THE IMPACT OF ARTIFICIAL INTELLIGENCE ON ANALYZING LABOR SUPPLY IN HOTELS

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ABSTRACT

Artificial intelligence (AI) has gained a lot of attention in recent years due to its integration into various industries, including the hotel sector. This study investigates the role of AI in analyzing labor supply within five-star hotels in Luxor and Aswan, Egypt, the researcher focused on Luxor and Aswan governorates due to the geographical nature of the Faculty of Tourism and the hotels that are interested in serving their community, as well as the fact that the researcher is a resident of Aswan governorate. Findings indicate that AI has a statistically significant positive impact on labor supply analysis, enhancing efficiency, reducing errors, and improving profitability Moreover, AI-driven automation is expected to replace certain job roles, necessitating continuous skill development among hotel employees. The study underscores the need for proactive adaptation strategies to leverage AI while mitigating potential workforce disruptions.

KEYWORDS: Artificial Intelligence, analyzing labor supply, Luxor and Aswan Hotels. Five- star hotels

INTRODUCTION

Artificial Intelligence (AI) has emerged as a transformative force in modern industries, fostering economic growth and operational efficiency, Moreover, in the era of digital technology, the adoption of AI is crucial (Limna, 2022). Furthermore, the growing capabilities of AI systems have resulted in their extensive adoption across various fields (Dodeja et al., 2024). In this respect, smart technologies, such as automation and AI, have become integral components of hospitality and tourism (Jabeen et al., 2022). Furthermore, the aggregate impact of AI labor substitution on employment and pay growth in

industries, on the other hand, is now too tiny to discern (Zarifhonarvar, 2023). When the use of AI and robots in hotels becomes common, the impact of AI and robotics on hotel personnel who face being replaced by AI and robots should be considered (Wang et al., 2022). As a result, there is still plenty of room for further research (Kong et al., 2023). Moreover, the impact of AI on analyzing labor supply is a hotly debated topic in labor economics (Zarifhonarvar, 2023). According to Acemoglu et al. (2020), there is fear among many workers in the hospitality sector that a rise in automation will displace jobs. Most of the concerns about introducing new technologies are related to their adverse effects on the labor market, such as which and how many jobs will be depleted (Lane & Saint-Martin, 2021). Jobs involving repetitive, routine, or optimization tasks are the ones most at risk of being replaced by intelligent machines. Conversely, jobs with greater creative or strategic content or requiring social intelligence are less susceptible to computerization AI (Abrardi et al., 2022). As a result, researchers and lawmakers should concentrate on AI's potential for automation, augmentation, and employment redesign (Zarifhonarvar, 2023). In this respect, Kong et al. (2023), called on future researchers to explore the impact of AI on hotel workers. Likewise, Zarifhonarvar (2023), also called for studying changes in the analyzing labor supply and the changing requirements of the labor market, as well as changes in employment patterns and the analyzing labor supply.
 study aims to explore the impact of AI on labor supply analysis within five-star hotels in Luxor and Aswan, assessing its implications for human resource planning and workforce sustainability.

RESEARCH AIM AND OBJECTIVES

The main aim of this research is to study benefits, drivers and challenges of artificial intelligence
This study seeks to achieve the following objectives:
Obj1: To examine the role of AI in hospitality workforce management.
Obj2: To evaluate AI's impact on labor supply analysis within five-star hotels

RESEARCH QUESTIONS

The current research is based on a basic question to achieve the research objective, which is:
Q1: What is the role of AI in the hospitality sector?
Q2: How does AI influence labor supply analysis in five-star hotels in Luxor and Aswan?

LITERATURE REVIEW

ARTIFICIAL INTELLIGENCE

The hospitality and tourism sector has experienced a remarkable surge in the integration of AI technologies (Huang et al., 2022). Furthermore, the ongoing COVID-19 pandemic has highlighted the critical role of technological solutions in the tourism industry (Koo et al., 2021). Hence, AI technology has emerged as a transformative force in the hospitality industry, especially in customer service (Roy et al., 2023). Therefore, over the past few years, the hospitality industry, including hotels, resorts, and other businesses, has increasingly acknowledged the advantages of utilizing AI to streamline operations and elevate the quality of guest experiences (Kim et al., 2022). Finally, the application of intelligent automation in the travel and tourism industry is anticipated to witness significant growth in the future, propelled by advancements in AI and related technologies (Tussyadiah, 2020).

CONCEPT OF ARTIFICIAL INTELLIGENCE

Artificial intelligence (AI) has gained widespread attention and recognition in various domains of society (Huang et al., 2022). In this respect, most definitions of AI tend to view it as a subfield within computer science or describe it as machines emulating human intelligence (Tussyadiah, 2020). According to Bhave et al. (2020), AI can be regarded as computing technologies that replicate or mimic intelligent behaviors that are relevant to those exhibited by humans, even though they may differ in their actual functioning. Likewise, AI refers to the simulation of human intelligence processes by computer systems, enabling them to perform tasks that typically require human intelligence (Kumar et al., 2021).

IMPORTANCE OF ARTIFICIAL INTELLIGENCE IN THE HOSPITALITY SECTOR

AI has garnered global recognition for its ability to stimulate economic expansion and revolutionize various industries (Huang et al., 2022). An area where AI has made a significant impact in the hospitality industry is through the implementation of chatbots and virtual concierges. These technologies, have revolutionized customer service by providing automated assistance and personalized recommendations to guests, enhancing their overall experience (Kim et al., 2022). These AI technologies contribute to enhancing customer service, expanding operational capabilities, and reducing costs (Limna, 2022). Recent advancements and the application of advanced technologies such as AI and robotic services have led to a comprehensive transformation and automation of every aspect of the tourist experience (Kumar et al., 2021). In

this respect, the hospitality industry extensively utilizes technology to address challenges such as labor shortages, rising costs, and unsociable working hours, and to enhance operational efficiency (Leung, 2021). With the rapid advancement of AI technologies, hotels are increasingly adopting AI-driven solutions to streamline their financial operations, optimize revenue generation, and enhance overall operational efficiency (Milton, 2024). In the tourism industry, the automation of travel facilitation, coupled with an increase in leisure time, has the potential to further boost the demand for travel and tourism services (Tussyadiah, 2020). The utilization of intelligent or smart hotels has been observed to enhance the potential of customer satisfaction, making it an adopted strategy by numerous leaders in the hospitality industry and service providers (Sharma & Rawal, 2021). Finally, from the customer's perspective, AI and robotics can offer structured, automated services and elevate their experiences (Koo et al., 2021).

LABOR SUPPLY IN FIVE STAR-HOTELS IN LUXOR AND ASWAN

The initial stage in human resource planning involves identifying the current supply of human resources within the hotel (Hayes, 2024). During this phase, the HR department thoroughly assesses the organization's workforce in terms of employee count, skills, qualifications, positions, benefits, and performance levels. This analysis provides a comprehensive understanding of the existing human resources within the hotel (Mahapatro, 2021).

THE IMPACT OF ARTIFICIAL INTELLIGENCE (AI) ON LABOR SUPPLY IN HOTELS

In this context, there are two different points of view. Initially, AI has two different impacts on organizations, societies, and individuals (Huang & Rust, 2018). The first view sees AI as a positive for capital. As It provides systematic reasoning capabilities by processing inputs and learning from variances in expected outcomes. AI systems can predict and adapt to changes in their ecosystems and respond to stimuli received from the external environment (Dwivedi et al., 2023). Furthermore, AI is playing an ever-growing role in transforming service industries by taking on a wide range of tasks. It serves as a significant source of innovation, but it also poses a potential threat to human employment (Huang & Rust, 2018). In this respect, AI presents significant opportunities for the hospitality and tourism industry across various areas, including operations, design, marketing, destination management, human resources, revenue management, accounting and finance, strategic management, and more (Dogru et al., 2023). The second point of view is that artificial intelligence has a profound and significant long-term impact on human capital. In the hospitality sector, there has been a growing trend of

replacing human workers with robotic concierges, delivery robots, chatbots, and information assistants (Kim et al., 2022). These advanced technologies are being utilized across various devices, such as mobile apps and self-service check-in/check-out machines. The objective behind this shift is to enhance efficiency, decrease operational costs, and provide guests with convenient and streamlined services (Kim et al., 2022). While AI can perform tasks traditionally carried out by humans and exhibit human-like cognitive abilities, it is important to note that the complete replacement of human labor by AI is a progressively evolving scenario (Senturk, 2022). According to Huang and Rust (2018), this transformation may eventually lead to a decrease in human interactions as AI technology advances. Therefore, human resources planning is influenced by a multitude of factors, including technological advancements, economic fluctuations, globalization, and shifts in the labor force (Ali, 2019). These factors play a crucial role in shaping the strategic decisions and actions related to human resource management within an organization (Senturk, 2022). Sawhney (2016), suggests that tasks characterized by high frequency and low complexity are well-suited for automation or machine replacement. Furthermore, these tasks can be easily productized, meaning they can be efficiently performed by machines. Similarly, Chui et al., (2015) argue that tasks that don't require specialized knowledge are more susceptible to automation. To understand AI and its applications in Human Resource Management (HRM), it is helpful to consider the services that AI is poised to replace and how this transformation will impact the broader realm of work (Vrontis et al., 2022). As predicted by Bowen and Morosan (2018), it is expected that by the year 2030, service robots will oversee a significant portion, approximately twenty-five percent, of the labor force, and this trend is projected to continue growing. Furthermore, the advent of AI holds immense potential to revolutionize the field of logistics and supply chain management (Richey et al., 2023). In addition, it has been recommended that employees in the hospitality and tourism sector should acquire knowledge in robot design and machine learning to effectively connect technological advancements to the evolving landscape of the international tourism industry (Jabeen et al., 2022). Moreover, employees may exhibit resistance toward AI technologies, primarily driven by concerns over potential job displacement and a lack of familiarity with these advanced systems (Ivanov et al., 2020). Therefore, Employees must acquire the necessary skills to ensure their employability and mitigate the potential risk of job displacement caused by AI (Huang & Rust, 2018). Transitioning from in-person interactions to using AI-based chatbots for accessing services would indeed require a significant behavioral shift and present challenges (Dwivedi et al., 2024). Likewise, it becomes evident that the advancement of AI has the potential to fundamentally alter the nature of work and present a significant challenge to human employment (Vrontis et al.,

2022). The most influential factors driving the implementation of automation and AI in the hospitality industry were human knowledge, the provision of services, and the applications of robotics (Jabeen et al., 2022). Furthermore, devices with AI technologies can offer services in several ways (Zhu et al., 2023). According to Leung (2021), the evolution of hospitality software has progressed from local and server-based platforms to web-based systems and ultimately to cloud-based platforms.

METHODOLOGY

This study adopts a quantitative approach. Questionnaire form was designed with two main parts. Part one is about personal data. The second part consists of 2 components (1) Artificial intelligence in hotels (6 items), wich was improved and revised from previous research (Abd El Kafy et al., 2022). (2) Analyzing labor supply in hotels (6 items), it was improved and revised from previous research ((Mahapatro, 2021; Hayes, 2024)). All the questions are measured using a five-point Likert scale that ranges from "strongly disagree" to "strongly agree." To collect data, the current questionnaire targeted five-star hotel managers in Luxor and Aswan - Egypt. the researcher focused on Luxor and Aswan governorates due to the geographical nature of the Faculty of Tourism and the hotels that are interested in serving the community, as well as the fact that the researcher is a resident of Aswan governorate. Furthermore, the researcher followed the comprehensive enumeration method to reach highly accurate results A total of 128 questionnaires were distributed statistical population was, 08 hotels 5star *16 managers= 128 managers The researcher distributed 135 questionnaires to all managers in the hotels in the study sample yielding 110 valid responses, reflecting an 86.55% response rate. The questionnaires have been distributed by email. The data was analyzed by the researcher using the descriptive statistical approach and the Statistical Package for the Social Sciences (SPSS v.25) software

VALIDITY

The researcher sought the expertise of the academic supervision committee and a group of hospitality management experts to collect opinions and suggestions regarding the research tool. Face validity was used as a means of ensuring the credibility of the data collection tools. Using this approach, the researchers linked the research objective to the corresponding question.

RELIABILITY

Table (1) Reliability Analysis of Research Variables.

The Axes	No. of statements	Alpha Coefficient
Artificial Intelligence in Hotels	**6**	0.875
labor supply	6	0.850
The Overall	12	0.861

According to Gliem and Gliem (2003), a Cronbach's alpha level above 0.8 is considered good for reliability. Based on the previous table, the reliability of the questionnaire was assessed using Cronbach's alpha test. The Cronbach's alpha coefficient was calculated for all scale items and yielded a value of 0.850, indicating good reliability.

RESULTS AND DISCUSSION

PERSONAL DATA

Table (2) The Sample Characteristics Statistics

Variable	Response	Frequency	Percent	Rank
Age	Less than 40 years	62	56.5	1
	40 years to 50 years	39	35.4	2
	More than 50 years	9	8.1	3
	Total	**110**	**100**	--
Level of education	Intermediate qualification	17	14.9	2
	Bachelor's degree	79	72.0	1
	Postgraduate studies	14	13.0	3
	Total	**110**	**100**	--

Variable	Response	Frequency	Percent	Rank
Years of experiences	Less than 5 years	13	11.8	3
	From 5 to 10 years	31	28.6	2
	More than 10 years	66	59.6	1
	Total	**110**	**100**	--
Hotel Department	Front Office	25	22.4	1
	Housekeeping	5	4.3	8
	Food and Beverages	21	18.6	2
	Security	3	3.1	9
	Marketing and sales	16	14.9	3
	Accounting	13	11.8	4
	HR	10	8.7	5
	IT	8	7.5	6
	Engineering and maintenance	6	5.6	7
	Other	3	3.1	9
	Total	**110**	**100.0**	-
Hotel type	International Hotel Chain	83	75.3	1
	Independent Hotel	19	17.2	2
	Local Hotel Chain	8	7.5	3
	Total	**110**	**100.0**	-

Table 2 indicates that 56.5 % of head department and hotel managers fall within the Less than 40 years old category. Moreover, 35.4 % of respondents belong to the 40 - 50 years old category. With regards to the respondents' level

of education, 72% of hotel managers hold bachelor's degrees. On the other hand, 13.6% of participants hold postgraduate degrees (PhD, master's, or diploma). In term of years of experience, Table 2 shows that the vast majority of hotel managers ,59.6 %, have more than 10 years of experiences. Moreover, 28.6% of hotel managers have from 5 to 10 years of experience. In comparison, only 11.8% of hotel managers have Less than 5 years of experience in hotel work. The most of hotel managers, 22.4%, come from the front office department. Additionally, 18.6% of hotel managers, oversee the food & beverage department. Furthermore, 14.9% of hotel managers, work in the sales and marketing department. By contrast, just 3.1% of hotel managers work in the security department.

VARIABLES ANALYSIS

ARTIFICIAL INTELLIGENCE IN HOTELS

Table (3) Descriptive statistics and factor analysis for artificial intelligence in hotels

Statement	Response	F	%	M	SD	R	Loading
You see that the use of artificial intelligence in hotels is essential.	Strongly Disagree	-	-	4.56	0.59	2	0.640
	Disagree	-	-				
	Neutral	6	5.0				
	Agree	38	34.2				
	Strongly Agree	67	60.9				
	Total	110	100.0				
The presence of artificial intelligence within hotels improve hotel services	Strongly Disagree	-	-	4.53	0.67	3	0.726
	Disagree	-	-				
	Neutral	11	9.9				
	Agree	30	27.3				
	Strongly Agree	69	62.7				

Statement	Response	F	%	M	SD	R	Loading
and develop leadership skills.	**Total**	110	100.0				
Artificial intelligence provides a competitive advantage for guests to choose your hotels.	Strongly Disagree	1	1.2	4.25	0.79	6	0.623
	Disagree	1	.6				
	Neutral	14	13.0				
	Agree	46	42.2				
	Strongly Agree	45	42.9				
	Total	110	100.0				
Using artificial intelligence in your hotel reduces error rates and increases profitability and customer confidence.	Strongly Disagree	1	.6	4.27	0.86	5	0.604
	Disagree	3	2.5				
	Neutral	17	15.5				
	Agree	34	31.1				
	Strongly Agree	55	50.3				
	Total	110	100.0				
Artificial intelligence machines are faster and more polite than human employees.	Strongly Disagree	1	1.2	4.43	0.76	4	0.717
	Disagree	-	-				
	Neutral	10	9.3				
	Agree	37	32.9				
	Strongly Agree	62	56.5				

Statement	Response	F	%	M	SD	R	Loading
	Total	110	100.0				
You believe that artificial intelligence will replace the human element in hotels and hospitality institutions in the future.	Strongly Disagree	-	-	4.73	0.51	1	0.601
	Disagree	1	.6				
	Neutral	1	1.2				
	Agree	25	22.4				
	Strongly Agree	83	75.8				
	Total	110	100.0				
Overall				**4.46**	**0.557**	**--**	**0.765**

F= Frequency   M= Mean   SD= Std. Deviation   R= Rank

Table (3) showed that:

"You believe that AI will replace the human element in hotels and hospitality institutions in the future." comes at first rank with (M= 4.73, *SD*= 0.51). This result disagrees with Abd EL kafy *et al.* (2022), who confirmed that the tourism and hospitality industry is inherently reliant on human interactions and cannot be completely detached from them. Therefore, artificial intelligence is unlikely to pose a significant threat to the human factor in this industry. While AI technologies can enhance efficiency and provide valuable support, human touch and personalized interactions remain essential in delivering exceptional hospitality experiences. On the other hand, the above result agrees with Limna (2022), who confirmed that the utilization of AI technologies can enhance customer experiences while simultaneously reducing the reliance on human labor. Followed by " **You see that the use of AI in hotels is essential.**" (M= 4.56, *SD*= 0.59). This result agrees with Jabeen *et al.* (2022), who confirmed that smart technologies, such as automation and AI, have become integral components of hospitality and tourism. Moreover, "**The presence of AI within hotels helps improve hotel services and develop leadership skills.**" comes at a third rank (M= 4.57, *SD*= 0.67). This result agrees with Kumar *et al.* (2022), who confirmed that the field of AI and

automation science presents ample opportunities for tourism and hospitality businesses to enhance their daily operations and deliver high-quality customer service. Furthermore, **"Using AI in your hotel reduces error rates and increases profitability and customer confidence."** comes at a fifth rank with (M= 4.27, *SD*= 0.86). Followed by " **AI provides a competitive advantage for guests to choose your hotels.**" (M= 4.25, *SD*= 0.79). This result agrees with Jabeen *et al.* (2022), who confirmed that the decision-making processes of tourists are significantly impacted by technological advancements." **You see that the use of AI in hotels is essential.**" is ranked last variable (M= 4.56, *SD*= 0.59). This result agrees with Jabeen *et al.* (2022), who confirmed that smart technologies, such as automation and AI, have become integral components of hospitality and tourism. The total mean of the AI in hotels was (4.46) with a standard deviation of (0.557), which indicated a high degree of agreement for all the artificial intelligence in hotel phrases which means that this variable has a high level. According to the above outcomes, the first question of the current research was answered: " **Q1: What is the role of AI in the field of hospitality?**". As AI becomes more widely used, the hospitality and tourism industry is at a key juncture in its digital transition, with significant potential for intelligent automation (Buhalis et al., 2019). Furthermore, AI has been widely applied in the hospitality and tourism industries for planning, management, analysis, promotion, and service tasks (Doborjeh et al., 2022). In addition, Japan has a robot hotel named Hennna Hotel, which contains robot porters, a cloakroom robot, and in-room personal helpers (Tussyadiah, 2020). On the other hand, the relationship between AI and the labor market is the most crucial component of AI in the global economy. Artificial intelligence's impact on work and jobs is broad and complex, with both positive and bad implications as well as, the first objective of the current research was answered: " **Obj1: To identify the role of AI in the field of hospitality.**".

LABOR SUPPLY IN HOTELS

VALIDITY OF ANALYZING LABOR SUPPLY IN HOTELS VARIABLE

Table (4) Factor analysis of analyzing labor supply in hotels variable

Statements	Loading
You have full knowledge of the number of employees in your department at the hotel.	0.875
You have full knowledge of the skills possessed by employees in your department at the hotel.	0.664

Statements	Loading
You have full knowledge of the qualifications of employees in your department at the hotel.	0.825
You have full knowledge of the benefits of employees in your department at the hotel.	0.861
You have full knowledge of the level of performance of employees in your department.	0.847
You know the positions held by employees in your department at the hotel.	0.702
Sums of squared loadings	0.795

The table shows that all statements scores ranged between 0.664 and 0.875 which it is bigger than 0.6 (Yong & Pearce, 2013). Hence, it is statistically valid. Likewise, the previous six statements are responsible for the variance in analyzing labor supply in hotels with a percentage of 79.5%.

DESCRIPTIVE STATISTICS OF THE ANALYZING LABOR SUPPLY VARIABLE

Table (5) Descriptive statistics of the analyzing labor supply

Statement	Response	F	%	M	SD	R
You have full knowledge of the number of employees in your department at the hotel.	Strongly Disagree	-	-	4.73	0.51	2
	Disagree	1	1.2			
	Neutral	1	1.2			
	Agree	15	22.4			
	Strongly Agree	83	75.8			
	Total	110	100.0			
You have full knowledge of the skills possessed by employees in your department at the hotel.	Strongly Disagree	-	-	4.51	0.60	4
	Disagree	1	0.6			
	Neutral	4	3.7			
	Agree	44	39.8			
	Strongly Agree	61	55.9			
	Total	110	100.0			
You have full knowledge of the qualifications of employees in	Strongly Disagree	1	0.6	4.24	0.80	6
	Disagree	4	3.7			
	Neutral	9	8.1			
	Agree	51	46.0			
	Strongly Agree	45	41.6			

Statement	Response	F	%	M	SD	R
your department at the hotel.	**Total**	110	100.0			
You have full knowledge of the benefits of employees in your department at the hotel.	Strongly Disagree	-	-	4.37	0.67	5
	Disagree	1	1.2			
	Neutral	8	7.5			
	Agree	50	44.7			
	Strongly Agree	51	46.6			
	Total	110	100.0			
You have full knowledge of the level of performance of employees in your department at the hotel.	Strongly Disagree	-	-	4.77	0.48	1
	Disagree	1	0.6			
	Neutral	1	1.2			
	Agree	20	18.0			
	Strongly Agree	88	80.1			
	Total	110	100.0			
You know the positions held by employees in your department at the hotel.	Strongly Disagree	-	-	4.64	0.56	3
	Disagree	1	0.6			
	Neutral	3	2.5			
	Agree	32	29.2			
	Strongly Agree	74	67.7			
	Total	110	100.0			
Overall				**4.54**	**0.466**	

F= Frequency   M= Mean   SD= Std. Deviation   R= Rank

 The table showed that: "You have full knowledge of the level of performance of employees in your department at the hotel." comes at a first rank with a mean (4.77) and std. Deviation of (0.48). "You have full knowledge of the number of employees in your department at the hotel." comes at second rank with a mean (4.73) and std. Deviation of (0.51). "You know the positions held by employees in your department at the hotel." comes at third rank with a mean (4.64) and std. Deviation of (0.56). "You have full knowledge of the skills possessed by employees in your department at the hotel." comes at fourth rank with a mean (4.51) and std. Deviation of (0.60). "You have full knowledge of the benefits of employees in your department at the hotel." comes at fifth rank with a mean (4.37) and std. Deviation of (0.67). "You have full knowledge of the qualifications of employees in your department at the hotel." comes at the last rank with a mean (4.24) and std. Deviation of (0.80).

In general, all the above results agree with Hayes, (2024) and Mahapatro, (2021), who confirmed that the initial stage in human resource planning involves identifying the current supply of human resources within the hotel. During this phase, the hotel managers and heads of departments thoroughly assess the organization's workforce in terms of employee count, skills, qualifications, positions, benefits, and performance levels. This analysis provides a comprehensive understanding of the existing human resources within the hotel. The total mean of the analyzing labor supply was (4.54) with a standard deviation of (0.466), which indicated a high degree of agreement for all the analyzing labor supply phrases which means that this variable has a high level.

Table (6) Correlation between artificial intelligence and analyzing labor supply

Variables		Analyzing labor supply
Artificial intelligence	Pearson Correlation (R)	.565**
	Sig. (2-tailed)	.000
	N	110

**. Correlation is significant at the 0.01 level (2-tailed).

Table (7) Linear regression coefficients for the effect of

artificial intelligence on analyzing labor supply

Model	B	R^2	Std. Error	β	T	Sig.
(constant)	2.431	.320	.246		9.866	.000
Artificial intelligence	.474		.055	.565	8.644	.000

* Dependent Variable: Analyzing labor supply

From tables (6) and (7) the (R) value (0.565) shows that there is a moderately significant correlation between the artificial intelligence and analyzing labor supply in hotels, as well as the coefficient of determination (R2) is (0.320), suggesting that 32% of the analyzing labor supply in Egyptian hotels was explained by the artificial intelligence. Furthermore, it seems that the regression coefficient is statistically significant, P <0.05, so the variable of (Artificial intelligence) has a statistically positive impact on analyzing labor supply in Egyptian hotels. The following equation can be inferred to predict

the analyzing labor supply in Egyptian hotels from the level of artificial intelligence as follow:

$$\textit{Analyzing labor supply = 2.431 + (0.474 * Artificial intelligence)}$$

According to the above results, it can be found that artificial intelligence has a statistically positive impact on analyzing labor supply in Egyptian hotels. This means that the research's second objective, which was to demonstrate this relationship, has been achieved, which is to **"Obj2: To illuminate the impact of artificial intelligence on analyzing labor supply in Egyptian hotels."**. Furthermore, the second question of the current research was answered**: "Q2: What is the impact of artificial intelligence on analyzing labor supply** in five star - hotels in Luxor and Aswan?"

CONCLUSION AND RECOMMENDATIONS:

Artificial intelligence's impact on work and jobs is broad and complex, with both positive and bad implications (Zarifhonarvar, 2023). Furthermore, recent advances in AI have fueled new fears of widespread job loss, owing to AI's ability to automate a fast-expanding set of tasks (including non- routine cognitive functions) and it's potential to touch every sector of the economy (Lane & Saint-Martin, 2021). At the same time, AI raises concerns and raises doubts about its impact on the work market and society (Lane & Saint-Martin, 2021). Therefore, the current study focuses on knowing the main aspects and points of impact of artificial intelligence on the demand and supply of employees in the hotel labor market. Especially, the impact of artificial intelligence (AI) on human resource planning (HRP) in Egyptian hotels. Hence, this study aims to investigate the impact of artificial intelligence (AI) on human resource planning (HRP) in Egyptian hotels. The point of conclusion can be presented as follows:

RESULTS OF HOTEL MANAGER'S QUESTIONNAIRE:

Concerning studying the impact of AI applications on forecasting labor demand in Luxor and Aswan hotels, the research achieved some results, and the following is a presentation of the conclusion points:

➢ The majority of participants in Luxor and Aswan hotels are from the youth category.
➢ The vast majority of participants in Luxor and Aswan have a higher educational qualification.
➢ The majority of hotel managers in Luxor and Aswan have high experience in hotel work.
➢ The vast majority of hotel managers in Luxor and Aswan are from international Hotel Chain

➢ The results showed that artificial intelligence will replace the human element in hotels and hotel establishments in the future.

➢ The vast majority of hotel managers confirmed that the use of artificial intelligence in hotels is necessary.

➢ The results confirmed that the presence of AI within hotels improves hotel services and develops leadership skills.

➢ The vast majority of hotel managers confirmed that AI machines are faster and polite than human employees.

➢ The results confirmed that the use of AI in hotels reduces error rates and increases profitability and customer confidence in the hotel.

➢ The vast majority of hotel managers confirmed that AI contributes to providing a competitive advantage for hotels.

➢ The vast majority of hotel managers are fully aware of the number of employees in their hotels.

➢ The results confirmed that hotel managers are aware of the positions held by employees in their hotels.

➢ The results confirmed that hotel managers are fully aware of the skills possessed by employees in their hotels.

➢ The vast majority of hotel managers are fully aware of the qualifications of employees in their hotels.

➢ The results confirmed that technological progress will affect the nature of work in hotels.

RECOMMENDATIONS

RECOMMENDATIONS TO THE MINISTRY OF TOURISM & ANTIQUITIES AND EGYPTIAN HOTEL ASSOCIATION (EHA)

1. The EHA should cooperate with academic institutions to provide educational workshops and hold courses for hotel employees and managers on the importance and tools of artificial intelligence in hotels.

2. The Ministry of Tourism and Antiquities and the Egyptian Hotel Association should oblige academic institutions, especially (faculties of tourism and hotels, hotel institutes and hotel schools), to add educational materials and educational programs specializing in artificial intelligence in hotels to their students during their studies there.

3. Work to raise awareness of the risks of artificial intelligence for hotel workers by holding workshops and training courses and printing educational brochures, as the results confirmed that it will replace the human element in hotels and hotel institutions in the future, which contributes to the keenness of workers in this field to improve them to maintain their jobs.

4. The Ministry of Tourism and Antiquities and the EHA should cooperate with banks to provide soft loans to hotels to help them apply artificial intelligence in hotels.

RECOMMENDATIONS TO HOTEL SENIOR MANAGEMENT

5. The senior management of hotels should provide training programs for hotel employees on the new skills they need, to enable them to perform their jobs to the fullest, which contributes to achieving the hotel's goals.

6. The senior management of hotels must educate employees about the need to continuously improve themselves, as artificial intelligence will replace some employees in performing their jobs in the hotel, and thus those who do not develop themselves will leave soon.

7. The senior management of hotels should provide training programs for hotel employees on artificial intelligence and how to employ it in their work, which contributes to reducing error rates and increasing profitability and customer confidence in the hotel.

LIMITATIONS AND FUTURE RESEARCH

The current research has several specific and diverse limitations, but it identifies opportunities for future studies. This research was limited to managers and heads of departments of five-star hotels located in Luxor and Aswan governorates. Therefore, we call on future researchers to focus on other regions. We also call on future researchers to study the impact of artificial intelligence on increasing hotel revenues. We also call on future researchers to study the possibility of applying AI in budget hotels.

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