, baggage, immigration permit and finally hotel check-in. Blockchain provides the user with the ability to identify a paperless identity. It allows storing user data on secured blocks using encryption functions. A new transaction is initiated at each travel stage that corresponds to a specific user ID. Therefore, creating a hassle-free experience for the guests, as well as helping the local government know the whereabouts of a particular traveler (**Florentina, 2022**).
	E. ChatGPT: is a natural language processing chatbot (NLP) model powered by deep learning. It is designed to generate human-like conversations on a given topic. ChatGPT was created to help brands and companies automate customer conversations,	ChatGPT helps in analyzing hotel guest reviews, which is based on reviews, and based on the reviews they acquire. This will help learn guest behavior and help hotels better meet the needs of their guests. The clever secret of ChatGPT technology is that once hotels catch up with the challenges of working in the supply chain, they can use ChatGPT as a way to get very creative with automated menu design because ChatGPT knows

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	making customer interactions more engaging and efficient. It can be used for tasks like bots, customer service emails, dialogue systems, and more. With ChatGPT, you can build AI-powered applications that understand complex user queries and respond in a natural way **(Azaria, 2023; Mahmoud, 2023)**	what guest preferences are, what ingredients are being sold, and what dietary restrictions are. For this particular guest, designing a menu dedicated to this guest, who in turn enhance the guests experience and satisfy , and even keep their loyalty to the hotel **(Paialunga, 2022; Enriquez, 2023).**
2. Internet of Things Techniques (IOT): is a data-oriented techniques that creates connectivity between devices using sensors, generating a wireless sensor network "WSN" **(Kumar *et al.*, 2021).**	**A.** Smart Room: According to **Petrevska *et al.* (2020)**, define smart rooms as hotel rooms with stations with processors that continuously monitor Various processes critical to normal functioning, e. g. controlling the temperature and monitoring the movement of the guests in and out of their rooms.	Smart rooms can provide many benefits in terms of reducing waste of water or electricity, reducing waste, and controlling room temperature. They can also reduce the need for employees to perform tasks that can be transferred to automated "smart" systems. This cost reduction is great for the bottom line of the hotel's revenue, but there's more to the business. When implemented correctly, smart rooms and automation can help hotel branding in unexpected ways. Hoteliers are turning to smart rooms in response to the desires of guests. For years, hotels have inserted key cards in their doors, and this has been the extent to which they experience the "technique" they are facing (**Imbardelli, 2019**).
	B. Digital kiosks: Digital kiosk is a standalone electronic device, usually equipped with a touch screen and allowing users to complete their own tasks themselves. These kiosks	These kiosks allow passengers to complete orders without the help of a service agent. In a hotel, a kiosk allows a guest to check into their room by connecting directly to the hotel's property management system (PMS) via an API, generate room keys (key cards), and perhaps even book a restaurant or upgrade

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	allow passengers to complete orders without the help of a service agent. In a hotel, a kiosk allows a guest to check into their room by connecting directly to the hotel's property management system (PMS) via an API, generate room keys (key cards), and perhaps even book a restaurant or upgrade to a suite **(Hotel Tech Report, 2022).**	to a suite **(Hotel Tech Report, 2022)**
	C. The Interactive Dining Table: An interactive dining table is basically a very large tablet designed just as a table and can be used for just about anything from cooking to eating to writing to dancing **(Spence and Piqueras-Fiszman, 2013).**	The interactive dining table is online and can help restaurant customers to order their food and do more while waiting for dinner to be served, this is a new way of communication, interaction, entertainment and ordering system for customers **(Margetis *et al.*, 2013; Rosanna and Poh, 2022)**. It is also used as a contactless payment technology and customers can use their smartphone or tap and pay on credit/debit cards to make simple and secure payments **(Echtler and Wimmer, 2014)**.
	D. Three-Dimensional Hologram: The word, hologram is composed of the Greek terms, "*holos*" for "whole view"; and gram meaning "written". A hologram is a three-dimensional record of the positive interference of laser light waves and that is through	Using 3DHT to fetch musicians around world to performing in the hotel is an interesting event which would have a positive impact on guests and increase its numbers,3DHTwill help hotels to reduce carbon dioxide thus save environment, Hologram technology is an effective way to introduce different concerts and movies each night ,using 3DHT in conferences will make hotel's competitive advantage and save time of members and help

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	light wave interference patterns that can be played back to create a high-resolution image in full color and three dimensions. A technical term for holography is wave front reconstruction (**Yu *et al.*, 2017; Zhang *et al.*, 2022**)	managers and businessmen to not incur a high cost of travelling and accommodation **(AbdelHaleem *et al.*, 2021; Perkowsky, 2021).**
3. Mobile Techniques: Mobile technology is technology that goes where the user goes. It consists of portable two-way communications devices, computing devices and the networking technology that connects them **(IBM, 2023)**	**A. Near Field Communication (NFC):** Near Field Communication (NFC), is a growing technology among automatic identification technologies, this includes authenticating credit cards, enabling physical access, transferring small files, and jumpstarting more capable wireless links **(Lawton, 2022)**	NFC technology offers great opportunities for destinations, hotels, and tourism companies to improve the efficiency and quality of existing services **(Vitezić *et al.*, 2015)**. The concept of smart tourism with the emergence of smart tourists requires more technology, NFC, as one of the smart tourism tools, is particularly able to meet the expectations of tourists due to its ease of use and safety **(Çaylak, 2020).**
	B. Wireless Charging: Long-range wireless charging technology is known as new, cutting-edge technology, promises a better future. It can charge mobile devices without cables or Qi charging pads, where Devices on a wireless network can connect to each other (peer to peer) or can connect to an access point, in a way that is	wireless charging systems are in use in several "Accor" hotels across Europe, and "Marriott" hotels have also installed wireless charging stations in hotel lobbies in the United States and many hotel rooms have clocks with wireless charging **(Çaylak, 2020).**

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	completely wire-free **(Boger, 2018; Ko and Oh, 2020).**	
	C. I-Beacons: I-Beacons are small equipment's that send radio signals to nearby gadgets, such as cell phones. The communicated radio signs sent by Beacons can be received by smart gadgets present nearby **(Triantafyllou *et al.*, 2017; Yao *et al.*, 2019; Pangriya and Pandey, 2021).**	IBeacons are also useful for measuring and enhancing employee productivity, for example, iBeacons can alert housekeeping staff to service a room when a guest is outside or not to disturb a guest when they are in the room, No more door hangers **(Geisler, 2018).**
	D. Digital Smart Key: According to **Boberg (2022),** The digital key card for guest room access makes use of a (guest's) smartphone application.	The mobile key card for hotel guests will have the following functions: (1) room check in and out; (2) reservation booking; (3) rewards program login; (4) general hotel information; (5) digital guest feedback and comment cards and (6) hotel promos **(Torres, 2018)**.
4. Wearable Techniques: can be defined as "wearable devices that integrate wireless communication with the goal of seamlessly accessing, interacting with and exchanging contextually	**A. Smart Watch:** are one of the wearable techniques that were recently promoted by the announcement of the Apple Watch as the smart watch **(Pal *et al.*, 2020; Uzir *et al.*, 2021).**	Hotels are using smart watches for their employees, paired with task management software to help speed service by responding to their messages and improving guest communication and efficiency rather than requiring the guest to call in a request to a human worker waiting for service **(Mohamed and Soliman, 2020).**
	B. Wrists Band: The wristband is used to pass the hotel room	Room keys and locker can be combined into a single wrist or card for the ultimate convenience of the customer, as well as

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relevant information" **(Kansakar *et al.*, 2019; Egeli and Kurgun, 2021).**	keys by the guests **(Chen and Wang, 2021)**, hotel staff wear wristbands to detect their body temperature as housekeeping department staff use it as a means of safety and security at work **(Mejia *et al.*, 2021).**	giving children autonomy to purchase food and beverages and a security means to prevent minors from accessing certain areas or leaving the ocean without their parents by tying the wrist wristbands with the parents **(Kim *et al.*, 2020).**
5. Virtual Reality (VR): can be defined as the virtual world in the computer environment that enables individuals to get real experiences related to their needs and wants, trips and excursions, destinations to visit and various activities in the targeted destination **(Desai *et al.*, 2014)**.	❁ VR headsets. ❁ VR glasses. ❁ Google Cardboard ❁ VR 360. ❁ Mobile Headsets. ❁ PC-Based Headsets ❁ VR Accessories **(Huang, 2023).**	The virtual reality system offers guests the opportunity to experiment before they book their rooms. After the purchase, it creates a destination experience and offers the opportunity to visit the cultural heritage sites in the destination **(Smart Hotel Technology Guide, 2018)**.
6. Augmented Reality (AR): is a technology in which the interaction between the objects is created by combining the virtual and the real world. As a result	❁ Gamification ❁ R Apps. **(Buhalis *et al.*, 2022).**	Holiday Inn has placed signs for guests. Guests holding their smartphones to these signs encounter realistic virtual depictions of celebrities. A similar application has been developed by best western hotel, this hotel placed signs at certain points for guests' children, and children who read these signs via smartphone or tablet see themselves with Disney characters **(Avi *et al.*, 2021; MM, 2022).**

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of the integration of the objects into the real world, this technology enables synthesis real and virtual image with this technology **(Chung *et al.*, 2015; Ivasciuc, 2020).**		
7. Mixed reality (MR): describes a very realistic augmentation of the real world for users. It is so realistic that users cannot distinguish virtual content from physical objects, providing a seamless experience between real and digitally constructed environments **(Buhalis and Karatay, 2022).**	• Hololens • Google MRCore • Pokemon Go • Interior Decoration Apps • MR Maintenance • Google Street View • Neurosurgery **(Godovykh *et al.*, 2022**)	MR encourages users to experience and interact with hotel services whilst in the real world by integrating engaging ways of narrative to involve guests. It supports the integration of physical and digital displays by projecting digital information in real environments and by displaying items with no material availability, Immersive and holographic interfaces have a wider variety of applications in mixed reality **(Buhalis *et al.*, 2022).**
8. Metaverse : is basically a term used to describe the digital or virtual world, which allows for social interactions, often using an avatar. The leading	• **Nvidia Omniverse** • Roblox • Amicoa Brands • **Fortnite** • **Horizon Worlds** • **Decentraland**	Starting from the reservation process and unique accommodation experiences along with recreational activities, there is a great demand for a different and unique experience. As many of today's travelers are tech-savvy, the metaverse could transform the hospitality industry and redefine the smart guest experience **(Filimonau *et al.*, 2022; Ghare, 2022).**

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technologies associated with the idea of the metaverse are virtual and augmented reality, but video game hardware and blockchain technology can also play a role. The metaverse could transform the hospitality industry and redefine the smart guest experience **(Ghare, 2022).**	❁ **Sandbox (Ghare, 2022)**	
9. Cloud Computing: Cloud computing is a technology that provides flexible, economic, and convenient access to information from anywhere, beyond the classical information technology infrastructure This is made possible with the developments in data transfer bandwidth and processing through the Internet	❁ IBM Cloud ❁ Oracle Cloud ❁ Alibaba Cloud ❁ Microsoft Azure **(Shnurenko *et al.*, 2020**).	Cloud computing has many advantages such as enabling lower-cost computing, reducing IT infrastructure and maintenance costs, upgrading business software quickly, offering unlimited storage capacity, increasing data security, easier group collaboration, universal access to documents and providing access via one device **(Wallace, 2021).**

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(Shnurenko *et al.*, 2020).		
10. Facial Recognition: According to **Xu *et al.* (2020),** Facial recognition technique has been adopted to facilitate tasks for employees in the hotel authentication process to increase the accuracy of authentication of customers and guests' while reducing bottlenecks between them in sensitive areas.	❁ Apple Face ID Facebook Deep Selfie Pay System. **(Ivanov *et al.*, 2017)**	Facial recognition technology is also among such biometric technologies. In the context of the tourism industry, guests take advantage of such technologies **(Morosan, 2020)**. For example, passengers at "Gatwick" Airport in the UK do their own passport controls by scanning their face on a face recognition system **(Kılıçhan and Yilmaz, 2020).**
11. Social media platforms: social media platforms are one of the huge trends that can have a huge impact on the hotel industry. The tourism decision-making behavior of guests has been greatly influenced by the tools and information available on the Internet **(Nong, and Fong 2022)**	❁ Facebook ❁ Blogs ❁ Instagram ❁ YouTube ❁ Twitter (**Ong *et al.*, 2022; Tam *et al.*, 2022**).	Tourists use social media at different stages of travel such as before travel, during travel, and after travel. Social networking sites allow quick, direct, and easy access to information in real-time. Tourists can now not only share information online, but they can also share personal travel experiences and provide feedback through User Generated Content. Tourists share their travel experiences on the Internet by sharing information, their photos, videos, and documents on blogs, commenting and rating services, and places they have visited before **(Tam *et al.*, 2022).**

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Advantages of Artificial Intelligence Techniques in Hotels Industry:

Artificial intelligence techniques have a number of benefits, one of which is that its judgements are backed up by evidence rather than feelings. Even despite our best attempts, it is a well-known reality that our sentiments always influence our decisions in a negative manner **(Sivasubramanian, 2021)**. Improve guests' service AI's ability to accelerate and optimize customer service is one of the main expected benefits of AI and was ranked 2nd among AI objects in a 2019 study by MIT Sloan Management and Boston Consulting **(Chatterjee, 2020)**. Machinery with artificial intelligence techniques , unlike living beings, do not require sleep, which eliminates the fundamental drawback of human fatigue as it works for 24 hours in the hotels **(Sivasubramanian, 2021)**. Knowledge can be disseminated more easily, Helps in repetitive work, and predictive maintenance **(Great Learning Team, 2022).** Can handle demanding and complicated tasks that humans may find difficult or impossible to do, Reduction in human error **(Chatterjee, 2020)**. Digital assistance, when a computer mind has been taught in some way, it can be readily duplicated by other computers, thereby saving time that would have otherwise been spent teaching other humans **(Sivasubramanian, 2021)**. Can most likely perform tasks quickly than a person; Faster decisions, Rational Decision Maker, Improves Security, Efficient Communication **(Great Learning Team, 2022)**. Improve the application The ability of AI to process data in real time means that these companies can monitor them almost instantly. For example, manufacturing plants use image recognition software and machine learning models in their quality control processes to identify and Identify production problems **(Chatterjee, 2020)**. Products develop products quickly artificial intelligence techniques can shorten the development cycle and shorten the time between design and commercial for a faster return on investment in development in the hotel industry **(Sivasubramanian, 2021)**.

Challenges facing Employees' of Apply Artificial Intelligence Techniques in the Egyptian hotel industry:

According to **Ahmed and Mennisi (2021)**, Artificial intelligence techniques is expected to increase the efficiency and productivity of hotel services, but there are many challenges that may pose a hindrance to the application of artificial intelligence techniques such as high costs, lack of skills, and significant changes in organizational structure and hotel culture **(Bhushan, 2021)**. Therefore,

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applications the prospect and integration of artificial intelligence techniques will require future managers and owners to carefully consider the balance between the roles of service artificial intelligence techniques and human employees in the guest experience and nurture a work environment that embraces openness and change (**Kim *et al.*, 2022**). There are many factors that affect the intention of managers to adopt Artificial intelligence techniques in hotels, and these factors are represented in, the cost of adoption, maintenance, and leasing, environmental factors, which are competitive pressure and comparative advantage, organizational practices, and application infrastructure as well as ethical challenges **(Ivanov *et al.*, 2020; Jabeen *et al.*, 2021)**. Since managers' intent to adopt artificial intelligence techniques depends on their innovation or desire for change, marketing campaigns that specifically appeal to innovative hotel leadership must be created to target organizations that are likely candidates to adopt artificial intelligence techniques (**Goel *et al.*, 2022**). Given the long-term implementation, technology vendors must also work alongside educational institutions in the hospitality industry to encourage future generations of hotel management to be more innovative through educational initiatives and programs **(Pizam *et al.*, 2022)**.

Research Methodology:

To achieve the aim of the research, Employees' in different departments in five-star Cairo and Sharm El-Sheikh hotels were surveyed, they are 30 hotels "Represented in the Hilton, Novotel, Sofitel, Rixos, Savoy, Sheraton, Concorde, Meridien, Marriott, Mena House, Movenpick, Semiramis, Intercontinental, Fairmont, ...and others". To set appropriate criteria for selecting hotels, the researcher chose five-star hotels with a hotel brand from a global chain of companies due to the sign of maturity, desire for continuous improvement and competitive advantage. In addition, five-star hotels are distinguished by huge operation, large number of employees, various functions, and outlets. Accordingly, the geographical distribution of hotels, including Cairo and Sharm El Sheikh, was considered. The selected sample are hotel brands around the world. Accordingly, the study relied on a new strategy in order to focus on awareness activities about artificial intelligence techniques and know the challenges facing their application because the possibility of applying artificial

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intelligence techniques in such companies is greater than any other hotel brand in Egypt. **(Chamber of Hotel Establishments, 2021)**. The sample equation was applied to unlimited society **(Thompson, 2012)** as follows:

$$n = \frac{N \times P(1-P)}{\{N-1 \times (d^2 \div Z^2)\} + P(1-P)\}}$$

N:Sample size, P: Percentage of the purpose of this study 0.50 , d: Percentage of the error limit allowed 0.05 , Z:The standard degree used for giving general results is 95%. Thus, the standard degree = 1.96

$$\mathbf{N} = \frac{\mathbf{500000 \times 0.50(1-0.50)}}{\{\mathbf{500000-1 \times (0.05^2 \div 1.96^2) + 0.05\,(1-0.50)}\}}$$

$$= \frac{\mathbf{125.500}}{\mathbf{325.63}} \times \mathbf{100} = \mathbf{385.40} \simeq \mathbf{385}$$

The population of the study is unlimited due to the difficulty of determining a specific number of employees' in Egyptian hotels, so the random sample size is an ideal method to apply in this study. According to **Thompson, (2012)** the lower limit of respondents, that are suitable in this study is 385. A number of **400** electronic questionnaires were designed and distributed from **2** April 2022 to **25** October 2022. The questionnaire consisted of four sections. The first section is intended to reveal the employees' demographic data and objective data. The second section intended to the Applicability of artificial intelligence techniques in Egyptian hotels "Current Status and Prospective" (**20** statements). The third section included The Advantages of Adopting the Application of Artificial Intelligence Techniques in Egyptian Hotels (**15** statements). The fourth section included of The Challenges Facing Applying Artificial Intelligence Techniques in the Egyptian Hotels Industry (**25** statements). This questionnaire is based on the theoretical part of the research, and it was presented to a group of specialists in scientific research arbitration, and they approved the validity of its use. The respondents were asked to answer these statements by using a five-point Likert-type scale (Strongly agree = 5, agree =4, don't know = 3, disagree = 2 and, strongly disagree = 1) to determine the levels of agreement with the statements investigated. The Statistical Package for the Social Sciences (SPSS) version **29.0** was used to analyze and compute the collected data. for windows is used to analyze the valid forms. Among its many modules for statistical data analysis, including descriptive statistics such as frequencies, and categorical data analysis. With the exception of the open-ended questions, Frequency counts, percentage

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distributions. The range of each level of agreement was calculated as follow:

Table 2: Questions Answered Scale

Category	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Scale	1	2	3	4	5
Rang	1 – 1.80	1.81 – 2.60	2.61 – 3.40	3.41 – 4.20	4.21 - 5

Reliability Analysis

Table 3: Reliability Analysis

N	Dimensions	Number of Statements	Alpha
1	The applicability of artificial intelligence techniques in Egyptian hotels (The current status).	**20**	**0.95**
2	The applicability of artificial intelligence techniques in Egyptian hotels (The Prospective status).		**0.96**
3	Advantages of adopting the application of artificial intelligence techniques in Egyptian hotels.	**15**	**0.95**
4	Challenges Facing Applying Artificial Intelligence techniques in the Egyptian hotel Industry.	**11**	**0.95**
Alpha Cronbach's test for all Dimensions.		**46**	**0.96**

According to what was mentioned in the previous table No.**3** that the alpha coefficient of the four dimensions of the questionnaire is more than **0.70**, which is a very good indicator of the reliability of the statements of dimensions and the possibility of using these statements (**Pallant, 2016**), as the Alpha Cronbach coefficient for the dimensions reached (**0.96**), which is an acceptable rate.

Results and discussion

The results involved three main stages. Descriptive analysis was used to discover participants' responses, variance analysis for respondents' answers, correlation analysis, and regression were conducted to examine the relationship between independent variables and dependent variable. The results obtained were computed and analyzed in the following tables.

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Table 4: Demographic Data of Guests.

Demographic Data	Attribute	Statistics	
		Freq.	%
Gender	Male	354	88.5
	Female	46	11.5
Total		**400**	**100**
Age	Less than 30 years	175	43.8
	From 30 – Less than 40 years	120	30
	From 40 years - Less than 50 years	61	15.3
	From 50 years and over	44	11
Total		**400**	**100**
Educational level	Vocational or Technical School	96	24
	Bachelor's Degree	224	56
	Postgraduate (Diploma - Master – Ph.D.)	80	20
Total		**400**	**100**
Years of Experience	Less than 5 years	85	21.3
	From 5 – Less than 10 years	144	36
	10 years and over	171	42.8
Total		**400**	**100**
Job	Engineering and Maintenance	56	14
	Rooms Division	111	27.8
	Food and Beverage	159	39.8
	Information Technology	70	17.5
	Human Resources	4	1
Total		**400**	**100**

The results in table No.**4** indicate that from of the 400 respondents, only 46 were females 11.5 %, while the vast majority of respondents were males, 354 by (88.5%).

According to age group, among the **400** respondents, 43.8% belong to the age group less than 30.0 % years; this was followed by age group for 30 – Less than

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40 years by 30%, followed by those 40 years - Less than 50 years old with 15.3%; finally, those whose ages ranged from 50 years and over was the smallest and presented by (11.0%). Regarding the educational level, it could be noticed that a high percentage of the tested sample 224 by (56%) were a bachelor's degree, 96 were from vocational or technical schools by (24%), and 80 were graduate students (Diploma - Master – Ph.D.) by (20%), as shown in Table No. **4**.The results also showed that the years of experience of the majority of respondents (42.8%) were10 years and more, while 36.0% was 5 - less than 10 years of experience. Respondents less than 5 years old were the youngest group, accounting for (21.3%). According to what was mentioned in the previous table No. **4**, out of 400 respondents, 156 participants (39.8%) worked in the Food and Beverage department, and 111 participants (27.8%) worked in the Rooms Division. Followed by the Information Technology department with 70 (17.5%), the Engineering and Maintenance department with 56 (14%), and finally the Human Resources department and the respondents were the smallest group and represented 4 by (1%).

Table 5: How interested would the hotel in contributing to the formation of a smart travel experience for Guests?

Answers	Freq.	%
Very interested	81	20.3
Hardly interested	209	52.3
Not at all interested	110	27.5
Total	**400**	**100.0**

The tabulated data shows that most respondents who work in Egyptian hotels confirmed their interest when expressing their opinion on the extent to which Egyptian hotels contribute to creating a smart travel experience for guests, with the highest percentage of those who said Hardly interested represented 52.3 %. Followed by 27.5% who said not at all interested, while 20.3 % expressed their opinion as Very interested.

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Table 6: Please, say to what extent you think Artificial Intelligence Techniques will make a difference in the hotel sector in terms of the service provided to Guests?

Answers	Freq.	%
Make many	265	66.3
Make a few	110	27.5
Make none	25	6.3
Total	**400**	**100.0**

The tabulated data shows the respondents who work in Egyptian hotels about expressing their opinion on the impact of artificial intelligence techniques on the quality of services provided to guests and the differences that they can make on the Egyptian hotel sector, where the highest percentage was 66.3% for those who said that it is Make many. It is followed by 27.5% who say it is Make a few, while 6.3% say it is Make none.

Table 7: What are the most common obstacles facing hotelier in using artificial intelligence Techniques in the hotel?

Answers	Freq.	%
Lack of skills	152	38
High cost	169	42.3
Data loss	45	11.3
Vague laws and regulations	26	6.5
Infrastructure	8	2
Total	**400**	**100.0**

Based on the previous table No. **7**, it is clear that 169 respondents (42.3%) indicated that the cost barrier is the most important obstacle that hotel owners face regarding the application of AI techniques. 152 participants (38%) indicated that the lack of skills among hotel workers in terms of dealing with and maintaining technologies is a very big obstacle for hotel owners, which requires training for workers and reliance on experts from abroad. While 45 respondents (11.3%) indicated that data loss is one of the most important obstacles caused by artificial intelligence due to its control over a huge amount of big data. Also, 26 of the respondents (6.5%) mentioned vague laws and regulations when adopting artificial intelligence techniques. Finally, 8 respondents (2%) indicated that infrastructure is an obstacle for hotel owners to adopt artificial intelligence techniques.

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Table 8: Do you think AI techniques can replace employees' duties and/or human employees themselves?

Answers	Freq.	%
Yes	64	16
To some extent	286	71.5
No	50	12.5
Total	**400**	**100.0**

According to the previous table No. 8, it becomes clear how likely it is that artificial intelligence techniques will perform the tasks and duties of employees or human employees themselves. Where 286 respondents (71.5%) indicated neutrality in the possibility of artificial intelligence techniques replacing humans, while 64 respondents (16%) indicated approval of the possibility of artificial intelligence techniques performing the tasks and duties of humans. Finally, 50 respondents (12.5%) indicated their disapproval of the possibility of intelligent machines and techniques performing human tasks in Egyptian hotels.

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Table 9: The Applicability of Artificial Intelligence Techniques in Egyptian Hotels:

The Current Status									Statements	The Prospective Status								
Statistics			5-Point Likert - Scale								5-Point Likert - Scale					Statistics		
R	SD	Mean	5	4	3	2	1				1	2	3	4	5	Mean	SD	R
8	1.147	2.67	22	79	116	110	73	Freq.	1. Artificial intelligence techniques are used to provide personalized service to hotel guests.	Freq.	9	25	107	185	74	3.72	.912	18
			5.5	19.8	29.0	27.5	18.3	%		%	2.3	6.3	26.8	46.3	18.5			
10	1.138	2.35	16	65	61	158	100	Freq.	2. There is a noticeable progress in your hotel towards the application of artificial intelligence techniques.	Freq.	7	27	94	203	69	3.75	.880	16
			4.0	16.3	15.3	39.5	25.0	%		%	1.8	6.8	23.5	50.8	17.3			
18	1.060	1.85	14	28	30	138	190	Freq.	3. The hotel has automated robotics techniques and smart chatbots to facilitate communication with hotel guests.	Freq.	12	34	101	181	72	3.67	.967	19
			3.5	7.0	7.5	34.5	47.5	%		%	3.0	8.5	25.3	45.3	18.0			
14	1.030	1.92	12	31	32	163	162	Freq.	4. The hotel has an independent department to follow the technical development of AI techniques and understand and implement its benefits.	Freq.	6	32	82	188	92	3.82	.927	10
			3.0	7.8	8.0	40.8	40.5	%		%	1.5	8.0	20.5	47.0	23.0			
20	1.050	1.78	8	36	29	112	215	Freq.	5. There are hotel transactions with Blockchain technology to automate operations and accounting for revenue.	Freq.	26	71	123	112	68	3.31	1.142	20
			2.0	9.0	7.3	28.0	53.8	%		%	6.5	17.8	30.8	28.0	17.0			
2	1.381	3.21	78	128	60	66	68	Freq.	6. Artificial intelligence techniques are used to help hotel staff perform their works.	Freq.	10	21	74	209	86	3.85	.903	9
			19.5	32.0	15.0	16.5	17.0	%		%	2.5	5.3	18.5	52.3	21.5			
1	1.323	3.31	73	158	44	71	54	Freq.	7. The hotel has smart phone applications such as using it as a digital key for hotel rooms.	Freq.	5	25	58	213	99	3.94	.868	5
			18.3	39.5	11.0	17.8	13.5	%		%	1.3	6.3	14.5	53.3	24.8			
12	1.092	2.11	12	44	57	148	139	Freq.	8. There is a use of I-Beacon technology as the hotel's promotional tool.	Freq.	13	39	81	169	98	3.75	1.034	17
			3.0	11.0	14.3	37.0	34.8	%		%	3.3	9.8	20.3	42.3	24.5			
9	1.213	2.37	20	68	69	124	119	Freq.	9. Guests can use their mobile devices to control all the functions inside the smart hotel room.	Freq.	6	29	67	189	109	3.92	.927	6
			5.0	17.0	17.3	31.0	29.8	%		%	1.5	7.3	16.8	47.3	27.3			
16	.968	1.89	11	22	35	175	157	Freq.	10. There are robots that serve food and beverages and deliver orders and towels to hotel guests in their rooms.	Freq.	11	41	72	186	90	3.76	1.003	14
			2.8	5.5	8.8	43.8	39.3	%		%	2.8	10.3	18.0	46.5	22.5			
19	.974	1.84	12	24	18	179	167	Freq.	11. The hotel has a concierge robot that receives and interacts with guests and robotic chefs who prepare food and beverages for guests inside the hotel.	Freq.	15	42	72	168	103	3.76	1.067	15
			3.0	6.0	4.5	44.8	41.8	%		%	3.8	10.5	18.0	42.0	25.8			
11	1.094	2.17	12	43	77	136	132	Freq.	12. The hotel enhances guest check-in with its facial recognition technology, allowing guests to bypass the front lines at the front desk and complete registration forms.	Freq.	V	34	56	191	112	3.92	.955	7
			3.0	10.8	19.3	34.0	33.0	%		%	1.8	8.5	14.0	47.8	28.0			

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			Continued Table 20: The applicability of artificial intelligence techniques in Egyptian Hotels:																	
13	1.038	1.93	10	38	27	162	163	**Freq.**	13. There is use of metaverse technology to provide an interactive hotel room experience or an authentic local and cultural experience for guests before they arrive and while they are at the hotel	**Freq.**	14	40	70	175	101	3.77	1.046	13
			2.5	9.5	6.8	40.5	40.8	**%**		**%**	3.5	10.0	17.5	43.8	25.3			
15	1.040	1.90	13	31	26	161	169	**Freq.**	14. There is a use of virtual reality by imagining that you are "in" a hotel room a mile away even before guests decide whether to book or not.	**Freq.**	11	44	56	183	106	3.82	1.031	11
			3.3	7.8	6.5	40.3	42.3	**%**		**%**	2.8	11.0	14.0	45.8	26.5			
17	1.039	1.89	14	26	34	155	171	**Freq.**	15. Mixed reality is being used to improve the experience and interaction of hotel services in the real world by incorporating engaging narrative methods to engage guests in real environments within the hotel.	**Freq.**	14	41	59	173	113	3.82	1.062	12
			3.5	6.5	8.5	38.8	42.8	**%**		**%**	3.5	10.3	14.8	43.3	28.3			
5	1.198	3.07	48	106	125	69	52	**Freq.**	16. There is a use of near field communication technology to operate the automatic Wi-Fi and ease the payment process for guests.	**Freq.**	5	19	43	201	132	4.09	.857	1
			12.0	26.5	31.3	17.3	13.0	**%**		**%**	1.3	4.8	10.8	50.3	33.0			
6	1.153	2.75	29	74	133	97	67	**Freq.**	17. There is a use of wireless charging technology to charge guests' phones without the need for charger cables.	**Freq.**	7	18	54	194	127	4.04	.889	4
			7.3	18.5	33.3	24.3	16.8	**%**		**%**	1.8	4.5	13.5	48.5	31.8			
4	1.180	3.15	51	123	99	90	37	**Freq.**	18. There is use of cloud computing technology for increased data security, easier team collaboration, comprehensive access to documents, and provision of access through a single device.	**Freq.**	8	19	53	179	141	4.06	.924	3
			12.8	30.8	24.8	22.5	9.3	**%**		**%**	2.0	4.8	13.3	44.8	35.3			
7	1.179	2.71	29	74	123	99	75	**Freq.**	19. There is use of smart IoT techniques (such as digital kiosks, smart rooms, electronic dining table, 3DHT hologram technology) that improve guests experience at all stages of the guest cycle inside the hotel.	**Freq.**	5	19	43	201	132	4.09	.857	2
			7.3	18.5	30.8	24.8	18.8	**%**		**%**	1.3	4.8	10.8	50.3	33.0			
3	1.229	3.19	65	109	102	83	41	**Freq.**	20. The hotel has drones Technique as it is used to deliver food requests to guests anywhere in the hotel, and to take videos and photos of guests from places where it is difficult to photograph with a regular camera, in addition to its great role in saving guests from drowning.	**Freq.**	7	34	56	191	112	3.92	.955	8
			16.3	27.3	25.5	20.8	10. 3	**%**		**%**	1.8	8.5	14.0	47.8	28.0			
--	**.788**	**2.40**	**General Gross and Standard Deviation**															**3.83**	**.734**	--

N= 400 N.B: 1= "Strongly Disagree", 2= "Disagree", 3= "Neutral", 4= "Agree", 5= "Strongly Agree", SD: "Standard Deviation", R= Ranking.

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Based on the tabulated data in Table No. **9**, it could be noticed that the respondents' perceptions towards the **current state** of applying artificial intelligence techniques in Egyptian hotels show that respondents agreed with five out of twenty statements. These statements were as follows:

- "The hotel has smart phone applications such as using it as a digital key for hotel rooms **(Mean= 3.31)**".
- "Artificial intelligence techniques are used to help hotel staff perform their works **(Mean= 3.21)**".
- "The hotel has drones Technique as it is used to deliver food requests to guests anywhere in the hotel, and to take videos and photos of guests from places where it is difficult to photograph with a regular camera, in addition to its great role in saving guests from drowning **(Mean= 3.19)**".
- "There is use of cloud computing technology for increased data security, easier team collaboration, comprehensive access to documents, and provision of access through a single device **(Mean= 3.15)**".
- "There is a use of near field communication technology to operate the automatic Wi-Fi and ease the payment process for guests **(Mean= 3.07)**".

Meanwhile, the answers of respondents were **natural** toward three statements of twenty statements. These statements were as follows:

- "There is a use of wireless charging technology to charge guests' phones without the need for charger cables **(Mean= 2.75)**".
- There is use of smart IoT techniques (such as digital kiosks, smart rooms, electronic dining table, 3DHT hologram technology) that improve guests experience at all stages of the guest cycle inside the hotel **(Mean= 2.71)**".
- Artificial intelligence techniques are used to provide personalized service to hotel guests **(Mean= 2.67)**".

According to table No. **9**, The respondents disagreed toward twelve statements of twenty statements as follows:

- "Guests can use their mobile devices to control all the functions inside the smart hotel room **(Mean= 2.37)**".
- "There is a noticeable progress in your hotel towards the application of artificial intelligence techniques **(Mean= 2.35)**".
- "The hotel enhances guest check-in with its facial recognition technology, allowing guests to bypass the front lines at the front desk and complete registration forms **(Mean= 2.17)**".

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- "There is a use of I-Beacon technology as the hotel's promotional tool **(Mean= 2.11)**".
- "There is use of metaverse technology to provide an interactive hotel room experience or an authentic local and cultural experience for guests before they arrive and while they are at the hotel **(Mean= 1.93)**".
- "The hotel has an independent department to follow the technical development of AI techniques and understand and implement its benefits **(Mean= 1.92)**".
- "There is a use of virtual reality by imagining that you are "in" a hotel room a mile away even before guests decide whether to book or not **(Mean= 1.90)**".
- "There are robots that serve food and beverage and deliver orders and towels to hotel guests in their rooms **(Mean= 1.89)**".
- "The hotel has automated robotics techniques and smart chatbots to facilitate communication with hotel guests **(Mean= 1.85)**".
- "The hotel has a concierge robot that receives and interacts with guests and robotic chefs who prepare food and beverages for guests inside the hotel **(Mean= 1.84)**".
- "There are hotel transactions with Blockchain technology to automate operations and accounting for revenue **(Mean= 1.78)**".

According to Table No. **9**, with regard to the perceptions of the investigated respondents towards **prospective status** of the applicability of artificial intelligence techniques in Egyptian hotels, the respondents prospected to the applicability of artificial intelligence techniques in Egyptian hotels which are arranged according to their means as follows:

- There is a use of near field communication technology to operate the automatic Wi-Fi and ease the payment process for guests **(Mean= 4.09)**".
- There is use of smart IoT techniques (such as digital kiosks, smart rooms, electronic dining table, 3DHT hologram technology) that improve guests experience at all stages of the guest cycle inside the hotel **(Mean= 4.09)**".
- There is use of cloud computing technology for increased data security, easier team collaboration, comprehensive access to documents, and provision of access through a single device **(Mean= 4.06)**".
- There is a use of wireless charging technology to charge guests' phones without the need for charger cables **(Mean= 4.04)**".
- The hotel has smart phone applications such as using it as a digital key for hotel rooms **(Mean= 3.94)**".
- Guests can use their mobile devices to control all the functions inside the smart

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hotel room **(Mean= 3.92)**".

- The hotel has drones Technique as it is used to deliver food requests to guests anywhere in the hotel, and to take videos and photos of guests from places where it is difficult to photograph with a regular camera, in addition to its great role in saving guests from drowning **(Mean= 3.92)**".
- Artificial intelligence techniques are used to help hotel staff perform their work **(Mean= 3.85)**".
- The hotel has an independent department to follow the technical development of AI techniques and understand and implement its benefits **(Mean= 3.82)**".
- There is use of metaverse technology to provide an interactive hotel room experience or an authentic local and cultural experience for guests before they arrive and while they are at the hotel **(Mean= 3.77)**".
- The hotel has a concierge robot that receives and interacts with guests and robotic chefs who prepare food and beverages for guests inside the hotel **(Mean= 3.76)**".
- There is a noticeable progress in your hotel towards the application of artificial intelligence techniques **(Mean= 3.75)**".
- There is a use of I-Beacon technology as the hotel's promotional tool **(Mean= 3.75)**".
- Artificial intelligence techniques are used to provide personalized service to hotel guests **(Mean= 3.72)**".
- The hotel has automated robotics techniques and smart chatbots to facilitate communication with hotel guests **(Mean= 3.67)**".

Meanwhile, the answers of respondents were **natural** toward one statement of twenty statements to the applicability of artificial intelligence techniques in Egyptian hotels. These statements were as follows:

- There are hotel transactions with Blockchain technology to automate operations and accounting for revenue **(Mean= 3.31)**".

Accordingly, table No. 9 shows the general gross of respondents toward the current status of the applicability of artificial intelligence techniques in Egyptian hotels to some extent with average **(Mean= 2.40)**. Furthermore, the prospective status of the applicability of artificial intelligence techniques in Egyptian hotels with an average **(Mean= 3.83)**. This result means that respondents preferred to apply artificial intelligence techniques in Egyptian hotels in the future.

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Table 10: The Advantages of Adopting the Application of Artificial Intelligence Techniques in Egyptian Hotels.

Statements		The Prospective Status							
		5-Point Likert - Scale					Statistics		
		1	2	3	4	5	Mean	SD	R
1. Artificial intelligence techniques improve the guest experience at all stages of the guest's journey.	**Freq.**	12	27	81	185	95	3.81	.973	11
	%	3.0	6.8	20.3	46.3	23.8			
2. AI techniques improve hotel guest response and service time and decrease problem-solving time.	**Freq.**	13	20	90	205	70	3.75	.914	15
	%	3.3	5.0	23.0	51.3	17.5			
3. AI techniques help to present guests with highly relevant offers and services at the right time.	**Freq.**	11	26	98	172	93	3.77	.968	14
	%	2.8	6.5	24.5	43.0	23.3			
4. Artificial intelligence techniques help improve business processes and increase employee productivity.	**Freq.**	8	28	91	182	91	3.80	.937	13
	%	2.0	7.0	22.8	45.5	22.8			
5. AI techniques help to carry out green practices that are environmentally friendly.	**Freq.**	7	29	85	190	89	3.81	.922	12
	%	1.8	7.3	21.3	47.5	22.3			
6. The use of artificial intelligence techniques facilitates the administrative procedures and processes in hotels.	**Freq.**	4	27	74	188	107	3.92	.899	5
	%	1.0	6.8	18.5	47.0	26.8			
7. The use of artificial intelligence techniques increases the technological skills, creative thinking and problem-solving skills of employees.	**Freq.**	9	23	63	200	105	3.92	.921	6
	%	2.3	5.8	15.8	50.0	26.3			
8. Artificial intelligence techniques help maintain big data in the event of any natural disasters or fires in the hotel facility.	**Freq.**	10	22	64	192	112	3.94	.940	4
	%	2.5	5.5	16.0	48.0	28.0			
9. Artificial intelligence techniques ensure that some information is encrypted, and the availability and powers of each individual in the hotel establishment are determined.	**Freq.**	13	16	76	181	114	3.92	.961	7
	%	3.3	4.0	19.0	45.3	28.5			
10. The use of artificial intelligence techniques improves the quality-of-service performance in hotels.	**Freq.**	11	20	71	186	112	3.92	.949	8
	%	2.8	5.0	17.8	46.5	28.0			
11. AI techniques reduce hotel operating costs.	**Freq.**	7	27	72	188	106	3.90	.930	10
	%	1.8	6.8	18.0	47.0	26.5			
12. The ability of artificial intelligence techniques to start work at any time and from anywhere without boredom or fatigue.	**Freq.**	13	21	59	185	122	3.96	.977	2
	%	3.3	5.3	14.8	46.3	30.5			
13. The use of artificial intelligence techniques enhances the impartiality of individuals and transparency in the performance of work, unlike some humans, which reduces job burnout in hotels.	**Freq.**	11	23	67	190	109	3.91	.955	9
	%	2.8	5.8	16.8	47.5	27.3			
14. The ability of artificial intelligence techniques to adapt and be flexible in changing according to the goals and business required in hotels.	**Freq.**	9	17	73	187	114	3.95	.916	3
	%	2.3	4.3	18.3	46.8	28.5			
15. AI techniques could perform routine work repetitively quickly and efficiently.	**Freq.**	8	14	70	197	111	3.97	.880	1
	%	2.0	3.5	17.5	49.3	27.8			
General Gross and Standard Deviation							**3.88**	**.744**	--

N= 400 N.B: 1= "Strongly Disagree", 2= "Disagree", 3= "Neutral", 4= "Agree", 5= "Strongly Agree", SD: "Standard Deviation", R= Ranking.

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Based on Table No. (**10**), it could be noticed that the answers of investigated respondents towards the advantages of applying artificial intelligence techniques in Egyptian hotels these days (in the digital age), all data was agreement by the respondents. These statements were as follows according to the mean:

- "AI techniques could perform routine work repetitively quickly and efficiently (**Mean= 3.97**)".
- "The ability of artificial intelligence techniques to start work at any time and from anywhere without boredom or fatigue (**Mean= 3.96**)".
- "The use of artificial intelligence techniques increases the technological skills, creative thinking and problem-solving skills of employees (**Mean= 3.92**)".
- "The use of artificial intelligence techniques enhances the impartiality of individuals and transparency in the performance of work, unlike some humans, which reduces job burnout in hotels (**Mean= 3.91**)".
- "AI techniques reduce hotel operating costs (**Mean= 3.90**)".
- "Artificial intelligence techniques improve the guest experience at all stages of the guest's journey (**Mean= 3.81**)".
- "AI techniques improve hotel guest response and service time and decrease problem-solving time. (**Mean= 3.75**)".

According to Table No. (**10**), the overall total of respondents about the advantages of applying artificial intelligence techniques and smart technology in Egyptian hotels was average (**Mean= 3.88**). These findings are consistent with a study by ***MIT Sloan Management and Boston Consulting*** showing that AI technologies have the potential to improve guest service as one of the main expected benefits of AI (**Chatterjee, 2020**). The results also matched that AI techniques can develop services provided to guests at the speed of AI, shorten the development cycle and shorten the time between design and commercial advertising for a faster return on investment in hotel development (**Sivasubramanian, 2021; Great Learning Team, 2022**).

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Table 11: The Technical Challenges Facing Applying Artificial Intelligence Techniques in the Egyptian Hotels Industry

Statements	The Prospective Status								
		5-Point Likert - Scale					Statistics		
		1	2	3	4	5	Mean	SD	R
1. Computational and algorithmic bias when using data to teach a machine learning system the implicit values of humans involved in data collection, selection, or use.	**Freq.**	9	31	100	174	86	3.74	.956	5
	%	2.3	7.8	25.0	43.5	21.5			
2. Lack of local companies specialized in manufacturing and maintaining accessories for Artificial Intelligence Techniques and after-sales services.	**Freq.**	6	29	88	205	72	3.77	.880	4
	%	1.5	7.3	22.0	51.3	18.0			
3. Lack of knowledge, scientific, and technical skills in the workforce, and dearth of talent.	**Freq.**	4	21	87	198	90	3.87	.853	1
	%	1.0	5.3	21.8	49.5	22.5			
4. The difficulty of maintaining and repairing artificial intelligence techniques in the event of malfunctions.	**Freq.**	4	23	87	214	72	3.82	.828	3
	%	1.0	5.8	21.8	53.5	18.0			
5. The occurrence of data silos and complexity when data is not collected in one place and instead is isolated between different systems, to the detriment of market coverage, data quality and accuracy.	**Freq.**	6	19	81	212	82	3.86	.846	2
	%	1.5	4.8	20.3	53.0	20.5			
General Gross and Standard Deviation							**3.81**	**.697**	--

N= 400 N.B: 1= "Strongly Disagree", 2= "Disagree", 3= "Neutral", 4= "Agree", 5= "Strongly Agree", SD: "Standard Deviation", R= Ranking.

According to tabulated data in table No **11**, it could be noticed that the answers of investigated respondents towards the technical/technological challenges tended to the agreement on all statements. These statements were as follows according to the mean:

- "Lack of knowledge, scientific, and technical skills in the workforce, and dearth of talent **(Mean= 3.87)**".
- "The occurrence of data silos and complexity when data is not collected in one place and instead is isolated between different systems, to the detriment of market

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coverage, data quality and accuracy **(Mean= 3.86)**".

- "The difficulty of maintaining and repairing artificial intelligence techniques in the event of malfunctions **(Mean= 3.82)**".
- "Lack of local companies specialized in manufacturing and maintaining accessories for Artificial Intelligence Techniques and after-sales services **(Mean= 3.77)**".
- "Computational and algorithmic bias when using data to teach a machine learning system the implicit values of humans involved in data collection, selection, or use **(Mean= 3.74)**". This result agrees with (**Gretzel *et al.*, 2015; Samara, 2017; Chen, 2022**) who mentioned that Computational and algorithmic bias when using data to teach a machine learning system the implicit values of humans involved in data collection, selection, or use is considered one of the most technical and technological challenges.

The general gross of respondents about the technical and technological challenges facing Applicability of Artificial Intelligence Techniques in Egyptian Hotels was with average **(Mean= 3.81)**.

Table 12: The Financial and Business Challenges Facing Applying Artificial Intelligence Techniques in the Egyptian Hotels Industry**.**

Statements		The Prospective Status							
		5-Point Likert - Scale					Statistics		
		1	2	3	4	5	Mean	SD	R
1. Increased and overruns primary costs for using Artificial Intelligence Techniques.	Freq.	14	23	86	171	106	3.83	.999	4
	%	3.5	5.8	21.5	42.8	26.5			
2. Lack of funding for Artificial Intelligence Techniques projects.	Freq.	3	29	87	200	81	3.82	.864	6
	%	.8	7.3	21.8	50.0	20.3			
3. The long-term investment returns from Artificial Intelligence Techniques.	Freq.	4	33	81	190	92	3.83	.909	5
	%	1.0	8.3	20.3	47.5	23.0			
4. Cost overruns maintenance and repair costs for artificial intelligence techniques.	Freq.	10	25	86	177	102	3.84	.960	3
	%	2.5	6.3	21.5	44.3	25.5			
5. Building and repairing AI is very costly in terms of money and time.	Freq.	3	25	73	211	88	3.89	.842	2
	%	.8	6.3	18.3	52.8	22.0			
6. Lack of financial readiness to adopt modern artificial intelligence techniques such as Metaverse technology.	Freq.	4	27	74	197	98	3.90	.884	1
	%	1.0	6.8	18.5	49.3	24.5			
General Gross and Standard Deviation							**3.85**	**.757**	-

N= 400 N.B: 1= "Strongly Disagree", 2= "Disagree", 3= "Neutral", 4= "Agree", 5= "Strongly Agree", SD: "Standard Deviation", R= Ranking.

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According to tabulated data in table No **12**, it could be noticed that the answers of investigated respondents towards the Financial and Business challenges tended to the agreement on all statements. These statements were as follows according to the mean:

- "Lack of financial readiness to adopt modern artificial intelligence techniques such as Metaverse technology **(Mean= 3.90)**".
- "Building and repairing AI is very costly in terms of money and time **(Mean= 3.89)**".
- "Cost overruns maintenance and repair costs for artificial intelligence techniques **(Mean= 3.84)**".
- "Increased and overruns primary costs for using Artificial Intelligence techniques **(Mean= 3.83)**".
- "The long-term investment returns from Artificial Intelligence Techniques **(Mean= 3.83)**".
- "Lack of funding for Artificial Intelligence Techniques projects **(Mean= 3.83)**".

The general gross of respondents about the Financial and Business challenges facing Applicability of Artificial Intelligence Techniques in Egyptian Hotels was with average (**Mean= 3.85**).

Testing hypotheses

Hypothesis1: The Challenges Facing Applying artificial intelligence techniques on Egyptian hotels have a significant effect Current Status on the applicability it in Egyptian hotels.

Table 13**:** Correlation Coefficieny H.1.

Nonparametric Test			**The Challenges**	**Current Status on the applicability it in Egyptian hotels**
Spearman	**The Challenges**	Correlation Coefficient	1.00	-0.118-*
		Sig. (2-tailed)	0	0.018
		N	400	400
	Current Status on the applicability it in Egyptian hotels.	Correlation Coefficient	-0.118-*	1.00
		Sig. (2-tailed)	0.018	0
		N	400	400

Correlation is significant at the 0.05 level and less, * = Highly significant at P ≤ 0.05

According to the results in the previous table no. **27**, there is a negative correlation among The Challenges Facing Applying artificial intelligence techniques on Egyptian hotels and Current Status on the applicability artificial intelligence

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techniques it in Egyptian hotels; when the correlation coefficiency of spearman is (**Corr= -0.118-***), it is a negative correlation. This result indicates that the greater the challenges facing the application of artificial intelligence techniques in Egyptian hotels, the less the possibility of the current application of artificial intelligence techniques and smart technology in Egyptian hotels and vice versa. Thus, the first hypothesis **H.corr.1 could be accepted**.

To determine the effect, the researchers use the simple regression index, which is a measure of the quality of the relationship between two variables in the form of a significant relationship.

Table 14: The Simple Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.052[a]	0.003	0.000	0.788

* = Highly significant at P≤ 0.05

According to tabulated data in table.**14**, we find that R Square has a value of **0.003** while the Adjusted R Square was **0.000**, which indicates a decrease in the difference between them at a standard error of **0.788**, as it emphasizes the quality and accuracy of the results, and accordingly we can say that the independent variable is (The Challenges Facing Applying artificial intelligence techniques on Egyptian hotels) explains **0.000** Nothing of the changes in the dependent variable, which is (Current Status on the applicability artificial intelligence techniques, it in Egyptian hotels).

Hypothesis 2: Determining the advantages of investing in the use of artificial intelligence techniques in Egyptian hotels have a significant effect on Increasing perception towards the application of artificial intelligence techniques in the prospective.

Table 15: Correlation Coefficieny H.2.

Nonparametric Test			The Advantages	prospective Status on the applicability it in Egyptian hotels
Spearman	The Advantages	Correlation Coefficient	1.00	0.588**
		Sig. (2-tailed)	0	0.000
		N	400	400
	prospective Status on the applicability it in Egyptian hotels.	Correlation Coefficient	0.588**	1.00
		Sig. (2-tailed)	0.000	0
		N	400	400

****Correlation is significant at the 0.01 level, **H. S= High significant at the ≤ (. 01) level**

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Based on the results in the previous table **15**, there is a positive correlation among the advantages that result from the use of artificial intelligence techniques and prospective Status on the applicability it in Egyptian hotels; when the correlation coefficiency of spearman is (**Corr= 0.588****), it is a positive correlation. This result indicates that the more advantages that result from the use of artificial intelligence techniques, the more the prospective Status on the applicability it in Egyptian hotels and vice versa. Thus, the second hypothesis **H.corr.2 could be accepted**.

To determine the effect, the researchers use the simple regression index, which is a measure of the quality of the relationship between two variables in the form of a significant relationship.

Table 16: The Simple Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.666[a]	0.444	0.442	0.555

* = Highly significant at P≤ 0.05

Through table.**16**, we find that R Square has a value of **0.444** while the Adjusted R Square was **0.442**, which indicates a decrease in the difference between them at a standard error of **0.555**, as it emphasizes the quality and accuracy of the results, and accordingly we can say that the independent variable is (the advantages that result from the use of artificial intelligence techniques in Egyptian hotels) explains **44.2%** of the changes in the dependent variable, which is (prospective Status on the applicability of artificial intelligence techniques it in Egyptian hotels).

Hypothesis 3: There are significant differences on 0.05 degree among the perceptions of the investigated respondents towards the applicability of artificial intelligence techniques in Egyptian hotels refers to some demographic data.("H .3.1" Current Status referring to the level of education, " H .3.2" Current Status referring to the years of experience, " H .3.3" Prospective Status referring to the level of education, " H .3.4" Prospective Status referring to the years of experience).

Table 17: Differences among Respondents' Responses towards The Current Status on the applicability of Artificial Intelligence Techniques in Egyptian hotels according to Educational Level.

Item	Categories	Ranks		Test Statistics		
		N	Mean Rank	(x2)	p.value	Sig
The Current Status on the applicability of Artificial intelligence techniques in Egyptian hotels	Vocational or technical school	96	128.43	50.08	0.000	H.S
	Bachelor's degree	224	219.37			
	Postgraduate (Diploma-Master–Ph.D.)	80	234.15			

*Significant at P≤ 0.05, **H.S= High Significant, X2=Chi-Square

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The results in table No. **31** show that, with regard to Educational Level, there was a significant difference among the respondents' answers about the Current Status on the applicability of Artificial Intelligence Techniques in Egyptian hotels (**P < 0.05**) in all statements where the value of (**p.value=0.000**). Concerning this result, it could be accepted the hypothesis **H.3.1**. which refers to there are significant differences on **0.05** the degree between the Current Status on the applicability of artificial intelligence techniques in Egyptian hotels according to Educational Level **could be accepted**.

Table 17: Differences among Respondents' Responses towards The Current Status on the applicability of Artificial Intelligence Techniques in Egyptian hotels according to years of experience.

Item	Categories	Ranks		Test Statistics		
		N	Mean Rank	(x2)	p.value	Sig
The Current Status on the applicability of Artificial intelligence techniques.	Less than 5 years	85	268.91	37.83	0.000	H.S
	From 5 – Less than 10 Years	144	181.02			
	10 years and over	171	182.90			

*Significant at P≤ 0.05, **H.S= High Significant, X2=Chi-Square

The results in table No. **17** show that, with regard to years of experience, there was a significant difference among the respondents' answers about the Current Status on the applicability of Artificial Intelligence Techniques in Egyptian hotels **(P < 0.05**) in all statements where the value of **(p.value=0.000**). Concerning this result, it could be accepted the hypothesis **H.3.2.** which refers to there are significant differences on 0.05 the degree between the Current Status on the applicability of artificial intelligence techniques in Egyptian hotels according to years of experience **could be accepted**.

Table 18: Differences among Respondents' Responses towards the prospective Status on the applicability of Artificial Intelligence Techniques in Egyptian hotels according to educational level.

Item	Categories	Ranks		Test Statistics		
		N	Mean Rank	(x2)	p.value	Sig
The prospective Status on the applicability of Artificial intelligence techniques in Egyptian hotels	Vocational or technical school	96	162.77	15.80	0.000	H.S
	Bachelor's degree	224	206.37			
	Postgraduate (Diploma-Master–Ph.D.)	80	229.35			

*Significant at P≤ 0.05, **H.S= High Significant, X2=Chi-Square

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Based on the results in table No. **18** show that, with regard to educational level, there was a significant difference among the respondents' answers about the prospective Status on the applicability of Artificial Intelligence Techniques in Egyptian hotels **(P < 0.05)** in all statements where the value of **(p.value=0.000)**. Concerning this result, it could be accepted the hypothesis **H.3.3.** which refers to there are significant differences on **0.05** the degree between the prospective Status on the applicability of artificial intelligence techniques in Egyptian hotels according to educational level **could be accepted.**

Table 19: Differences among Respondents' Responses towards the prospective Status on the applicability of Artificial Intelligence Techniques in Egyptian hotels according to years of experience.

Item	Categories	Ranks		Test Statistics		
		N	Mean Rank	(x2)	p.value	Sig
The prospective Status on the applicability of Artificial intelligence techniques in Egyptian hotels	Less than 5 years	85	162.35	12.72	0.002	H.S
	From 5 – Less than 10 Years	144	203.88			
	10 years and over	171	216.62			

*Significant at P≤ 0.05, **H.S= High Significant, X2=Chi-Square

Based on the results in table No. **19** show that, with regard to years of experience, there was a significant difference among the respondents' answers about the prospective Status on the applicability of artificial intelligence techniques in Egyptian hotels (**P < 0.05**) in all statements where the value of **(p.value=0.002)**. Concerning this result, it could be accepted the hypothesis **H.3.4.** which refers to there are significant differences on **0.05** the degree between the prospective Status on the applicability of artificial intelligence techniques in Egyptian hotels according to years of experience could be accepted.

Conclusions:

This study presents an investigation of the current and Prospective status of the application of artificial intelligence techniques in Egyptian hotels. It was found that employees in Egyptian hotels do not have full awareness of artificial intelligence techniques, due to the lack of sufficient information for employees in Egyptian hotels about artificial intelligence techniques and their advantages. The high cost of artificial intelligence techniques is due to the periodic maintenance of artificial intelligence techniques and the infrastructure for applying these smart

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techniques, in addition to Egypt's lack of a systematic policy to adopt artificial intelligence techniques in Egyptian hotels and integrate them with employees to improve the level of service, in the event that information about artificial intelligence techniques is available. This will affect the hotel staff's ability to respond to all their concerns and doubts about AI techniques. Regarding the analysis of employees' opinions regarding the application of artificial intelligence techniques in Egyptian hotels, it was found that the majority of employees are not aware of artificial intelligence techniques and expressed their desire to know information about the advantages of artificial intelligence techniques. They also expressed their fears about artificial intelligence techniques that replace the human element in Egyptian hotels, which leads to an increase in the unemployment rate in the hotel sector. Employees in Egyptian hotels rely on answers to their inquiries about artificial intelligence techniques, as artificial intelligence techniques allow employees in Egyptian hotels to deal with difficult and complex tasks that humans may find difficult or impossible to perform, and thus reduce human errors. It can also perform tasks more quickly than a person, Faster decisions, rational decision maker, improved security, efficient communication. Finally, there is a significant impact of the dimensions of providing sufficient information about artificial intelligence techniques for employees and training them on how to integrate with them, and the necessary infrastructure to apply those technologies, and the presence of specialists in artificial intelligence techniques to train employees on them, and thus these dimensions affect the ability of employees in Egyptian hotels to accept techniques Artificial intelligence in Egyptian hotels easily for fear that these technologies will replace their jobs. Rather, a systematic policy must be developed to adopt artificial intelligence techniques to reassure employees and convince them that the application of these smart techniques will help them perform their work easily and with high efficiency, in order to ensure that employees are satisfied with working alongside us with artificial intelligence techniques in Egyptian hotels in the near future, and that is a simulation Technological development and global changes to make this planet fully intelligent.

Recommendations:

According to the literature review and the results extracted from the field study, the following recommendations could be suggested:

1) Government support must encourage organizations to adopt AI and Robotics

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techniques was that hotel owners and managers should be educated to adopt the idea of using robots in different hotel departments.by following in the footsteps and recommendations of Egypt vision 2030, focuses its efforts and investments on applying new technologies in different industries. Accordingly, it should head towards applying these techniques in the hotels industry and issuing mandatory decisions in this regard to make them keep pace with global changes .

2) International hotel chains in Egypt can cooperate with technology companies and specialized professional institutions to provide training courses in artificial intelligence techniques and robotics and machine learning, considering the work to reduce labor turnover and maintain a fixed number of employees, as well as training in the use of artificial intelligence.
3) The work in the concerned departments must be restructured and developed in terms of digital transformation, digitization, and service automation in terms of speed, goal achievement, ease of use, prices, and the institutional and intellectual readiness of department managers to provide their services in this context. Employees in the hotels industry should receive training in entrepreneurship, business administration, and innovation to link changes in smart technology and artificial intelligence techniques to the international hotel industry.
4) Permanent awareness by specialists in artificial intelligence sciences and smart technologies for hotel owners and providing them with sufficient information about artificial intelligence techniques and metaverse technology, training hotel workers on these modern techniques so that expertise is available to deal professionally with these techniques without any errors.

Limitations and Future Research

The current study detected a strong relationship between artificial intelligence techniques and the employees' perspectives, the focus of the research. It cannot be claimed that its results are generalizable and represent the entire hotel industry within Egypt, which means that there are fruitful opportunities for future studies, for example, investigating the perspectives of hotel owners interested in artificial intelligence techniques, and managers. Moreover, since the information provided to the subject of this study prior to their opinion was limited, some subjects were unable to express their support or objection to the issue of intent to adopt artificial intelligence techniques in Egyptian hotels. Accordingly, at this point in theoretical

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development and empirical evidence, we are only able to partially predict the factors influencing of awareness and acceptance of employees' in Egyptian hotels in a longitudinal framework to provide a deeper understanding of how the actual adoption decision shapes artificial intelligence techniques in Egyptian hotels. For future research, investigate the role of rating (e.g., star rating) and hotel size in Egyptian hotel owners, managers' and guests' perspectives of the use of artificial intelligence techniques. Furthermore, case studies of leading organizations that have implemented Smart techniques can be used to gain qualitative insights into the implications of using artificial intelligence techniques. Future research may also take a welfare perspective and explore how artificial intelligence techniques improves all employees' performance in different hotel departments. These topics point to a rich source of experimental research opportunities for artificial intelligence techniques in hotels.

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تقنيات الذكاء الإصطناعى في الفنادق المصرية: الواقع والمأمول

الملخص

سيواجه رواد الذكاء الإصطناعى في الفنادق عند اعتماد تقنيات الذكاء الإصطناعى مخاوف ردود فعل مختلفة وأسئلة من الموظفين حول تقنيات الذكاء الإصطناعى المبتكرة. يهدف هذا البحث إلى استكشاف الوضع الحالي والمستقبلي لتطبيق تقنيات الذكاء الإصطناعى في الفنادق المصرية، واستعدادهم لإندماج تلك التقنيات الذكية مع الموظفين داخل الفنادق المصرية والتحديات التي يواجهونها أثناء استخدامها، لتحقيق هدف البحث، تم تصميم إستقصاء إلكترونى وتوزيعه على عينة عشوائية من الموظفين في الفنادق المصرية، وتم استلام ٤٠٠ إجابة صحيحة وتحليلها بواسطة **SPSS V.29**. أسفرت النتائج أن الموظفين المصريين ليس لديهم معلومات كافية عن تقنيات الذكاء الإصطناعى لقبول تجربة تقنيات الذكاء الإصطناعى في المستقبل. تتضمن هذه المعلومات المزايا والمخاطر وتقنيات الذكاء الإصطناعى التي تحل محل العنصر البشرى، لذلك ربما يكون عدم قبول الموظفين وثقتهم بتقنيات الذكاء الإصطناعى هي العقبات الرئيسية أمام عملية تبني هذه التقنيات المبتكرة في الفنادق المصرية. بناءً على النتائج، تم اقتراح بعض التوصيات وتوجيهها إلى المتخصصين في تقنيات الذكاء الإصطناعى (**AIT**) ومديري الفنادق وأصحاب الفنادق والحكومة والمؤسسات المسؤولة عن تنشيط السياحة والفنادق في مصر. ومن التوصيات الرئيسية ضرورة إعادة هيكلة العمل في الإدارات المختلفة بالفندق وتطويرها من حيث التحول الرقمي والرقمنة وأتمتة الخدمة من حيث السرعة وتحقيق الهدف وسهولة الاستخدام والأسعار والاستعداد المؤسسي والفكري للإدارة، وعلى المدراء تقديم خدماتهم في هذا السياق، يجب أن يتلقى الموظفون في صناعة الفنادق تدريباً في ريادة الأعمال وإدارة الأعمال والابتكار لربط التغييرات في التكنولوجيا الذكية وتقنيات الذكاء الإصطناعى بصناعة الفنادق الدولية.