Why Haven't Egyptian Hotels Embraced Artificial Intelligence, Robots and Automation Services in their Operations (RAISA)?

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Abstract

Large Egyptian hotels have the ability nowadays to be an effective factor in the new global digital economy through their early investment in artificial intelligence, as artificial intelligence achieves great developments in all sectors of the economy, including hotels. Previous studies that artificial intelligence can contribute about 320 billion dollars to the economy of the Middle East by 2030, which means about 11% of the gross domestic product The study's goal is to find out what obstacles and challenges are there in the Egyptian hospitality industry when it comes to successful automation and AI adoption. A questionnaire was designed and distributed to the hotel's directors of information technology systems and general managers also. All Luxor Governorate hotels, as well as some Hurghada hotels, received a total of 163questionnaire forms. The data was transmitted and analyzed, and the most important results were as follows: The results revealed that there are specific factors that had a specific and noticeable impact on the adoption of artificial intelligence and automation. The results showed that there were sub-factors of influence which were government policies and support, followed by ideas and designs, and employee education. Knowledge management, robotic species, and cultural experience with artificial intelligence ranked last. The paper concluded, with a set of recommendations focused on the need to adopt artificial intelligence, robotics techniques, and automate services in the hospitality industry, providing the infrastructure for continuous updates. In addition, provide financial government support for the hospitality sector in the form of facilitating investment procedures, as well as achieving cooperation with international companies for the maintenance of robots to ensure their sustainability, implementing the concept of smart hospitality to gain a competitive advantage, and finally taking into account some other factors such as service, quality, and price for those smart systems in which food and beverage services will be provided where the guest enjoys watching the chef too.

Keywords: Artificial intelligence, robotics, smart hospitality, RAISA.

Introduction

"Smart hospitality" is about to increase by more than 25% in 2021. Robots that provide unexpected services surprise customers, keeping them engaged and creating a novel and pleasant experience in their minds. Robots in the hotel assist customers by directing them to their rooms, carrying their luggage to their rooms, providing housekeeping services, and serving food and snacks (Ivanov and Webster, 2019). So, academics are becoming more popular in the hospitality industry. For example, the UK-based Moley Robotics Company created Moley, an AI chef capable of replacing

real chefs in restaurants (Zhu & Chang, 2020). Furthermore, the importance of information and communication technology (ICT) in determining customer experiences and delivering service products has recently increased. Practitioners and academic researchers are becoming increasingly interested in how robots and artificial intelligence (AI) can improve service delivery and customer experiences as more hospitality service providers combine human and robotic services (Luo et al., 2021). Chiang and Trimi (2020) augured that, artificial intelligence (AI) robots in the hospitality industry have a bright future because they can demonstrate a high level of efficiency and accuracy while lowering costs. For example, front desk robots can reduce check-in and check-out lines. Memory, processing speed, computation power, strength, and the ability to deal with hazardous tasks are all areas where service robots outperform humans. Automation and artificial intelligence (AI) have become important elements of the hospitality and tourism industries. Institutions use marketing, service delivery, and client communication in this service-oriented industry (Yuan et al., 2019). Hardware, software, and network technologies may be used in smart hospitality and tourism to enable intelligent decision-making and support seamless interoperability for stakeholders (Buhalis, 2019) and to dynamically improve the customer experience (Buhalis and Sinarta, 2019).

Study Problem

According to Lv et al,. (2022), Hilton Worldwide, Marriott International, and Aloft are just a few of the international hotel chains that have already implemented AI in their service delivery. Additionally, AI is almost universally used in other service-related industries such as banks and airports (e.g., Vienna Airport, AirAsia, Ford Airport) to chat with customers and automatically provide useful information. Many hotels have begun to incorporate AI and robotics into their operations around the world. Artificial intelligence and robotics are about to revolutionize the way businesses make decisions and run their operations. To avoid visitor-employee contact, the Netherlands and Singapore, for example, have implemented robots in their hospitality sectors. Similarly, Meituan Damping, a Chinese delivery giant based in Beijing, has recently introduced robots to deliver food from kitchens to take customers away Khaliq et al., (2021). Consequently, it was discovered that most types of artificial intelligence are not used in most hotel services. As a result, the research problem arises from examining the barriers to the regulatory application of artificial intelligence in the hospitality sector in the study community and raising awareness among managers to apply artificial intelligence in all its forms to most services.

Objectives of the Study

1- Examining artificial intelligence's current state-of-the-art.
2- Identifying the barriers to implementing AI in hotels.
3- Identifying of usefulness gained from the implementation of AI in hotels.

Literature Review

Artificial intelligence in the hospitality industry

Artificial intelligence is playing an increasingly important role in the hospitality industry, primarily because of its ability to carry out traditionally human functions at

any time of the day. In particular, customer service is a vital part of the hotel industry, with hotels often living and dying based on the way they treat their customers. With artificial intelligence, the possibilities for improving this aspect are almost endless, ranging from increased personalization to tailored recommendations(Chi et al., 2020).

Using Artificial Intelligence in the Hospitality Industry

Artificial intelligence (AI) and robots are becoming more common in offices around the world. The hospitality industry has embraced AI, robots, and other cutting-edge technologies to greet guests and provide services during their stay. As a result of the increased use of technology, job insecurity has increased, due to the likelihood of employee turnover (TI) (Khaliq, 2021). In the hospitality industry, artificial intelligence (AI) service agents include self-service technologies, intelligent devices, service robots, and chatbots (Chi et al., 2020). According to Tussyadiah, (2020). AI, as a revolutionary technology for service innovation, is based on cognitive computing and machine learning and can make independent decisions and actions, as well as provide better contact and interaction with customers. Furthermore, Koo et al., (2021) declared the use of service robots such as the concierge robot and the room service robot that enhance the onsite experience of guests reimagined. Reis, (2020) described the term "robot" as critical and necessary to help define the field's boundaries and the most relevant approaches. According to the author, a robot "is a standardized, general term, though several over-lapping concepts can also describe robotic entities." According to the definition "system-based autonomous and adaptable interfaces that interact, communicate, and deliver service to an organization's customers. In the restaurant industry, AI and robots will play a bigger role in kitchen preparation, quality control, staff training, serving guests, and seating guests, among other things and service type and quality Nozawa et al (2022). Robot chefs are becoming more common in the restaurant industry (Seyitoglu & Ivanov, 2020). Spyce, Jingdong X Future, and Moley are just a few of the forward-thinking restaurants that have already installed a robot kitchen, chefs, and/or waiters. Yoronotaki is a Tokyo-based robot bartender who serves drinks in a pub and mixes a cocktail in less than a minute (Kelly & Tomoshige, 2020).

Practical applications of Artificial Intelligence in hospitality

Although the use of artificial intelligence within the hotel industry is still in its relative infancy, it already has numerous practical applications, some of which are outlined in more detail below:

In-Person Customer Service

An example of artificial intelligence in the hospitality industry is the use of AI to deliver in-person customer service.

Chatbots and Messaging

This technology is extremely effective when it comes to direct messaging and online chat services, responding to simple questions or requests.

Data Analysis

Another way in which AI is being utilized within the hotel industry away from pure customer service is in data analysis. In this capacity, the technology can be used to quickly sort through large amounts of data and draw important conclusions about customers, or potential customers (https://www.revfine.com).

Robots in the Hospitality Industry

Part of the reason why robots have emerged as a popular technology trend within the hospitality industry is that ideas of automation and self-service are playing an increasingly vital role in the customer experience. The use of robots can lead to improvements in terms of speed, cost-effectiveness, and even accuracy (https://www.revfine.com).

Implementation of RAISA in hospitality

Robots and autonomous vehicles are used in the hospitality industry for a variety of tasks, including patrolling, luggage delivery, and quick-cooking, to name a few. Here are some examples of use cases: In 2016, the Travel mate Autonomous Suitcases were introduced. When the owners pair their smartphones with the suitcases' Bluetooth, the suitcases can follow them around at their own pace. They can move around smoothly on optimized routes and avoid obstacles thanks to their self-driving capability (Huang, 2021)." Connie" is the name of the Hilton concierge robot in 2016, Connie, a Hilton concierge robot, made her debut at the Hilton in McLean, Virginia. Thanks to machine learning, computer vision, and natural language processing technologies, Connie can now see human visitors, understand voice input such as directions and questions, and respond in natural language. "Connie's eyes can flash a wide range of colors to convey various emotions." (Trejos, 2016). Domino's pizza is delivered to your door. Domino's Pizza, based in the United States, has been experimenting with autonomous cars and drones for pizza delivery. Because the self-driving vehicles designed for Domino's Pizza are completely autonomous and do not require human assistance, they do not have seats or steering wheels. Autonomous vehicles are small enough to maneuver around obstacles more quickly. Customers can use Domino's official app to place an order, track the vehicle's location, and pick up their pizza using a unique code (Holley, 2019). Flippy is a character in the game Flippy (the burger-flipping robot). Flippy is a one-handed robot that detects patties and determines when to flip them using computer vision. It's simple for human workers to use in the burger-making process. The management team is pleased with the robot's high accuracy and the potential cost savings in terms of cook training in the long run (Graham, 2018).

The usefulness of (RAISA) in hospitality

According to Naumov (2019), RAISA has enabled many businesses, including hospitality and tourism, to "transform" their operations, reducing costs, increasing productivity, and improving the efficiency and reliability of the services they provide. Self-service technologies have long been used at airports (e.g., passenger services and e-passport gates), hotels (e.g., check-in/out or travel agencies to provide information, e.g., and they improve the overall customer experience AI has gained traction due to

the growing importance of facial recognition technology, which allows for a variety of types of specific analyses and research instruments. Furthermore, because robots do not get tired or bored like humans, there are fewer errors in message delivery, which could be a long-term benefit for the company (Ivanov and Webster, 2017). The following figure illustrated the effect of ARISA on service quality in hospitality.

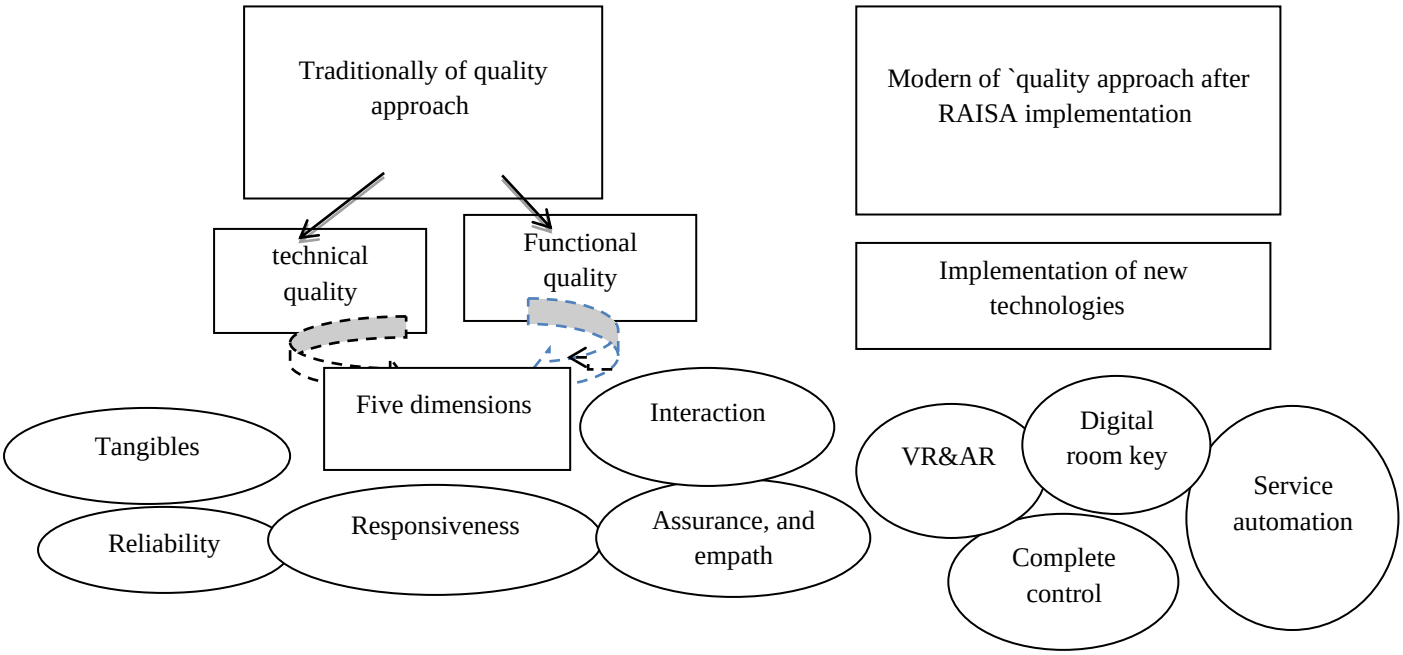

Figure (1): The effect of ARISA on service quality in hospitality

Source: Naumov, N. (2019).

Service robots assist humans in ways that go beyond the capabilities of industrial automation equipment (Buhalis and Amaranggana, 2013). In the hospitality and tourism industries, service robots provide luggage delivery, check-in, concierge, room service, wait staff, security, surveillance, and cleaning services (Revfine, 2020). Service robots are being used in hotels, such as in the hopes of improving front-line customer experiences (Dorcic et al., 2019). In addition to, the hospitality and tourism industry, the information and communication technology (ICT) revolution has resulted in the development of numerous new tools for optimization Like a- Asana which is a web and mobile application designed to help teams organize and manage work. b- Basecamp is a modern social media like interface and carefree team collaboration app. c- ProofHub is project planning software that is easy to use and has multiple features that make remote work more organized and productive d- Trello; very well known for visualizing tasks on a cardboard-like dashboard that is good for managing short and quick everyday assignments (http://www.interreg-central.eu/ and Dorcic et al., 2019).

Challenges of artificial intelligence in hospitality

Whatever areas AI replaces human efforts, the debate over AI vs. human intelligence rages on, with many unanswered questions in a variety of industries. Even though replacing employees saves money and gives customers a unique experience, "artificial intelligence" will never be able to surpass human intelligence because the field is still

in its early stages (Samala et al.,2020). According to Lommatzsch (2018), customers continue to rely on human workers for complex queries, even though chatbots and robots can do. So, Chatbots, for example, are limited to answering simple questions. These technologies provide answers based on the keywords in the questions. Customers still rely on the human workforce when there is an emergency or a complex issue to be resolved.

The country's IT infrastructure is one of the most barriers, which is the service network that supports innovation and new technology adoption (the state of ICT infrastructure influences hotels' willingness to implement e-participation), is one of the most significant barriers to continued assimilation of information and communication innovations into businesses to improve performance (Jabeen et al., 2021). According to Huang et al. (2021), human and organizational adoption of new technologies (including AI) is influenced by many key characteristics: There are several factors to consider, including relative advantage, compatibility, complexity, trialability, and observability. Intelligent agent technology is one of the most useful methods for supply chain management because it combines social ability, intelligence, and collaboration (Alsetoohy and Ayoun, 2018). According to Alsetoohy et al. (2019), current procurement practices lack coordination and proactivity between suppliers and buyers, as well as intelligent tools for locating appropriate suppliers, performance evaluation, and automation. Employee turnover is another internal issue as AI replaces jobs. According to (Huang and Rust, 2018), this could pose a "serious threat to human employment. The next figure illustrates the most important barriers and challenges of RAISA implementation.

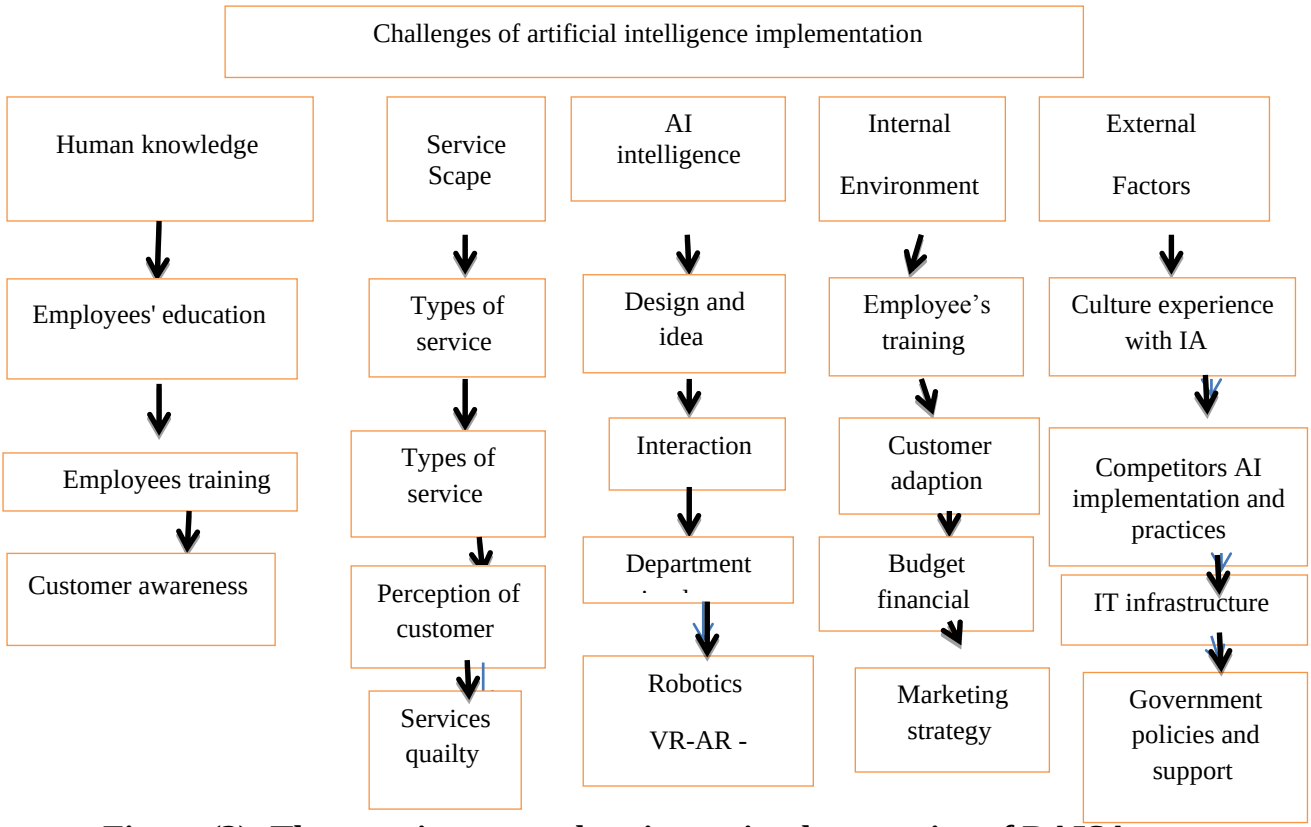

Figure (2): The most important barriers to implementation of RAISA

Source : Jabeen, et al . (2021).

Methodology

This research aims to determine to obstacles and challenges there are to successful automation and AI adoption in hospitality in the Egyptian hospitality industry: an exploratory study. Therefore, the research methodology is the descriptive approach. In addition, the population of this research included the IT managers and general managers of Hurghada and Luxor hotels in five- and four-stars hotels. Consequently, this research sample was chosen using a stratified random sample. Using Cochran's equation allows calculating an ideal sample size given a desired level of precision, desired confidence level, and the estimated proportion of the attribute present in the population. https://www.statisticshowto.com › probability-and-statistics (2021). The researcher distributed 163 questionnaires, only 150 of which were appropriate for analysis, with a 95.3 % respondent rate.

Hypotheses

1- Human knowledge significantly affects the implementation of RAISA in the hospitality industry.
2- Service and department types have a positive effect on the implementation of RAISA in the hospitality industry.
4- Institutional capacity and the implementation of RAISA in the hospitality industry.
5- The environment of hospitality has a significant effect on the implementation of RAISA in the hospitality industry.

The following figure illustrated the elements of implementing RAISA in the Hospitality industry:

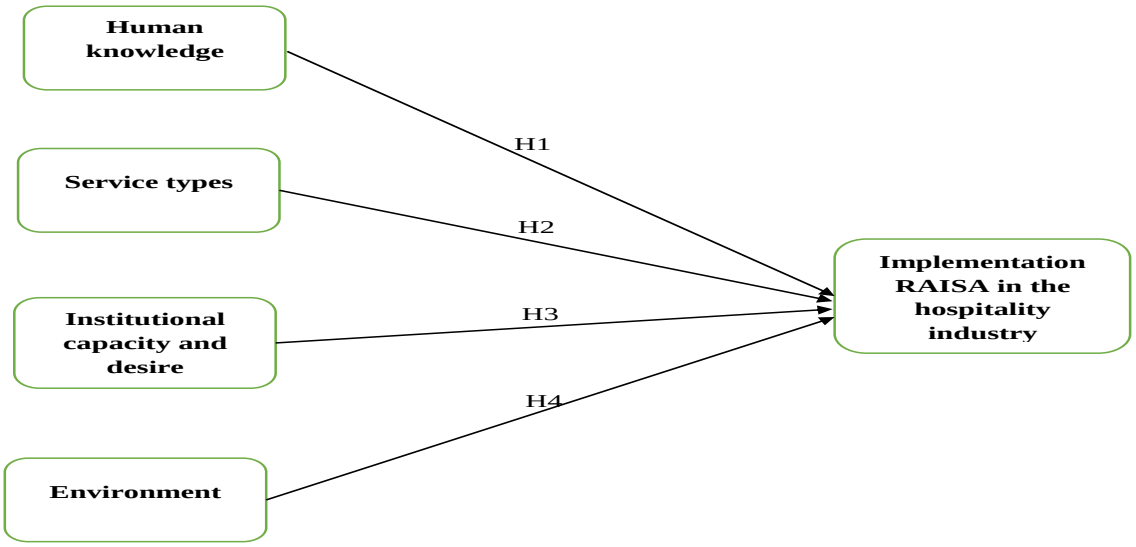

Figure (3) Hypotheses elements of the implementation of RAISA in the hospitality industry

Findings and discussions

Table (1): Descriptive Statistics

	N	Mean	Std. Deviation
Implementation RAISA	150	3.2567	.91136
Human knowledge in hotels	150	3.2983	1.02063
Service and department types	150	3.2427	.96031
Institutional capacity and desire	150	3.1233	.65394
Environment of hospitality	150	3.0633	.92739

Human knowledge in hotels significantly affects the implementation of RAISA in the hospitality industry.

Table (2): Reliability of human Knowledge

Cronbach's Alpha	N of Items
.844	6

Table (2) shows that Cronbach's alpha is, 844 which means that the research tool is reliable (Hinson, 2001). The researcher deleted the statement of Human knowledge 7.

Table (3): Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.657a	.431	.427	.68963

a. Predictors: (Constant), Human knowledge

Table (3) illustrates the results of Analysis of Variance (ANOVA) to verify the significance of the analysis model of simple Linear Regression.

Table (4): Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.369	1	53.369	112.217	.000a
	Residual	70.388	148	.476		
	Total	123.757	149			

a. Predictors: (Constant), Human knowledge b. Dependent Variable: Implementation RAISA

It is remarkable from the table (3) that the value of the correlation coefficient between the independent variable human knowledge and the dependent variable, (implementation RAISA), R-value is (0.657), and the value of the coefficient of determination (R2) is (0.431), and the value of the adjusted coefficient of determination (Adjusted R2) is (0.427), and the value of (F= 76.100) of the table (2) and a statistically significant (0.000) which is lower than the level of statistical significance (α= 0.05). This indicates that the combined independent variable (human knowledge) can explain (43.1%) of the changes that happened in the dependent variable (implementation RAISA). This is consistent with Jabeen, et.al . (2021). Human knowledge was ranked first, indicating that respondents believed that

understanding service robots were crucial in managing implementation. As a result, due to a lack of knowledge, implementing automation and AI in the hospitality and tourism industries will be difficult .This is consistent with Li et al (2019).

Table (5): Model Summary as well as the Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.323	.191		6.922	.000
	Human knowledge	.586	.055	.657	10.593	.000
a. Dependent Variable: Implementation RAISA						

Discussion of findings

Regarding hypothesis1, It was found from the table (5) that there is a presence of a statistically significant standard and non-standard coefficient of simple linear regression equation on the independent variable(human knowledge), as the value of (t= 10.593) with a statistically significant (0.000) which is lower than the level of statistical significance ($\alpha = 0.05$), which shows the rejection of the null hypothesis and accept the alternative, which states: Human knowledge significantly affects implementation RAISA in the hospitality industry "; and so, there is a sign of the standard coefficient of simple linear regression equation whose value amounted to (.657), and non-standard is (.586).

Service and department types have a positive effect on the implementation of RAISA in the hospitality industry.

Table (6): Reliability Statistics of service type

Cronbach's Alpha	No. of Items
.728	4

Table (6) shows that Cronbach's alpha is, 844 which means that the research tool is reliable (Hinson, 2001).

Table (7): Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.583a	.340	.335	.74313
a. Predictors: (Constant), Service type				

Table (7) illustrates the results of Analysis of Variance (ANOVA) to verify the significance of the analysis model of simple Linear Regression.

Table (8): Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.025	1	42.025	76.100	.000a
	Residual	81.732	148	.552		
	Total	123.757	149			
a. Predictors: (Constant), Service type b. Dependent Variable: Implementation RAISA						

From the previous table (7) that the value of the correlation coefficient between the independent variable Service and department types and the dependent variable, (implementation RAISA), R-value is (0.583), and the value of the coefficient of determination (R^2) is (0.340), and the value of the adjusted coefficient of determination (Adjusted R^2) is (0.335), and the value of (F= 112.217) of the table (2) and a statistically significant (0.000) which is lower than the level of statistical significance (α= 0.05). This indicates that the combined independent variable Service and department types) can explain (33.5%) of the changes that happened in the dependent variable (implementation RAISA). This is consistent with Nozawa et al (2022). In the hospitality and tourism industries, service robots provide luggage delivery, check-in, concierge, room service, wait staff, security, surveillance, and cleaning services according to Revfine (2020). The type and nature of the service, on the other hand, will have a significant impact on the use of artificial intelligence, robots, and service automation, particularly in food and beverage services that require interaction between the service provider and the recipient. AI and robots will play a bigger role in kitchen preparation, quality control, staff training, serving guests, and seating guests, according to Nozawa et al. (2022). Robot chefs are becoming more common in the restaurant industry (Seyitoglu & Ivanov, 2020). Spyce, Jingdong X Future, and Moley are just a few of the forward-thinking restaurants that have already installed a robot kitchen, chefs, and/or waiters .Yoronotaki (Kelly & Tomoshige, 2020) is a Tokyo-based robot bartender who serves drinks in a pub and mixes a cocktail in less than a minute. Despite what has been said about artificial intelligence's application in food and beverage services due to its unique nature, some believe that it would be ineffective within the framework of the old quality approach.

Table (9): Model Summary as well as the Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.463	.214		6.827	.000
	Service type	.553	.063	.583	8.724	.000
a. Dependent Variable: Implementation RAISA						

Regarding hypothesis 2, It was found from the table (3) that there is a presence of a statistically significant standard and non-standard coefficient of simple linear regression equation on the independent variable(service and department type), as the value of (t= 8.724) with a statistically significant (0.000) which is lower than the level of statistical significance (α = 0.05), which shows the rejection of the null hypothesis and accept the alternative, which states: service and department type significantly affects implementation RAISA in the hospitality industry "; and so, there is a sign of the standard coefficient of simple linear regression equation whose value amounted to (.583), and non-standard is (.553).

Institutional capacity and the implementation of RAISA.

Table (10): Reliability Statistics

Cronbach's Alpha	N of Items
.756	5

Table (11): Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.467a	.218	.213	.80865
a. Predictors: (Constant), Supply chain				

Table (4) illustrates the results of Analysis of Variance (ANOVA) to verify the significance of the analysis model of simple Linear Regression

Table (12): Analysis of Variance ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	26.977	1	26.977	41.254	.000a
	Residual	96.780	148	.654		
	Total	123.757	149			
a. Predictors: (Constant), Supply chain b. Dependent Variable: Implementation RAISA						

It is remarkable from the table (10) that the value of the correlation coefficient between the independent variable Institutional capacity and desire and the dependent variable, (implementation RAISA), R-value is (0.467), and the value of the coefficient of determination (R2) is (0.218), and the value of the adjusted coefficient of determination (Adjusted R2) is (0.427), and the value of (F= 41.254) of the table (2) and a statistically significant (0.000) which is lower than the level of statistical significance (α= 0.05). This indicates that the combined independent variable Institutional capacity and desire) can explain (21.8%) of the changes that happened in the dependent variable (implementation RAISA).

Table (13): Model Summary as well as the Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.224	.323		3.788	.000
	Supply Chain	.651	.101	.467	6.423	.000
a. Dependent Variable: Implementation RAISA						

Discussion of finding

Regarding hypothesis3, It was found from table (12) that there is a presence of a statistically significant standard and non-standard coefficient of simple linear regression equation on the independent variable(Institutional capacity and desire, as the value of (t= 6.432) with a statistically significant (0.000) which is lower than the level of statistical significance (α = 0.05),which shows the rejection of the null hypothesis and accepting the alternative, which Institutional capacity and desire significantly affects implementation RAISA in the hospitality industry "; and so, there

is a significant of the standard coefficient of simple linear regression equation whose value amounted to (.467), and non-standard is (.651).

The environment of hospitality has a significant effect on the implementation of RAISA in the hospitality industry.

Table (14): Reliability Statistics

Cronbach's Alpha	N of Items
.632	4

Table (15): Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.410a	.168	.162	.83414
a. Predictors: (Constant), Environment				

Table (15) illustrates the results of Analysis of Variance (ANOVA) to verify the significance of the analysis model of simple Linear Regression.

Table (16): Analysis of Variance ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.780	1	20.780	29.865	.000a
	Residual	102.977	148	.696		
	Total	123.757	149			
a. Predictors: (Constant), Environment b. Dependent Variable: Implementation RAISA						

It is remarkable from the table (15) that the value of the correlation coefficient between the independent variable Environment of hospitality and the dependent variable, (implementation RAISA), R-value is (0.410), and the value of the coefficient of determination (R2) is (0.168), and the value of the adjusted coefficient of determination (Adjusted R2) is (0.162), and the value of (F= 29.865) of the table (2) and a statistically significant (0.000) which is lower than the level of statistical significance (α= 0.05). This indicates that the combined independent variable Environment of hospitality) can explain (16.8%) of the changes that happened in the dependent variable (implementation RAISA).

Table (17): Model Summary as well as the Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.023	.236		8.581	.000
	Environment	.403	.074	.410	5.465	.000
a. Dependent Variable: Implementation RAISA						

Regarding hypothesis4, It was found from the table (16) that there is a presence of a statistically significant standard and non-standard coefficient of simple linear

regression equation on the independent variable(Environment of hospitality), as the value of (t= 5.465) with a statistically significant (0.000) which is lower than the level of statistical significance (α = 0.05), which shows the rejection of the null hypothesis and accepting the alternative, which states Environment of hospitality significantly affects implementation RAISA in the hospitality industry "; and so, there is a significant of the standard coefficient of simple linear regression equation whose value amounted to (.410), and non-standard is (.403).

Further Implications of RAISA

Based on the above-mentioned study results, it could be implicated the future use of RAISA technologies in the tourism economy, including examples from the hotel, restaurant, travel agency, museum, and events industries. Furthermore, both of the economic fundamentals of the use of RAISA and also the customer attitudes towards RAISA in the hospitality industry.

Conclusion and Recommendations

Before automation and Artificial Intelligence (AI) can be fully implemented in the hospitality and tourism industries, there are still many challenges to overcome. Prioritized barriers identified in the study will provide suitable pathways for hospitality and tourism businesses to evaluate and reflect on their current smart technology usage. The purpose of this study was to investigate the factors that influence the adoption of automation and artificial intelligence in the hospitality and tourism industries. In some departments, such as reception and housekeeping, artificial intelligence techniques should be used in the pre-arrival stage and during the arrival stage. The use of robots and service workers is prohibited in the food and beverage industry, particularly in restaurants and some kitchen tasks, and chefs' work is also prohibited. 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 hospitality industry should receive training in entrepreneurship, business administration, and innovation to link changes in technology to the international hotel industry. Hospitality and technology companies could collaborate with specialized professional institutions to provide training courses in robot design and machine learning. Work to reduce labor turnover and maintain a fixed number of employees, as well as be trained to use artificial intelligence. Government support must encourage organizations to adopt AI Technology. Encouraging businesses to take action to promote smart technology and assist Egypt's hospitality sector with relevant tourism infrastructure in developing strategies for their policies and practices based on effective artificial intelligence and robotics planning and implementation.

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الملخص العربي

لماذا لم تتبنى الفنادق المصرية خدمات الذكاء الاصطناعي والروبوتات والأتمتة في عملياتها ؟

تمتلك الفنادق المصرية الكبري والحديثة بشتى أنحاء الجمهورية القدرة لتكون عاملا رئيسياً في الاقتصاد الرقمي العالمي الجديد، وذلك من خلال استثمارها المبكر في الذكاء الاصطناعي ،حيث يحقق الذكاء الاصطناعي تطورات عظيمة في كافة قطاعات الاقتصاد بما في ذلك الفنادق ، وأثبتت الدراسات السابقة أن الذكاء الاصطناعي يمكن أن يساهم بنحو 320 مليار دولار في اقتصاد الشرق الأوسط وذلك بحلول عام 2030، أي حوالي 11% من الناتج القومي المحلي. تهدف الورقة البحثية إلى معرفة العقبات وكذلك الفرص والتحديات الموجودة في صناعة الضيافة في مصر عندما يتعلق الأمر بالأتمتة الناجحة واعتماد الذكاء الاصطناعي عليها. باستخدام المنهج الكمي ،تم تصميم استبيان وتوزيعه على مديري نظم تقنية المعلومات وكذلك مديري العموم بالفنادق على كلا من فنادق محافظتي الأقصر والغردقة بأجمالي 163 استبيانًا صالحه للتحليل. وبعد نقل البيانات وتحليليها كشفت النتائج أن هناك عوامل محدده كان لها تأثيرا محددا وملحوظا لاعتماد الذكاء الاصطناعي والأتمتة ، كان من أهمها :المعرفة البشرية والخدمات الحديثة المقدمة ونوع القسم والقدرة المؤسسية والرغبة والعناصر البيئية. جاءت المعرفة البشرية في الفنادق العامل الأكثر تأثيراً في اعتماد الأتمتة والذكاء الاصطناعي ، تليها الخدمات وأنواع الأقسام وتطبيقات الروبوتات بينما البيئة المؤسسية كان لها أقل تأثير. توضح النتائج أيضا، أنه كان هناك عوامل فرعية للتأثير كان من أهمها السياسات الحكومية والدعم ، تليها الأفكار والتصاميم ، وتثقيف الموظفين. احتلت إدارة المعرفة والأنواع الروبوتية والتجربة الثقافية مع الذكاء الاصطناعي المرتبة الأخيرة. واختتمت الورقة ، بمجموعة من التوصيات تركزت على ضرورة اعتماد تقنيات الذكاء الاصطناعي والروبوتات وأتمتة الخدمات في صناعة الضيافة ، وتوفير البنية التحتية لذلك لأن هناك ما يحول دون ذلك من تحديثات مستمرة داخلها ، وتقديم الدعم الحكومي لقطاع الضيافة ، وتشجيع الفنادق من خلال تقديم الدعم المالي في صوره تسهيل وتيسير الاستثمارات في هذا القطاع تحديدا ، كذلك تحقيق التعاون مع الشركات العالمية لصيانة الروبوتات لضمان الاستدامة بها ، وتنفيذ مفهوم الضيافة الذكية لاكتساب ميزة تنافسية ، وأخيرا مراعاه بعض العوامل الأخرى مثل الخدمة والجودة والسعر لتلك الأنظمة الذكية التي ستقدم بها خدمات الأغذية و المشروبات حيث يستمتع الضيف بلقاء ومشاهدة الطهاة أيضا.

الكلمات الدالة :الذكاء الاصطناعي ، الروبوتات ، الضيافة الذكية ، تنفيذ ال RAISA