

The Role of Artificial Intelligence in Promoting Tourism: A Case Study of a Sample of University Professors from Mila University Center and the Beneficiaries of Mobility Programs for Level Enhancement in Istanbul

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Abstract: This article aims to examine the impact of artificial intelligence in promoting tourism. it begins with a theoretical section, in which the key concepts related to intelligence and tourism are defined. The second section focuses on the practical dimension of the study, where the descriptive method was applied in the theoretical part, while the case study methodology was adopted in the practical part. Questionnaires were distributed at the University Center Abdelhafid Boussouf in Mila to a sample of 40 individuals, including university professors and PhD students. The collected data were processed and analyzed using SPSS 26. This study concludes that artificial intelligence has a significant impact on promoting and improving tourism by providing personalized recommendations and customized travel plans. These AI-driven suggestions—whether upon the user's request or proactively—contribute to saving tourists' time and often help them discover better destinations than those they might have chosen themselves.

Keywords: Artificial Intelligence; Promoting; Tourism.

1. Introduction

Tourism has initially appeared as a fundamental human activity with a simple and primitive nature in terms of its appearance, reasons, and objectives such as searching for shelter, food, and drink, hunting, or seeking out certain human communities for social reasons. However, today, tourism has evolved into an industry with its own dimensions and objectives, contributing even to the national income and economy. It, also, plays a significant role in raising tourists' awareness and has become a powerful means of intellectual, social, and cultural exchange between peoples.

Nations and countries have shown interest in using modern methods to enhance their various economic and social aspects, eventually reaching the stage of employing artificial intelligence as a tool that is integrated into most sectors, nowadays. This has directly contributed to the advancement of tourism, giving it a better image, which aligns with the developments it has witnessed in recent decades. Since Turkey is one of the most important

countries that have kept pace with these developments and among the first to utilize modern developments to promote tourism, it now receives large numbers of tourists annually with varying purposes. These include university professors who tend to take advantage of their internships to engage in scientific tourism at the level of their universities and research centers.

1.1. Research Problematic

Given the countries' inevitable use of artificial intelligence to support tourism and its manifestations, shedding light on the role of artificial intelligence in tourism and its aspects has become necessary. Thus, the main research problem can be formulated as follows:

What is the role of artificial intelligence in promoting tourism according to the perspective of university professors and PhD students of Mila University Center, who benefited from academic mobility programs in Istanbul?

1.2. Research Hypotheses

There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and tourism enhancement.

Sub-hypotheses:

a. There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and touristic recommendations and travel suggestions.

b. There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and virtual assistants and chatbots.

c. There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and smart booking systems and dynamic pricing.

d. There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and hospitality and accommodation.

e. There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and tourist attraction support.

1.3. Previous Studies:

The study by Dr. Ahlam Zayed and Dr. Kamal Zemouri, published in *Al-Bashair Economic Journal*, Vol. 07, No. 01 (2021), entitled "Artificial Intelligence and Its Applications in the Tourism Sector – The Case of the United Arab Emirates", aimed to address some concepts of artificial intelligence and its role in developing the tourism sector by taking the UAE as a model. Using the descriptive and analytical method, the study concluded that the use of AI technologies in the tourism field significantly helps in collecting and analyzing tourist data, thereby increasing the efficiency of the sector (Zayed & Zemouri, 2021).

Another study by Dr. Saber Yehia Merzougui, published in the *International Journal of Heritage, Tourism and Hospitality*, Vol. 15, No. 03 (2021), entitled "The Impact of Using Artificial Intelligence Technologies on Enhancing the Quality of Tourism Services: An Application to the Tourism Sector in the Arab Republic of Egypt", sought to shed light on the importance of applying AI technologies in tourism, the extent to which the Egyptian tourism destination benefits from such applications, and the main challenges encountered. The study found a strong relationship between the application of AI technologies and the improvement of tourism service quality, in addition to identifying a set of obstacles that hinder the implementation of AI in the Egyptian tourism sector (Saber, 2021).

1.4. Research Gap:

Unlike the aforementioned studies, our research employed the descriptive method (for theoretical grounding) along with a field study based on questionnaires and statistical

analysis involving a sample of university professors and beneficiaries of mobility programs in Istanbul. The questionnaire dimensions were carefully selected, and to our knowledge, they have not been addressed in this manner in previous studies.

2. Theoretical Framework of the Study

2.1. Definition of Artificial Intelligence

Artificial intelligence stands for the ability of computers or computer-controlled robots to perform activities that are normally performed by humans using their cognitive abilities. Artificial intelligence requires both experience and data to enhance its intelligence level. The essential components of the process of artificial intelligence are knowledge acquisition, reasoning, and independent error correction as it has the ability to enhance its knowledge. The learning of the Artificial intelligence is not exclusively human-dependent. It rather acquires knowledge independently from its own experiences when humans use it (Levina, 2023, p. 4). According to the father of artificial intelligence, John McCarthy (September 4, 1927 – October 24, 2011), who is an American computer scientist and one of the founders of this field, artificial intelligence is “the science and engineering of making intelligent machines, especially intelligent computer programs.” Hence, artificial intelligence is a means for transforming machines or computer-controlled robots to think in the same way as humans. This was deduced after conducting in-depth studies into how the human brain thinks, how humans study and develop their way of thinking, how they make decisions, and how these findings can be used as a basis for developing intelligent programs and systems (Tutorials Point, 2024, p. 1).

2.2. Types of Artificial Intelligence based on Capability

2.2.1. Narrow Artificial Intelligence (Ghosh & Thirugnanam, 2021, p. 24-25): It is a type of artificial intelligence that can perform a limited set of instructions without resorting to thinking at all. It is the most widespread and widely used in our world.

2.2.2. General Artificial Intelligence: The performance of this type of intelligence is in its beginning to approach that of humans. Although this has not yet happened, research indicates that it will be possible in the near future, given the rapid acceleration in the development of artificial intelligence.

2.2.3. Strong Artificial Intelligence: Researchers in the field of artificial intelligence will not be satisfied with producing a machine that approaches humans in thinking and responding. Their goal has rather shifted to producing an intelligence that operates within this machine whose performance is better than humans.

2.2.4. AI Systems and Their Use in Travel and Tourism: AI is reshaping tourism by enhancing efficiency, personalization, and accessibility. The key applications include (Jacques, 2020, pp. 10-11):

- **Personalization and Recommender Systems:** AI suggests destinations, hotels, and activities based on traveler preferences and past behavior.
- **Conversational Systems (Chatbots & Voice Assistants):** Provide instant support for booking, inquiries, and customer service, available 24/7.
- **Forecasting:** Predicts demand, tourist flows, and seasonal trends, helping businesses plan resources effectively.
- **Language Translation Applications:** Break language barriers with real-time translation of text and speech, improving communication for travelers.

2.2.5. Applications and Potential of AI in Tourism: The tourism sector has already embraced numerous AI-driven applications, with further innovation and potential transformation on the horizon. Among the most promising opportunities are (OECD, 2024, p. 16):

- **Enhancing the visitor experience** by providing more interactive, personalized, and

seamless journeys, complemented by 24/7 tailored services that respond effectively to individual needs.

- Improving accessibility and audience engagement By expanding access to culture and diversifying leisure services
- Strengthening market intelligence by leveraging data analytics to enable refined market segmentation and more accurate customer profiling.
- Optimizing visitor flows and traffic management via real-time data integration and automated decision-making tools.
- Supporting price and cost optimization through predictive maintenance, efficient resource allocation, and streamlined procurement processes.
- Automating internal operations and routine customer services, thereby increasing efficiency and reducing operational burdens.

2.3. *A Theoretical Introduction to Tourism:*

Tourism is closely linked to economic development, as it works to solve some of the problems faced by countries. This is in addition to the role it plays in developing regions and cities and contributing to the national income of these countries at varying rates.

2.3.1. Definition of Tourism: It is the process of human movement from one place to another for a period of time in a legitimate manner that achieves psychological pleasure, stemming from the growing need for rest, recreation, change from routine, appreciation of natural beauty, and joy during the stay. (Zaid, 2009, p. 14-15).

2.3.2. Tourism Development: Tourism development takes the form of integrated industrialization, which involves establishing and constructing tourist centers that include the various services that tourists require during their stay in a manner that is compatible with the financial and ethical capabilities of their different categories (Kafi, 2014, p. 111).

2.3.3. Tourism Development Factors: The most important tourism development factors that countries seek to achieve can be summarized as follows (Mohi, 2008-2009, pp. 38-39):

First: Tourism is an economic activity, i.e., tourism income increases in tourist regions or countries that can provide all or most of the services and requirements of the tourism industry.

Second: Tourism is greatly affected by travel and tourism service prices as well as the individuals' level of income. Increasing costs of tourist travel to a certain region results in a decline in the demand for tourism to that region.

Third: The feature of significant changes in tourism demand is affected by external factors that cannot be predicted, especially since the pattern of international tourism, in which tourists travel long distances to reach their destination, is characterized by high costs.

Fourth: The tourism product cannot be stored, as in many industries, especially since the tourist season is characterized by seasonality in most cases, leading to inconsistent employment levels in the tourism industry.

The difficulty of attracting tourists and ensuring their annual return, due to the abundance of global attractions, drives tourism workers to satisfy them in hopes of their comeback.

3. The Practical Framework of the Study

3.1. *Study Sample:*

A sample consisting of 40 university professors and PhD students was selected. This is due to the the number of professors at Mila University Center is relatively limited, and the number of PhD students is also not large, which makes the overall population relatively small. Therefore, a sample of 40 individuals was selected, as it represents a significant

proportion of the population and allows for deriving results that can be generalized within the limits of the studied community. Moreover, it was difficult to reach many professors and PhD students, particularly due to work schedules and the limited availability of doctoral candidates.

Likert Scale Weights: To determine the length of the five-point Likert scale cells (its lower and upper limits) used in the study's axes, the range was calculated then divided by the number of scale cells to obtain the accurate cell length. Afterwards, this value was added to the lowest value on the scale to determine the upper limit of this category.

Table .1. Limits and Degrees for the Five-point Likert Scale Categories.

Degree	1	2	3	4	5
Limits of the category	[1; 1.80]	[1.80; 2.60]	[2.60; 3.40]	[3.41; 4.20]	[4.21; 5]
Agreement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree

Source: Prepared by the researcher using SPSS.

3.2. Validity and Reliability of the Research Instrument

3.2.1 Validity of the Research Instrument: The validity of the research instrument refers to the extent to which the questions of the questionnaire measure what they are intended to measure. This was confirmed as follows:

First: The Apparent Validity

This was achieved by presenting the questionnaire to a group of reviewers for the purpose of revising and verifying the relevance and accuracy of the items. These reviewers have provided a set of corrections that directly contributed to producing a final and improved version of the questionnaire.

Second: Validity of the Internal Consistency

This refers to the consistency of each questionnaire item with the domain it belongs to. The following is a detailed explanation of this:

Measuring the Validity of the Internal Consistency of the Questionnaire axes

Table .2. Pearson Correlation Coefficient for the Questionnaire axes

Promotion of tourism	Artificial intelligence	
0.810	0.760	Pearson Correlation Coefficient
0.002	0.001	Significance Level

Source: Prepared by the researcher based on the outputs of SPSS26.

The table above illustrates that all the questionnaire axes show a positive correlation with the axis to which they belong. Additionally, all the statements are statistically significant at the 5% significance level, indicating that these axes exhibit internal consistency.

Second: Reliability of the Research Instrument: We were able to measure the reliability of the questionnaire by calculating Cronbach's Alpha coefficient and extracting the results using SPSS26. Acceptable percentages are those equal to or greater than 60%, while values equal to or greater than 70% are considered acceptable in terms of validity. Additionally, the square root of the reliability coefficient is calculated.

Table .3. Cronbach's Alpha Reliability Coefficient

Axes	AI	Tourism Promotion						
		Second axis	Tourism Recommendations and Suggested Trips	Virtual Assistants and Chatbots	Smart Booking Systems and Dynamic Pricing	Hospitality and Accommodation	Support of Tourist Landmarks	Third axis
Number of Items	10	5	5	5	5	5	15	35
Cronbach's Alpha	0.790	0.650	0.710	0.890	0.795	0.680	0.810	0.760
Validity ($\sqrt{\text{Alpha}}$)	0.888	0.806	0.842	0.943	0.891	0.824	0.900	0.871

Source: Prepared by the researcher based on the outputs of SPSS26.

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The overall reliability coefficient reached 0.760, which is a high value that allows us to conclude that the research instrument is reliable. The overall validity coefficient also reached 0.871, which is a high value, indicating that the instrument is valid as well.

3.3. Normality Test

To verify that the data follow a normal distribution, we relied on the Kolmogorov–Smirnov test, as follows:

Table.4. Normality Distribution Test for the Study Sample

Axes	Artificial Intelligence	Tourism Promotion	Total
Kolmogorov–Smirnov Test	0.980	0.970	0.730
SIG	0.120	0.115	0.182

Source: Prepared by the researcher based on the outputs of SPSS26.

We observe that all SIG values are greater than 0.05 for all axes, which indicates that the data follow a normal distribution.

3.4 Data Presentation and Analysis

Below is a comprehensive overview of the study sample consisting of 40 individuals:

3.4.1 According to the Respondent's Gender

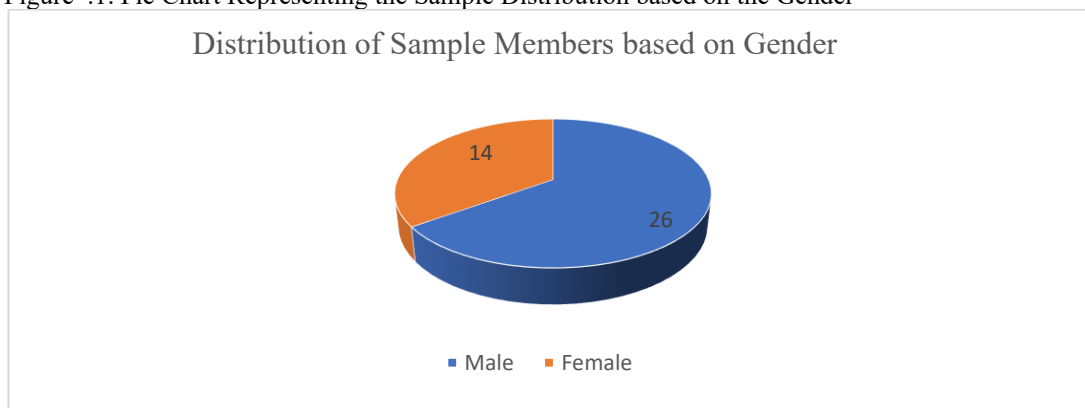
Table .5. Distribution of Sample Members based on Gender

Variable	Frequency	Percentage
Male	26	65%
Female	14	35%
Total	40	100%

Source: Prepared by the researcher based on the outputs of SPSS26.

Comment: The table shows that the percentage of males exceeds that of females with a difference of less than 30%. This higher proportion of males is attributed to male professors being the primary beneficiaries of training programs, as well as the fact that it is often more difficult for female professors to travel alone. Figure 01 illustrates this as follows:

Figure .1. Pie Chart Representing the Sample Distribution based on the Gender



Source: Prepared by the researcher based on the outputs of the Excel 2021 program.

3.4.2. According to the Respondent's Age Group

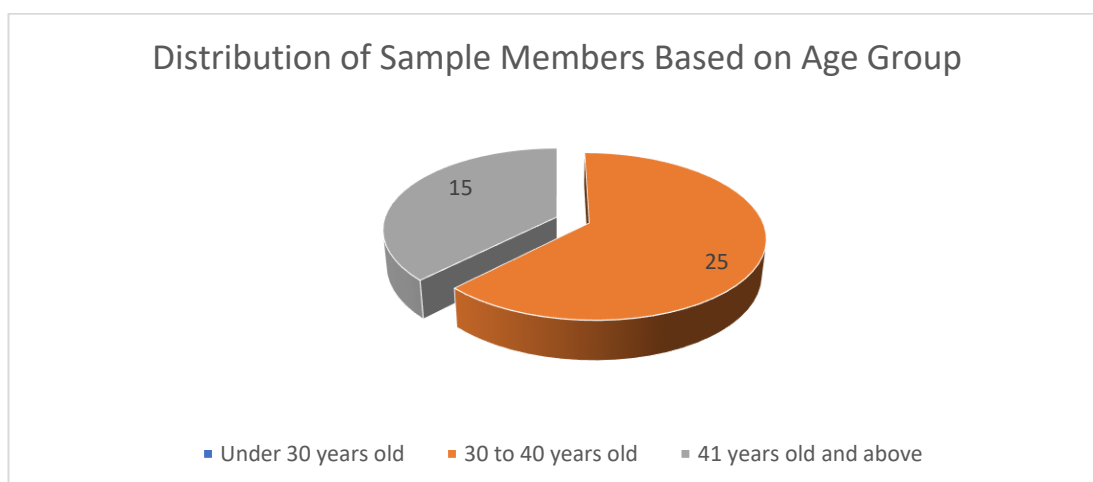
Table .6. Distribution of Sample Members Based on Age Group

Variable	Frequency	Percentage
Under 30 years old	0	0
30 to 40 years old	25	62.5%
41 years old and above	15	37.5%
Total	40	100%

Source: Prepared by the researcher based on the outputs of SPSS26.

Comment: The table shows that the age group of less than 30 years old has no representation, as the employment of most recently hired people were delayed until the age of 30. Additionally, the highest percentage belongs to the age group between 30 and 40 years old as the majority of the pedagogical staff at the University Center of Mila are relatively young. This is further illustrated in the following figure:

Figure .2. Pie Chart Representing the Distribution of the Sample Based on the Age Group



Source: Prepared by the researcher based on the outputs of Excel 2021.

3.4.3 According to the Respondent's Academic Rank

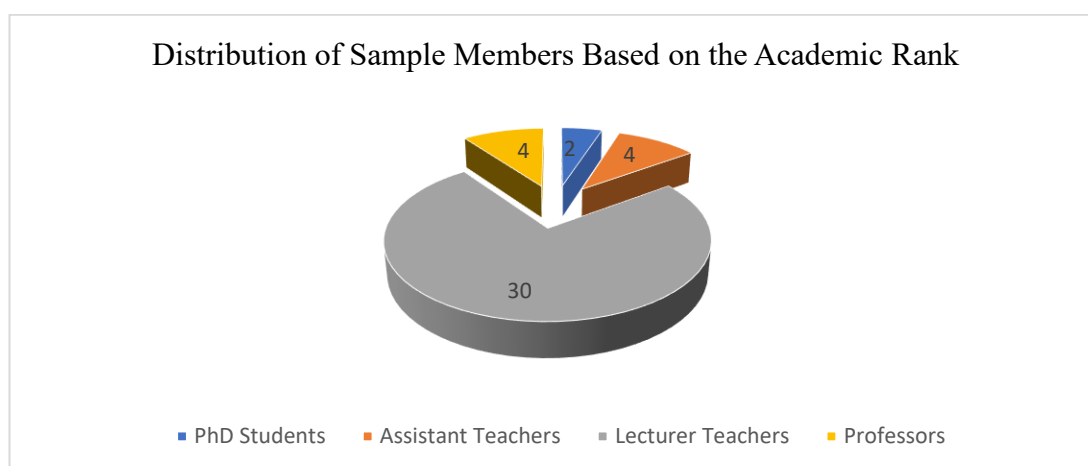
Table .7. Distribution of Sample Members Based on the Academic Rank

Variable	Frequency	Percentage
PhD Students	2	5%
Assistant Teachers	4	10%
Lecturer Teachers	30	75%
Professors	4	10%
Total	40	100%

Source: Prepared by the researcher based on the outputs of SPSS26.

Comment: The table showcases that the highest percentage, according to the academic rank, was 75% for the lecturer teachers, which is due to the large number of lecturer teachers at the University Center of Mila. In contrast, the lowest percentage was for the professors as this center is relatively new and lacks this rank. This the following figure further illustrates this:

Figure .3. Pie Chart Representing the Distribution of the Sample Based on the Academic Rank



Source: Prepared by the researcher based on the outputs of Excel 2021.

3.4.4 According to the Respondent's Professional Experience

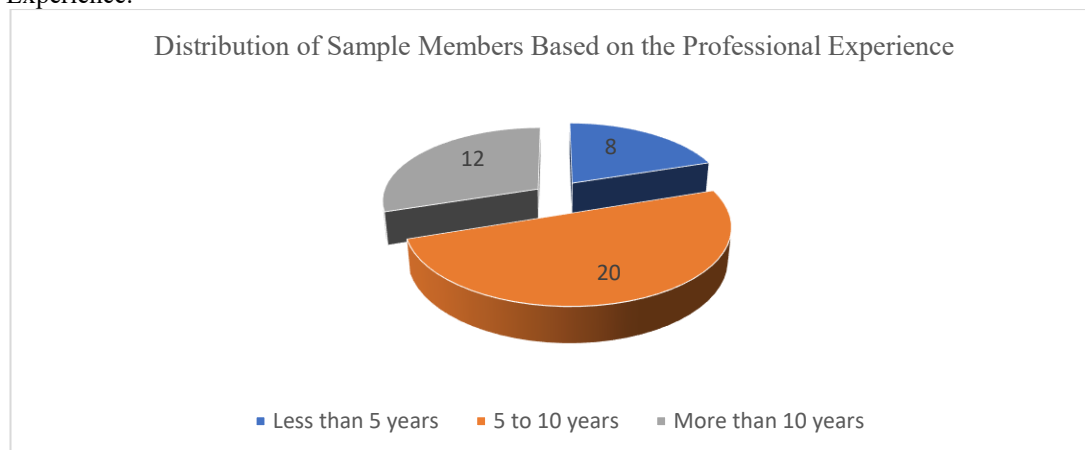
Table .8. Distribution of Sample Members Based on the Professional Experience

Variable	Frequency	Percentage
Less than 5 years	8	20%
5 to 10 years	20	50%
More than 10 years	12	30%
Total	40	100%

Source: Prepared by the researcher based on the outputs of SPSS26.

Comment: The table shows that the highest percentage in terms of professional experience was for the group with 5 to 10 years of experience, followed by respondents with more than 10 years of experience. Lastly, the lowest percentage was for those with less than 5 years of professional experience as highlighted in the following figure:

Figure .4. Pie Chart Representing the Distribution of the Sample Based on the Professional Experience.



Source: Prepared by the researcher based on the outputs of Excel 2021.

3.5. Results of Descriptive Analyses for the Artificial Intelligence Axis

Table .9. Analysis of the Items of Artificial Intelligence Axis

N°	Statements	Mean	Standard Deviation	Rank	Evaluation
01	Artificial intelligence has become capable of replacing humans	4.6	0.62	1	Strongly Agree
02	AI no longer waits for human instructions to process. It rather became part of its tasks	4.2	0.85	2	Agree
03	AI can make decisions like a human	4.06	0.91	6	Agree
04	AI can process many repetitive operations automatically without forgetting any of them	3.5	0.83	10	Agree
05	AI can sense errors and dangers like humans then analyzes and predicts appropriately.	3.95	0.99	7	Agree
06	AI starts processing errors and dangers immediately after detection and before they escalate.	3.8	0.75	9	Agree
07	AI searches various sources to gather information for analysis, not relying solely on the provided data	4.12	0.79	4	Agree
08	AI processes big data as efficiently as small data	4.19	0.76	3	Agree
09	AI adapts to environmental updates	4.1	0.81	5	Agree
10	AI learns from all the operations it performs and not just processes them	3.9	0.83	8	Agree
Axis: "Artificial Intelligence"		4.04	0.65	/	Agree

Source: Prepared by the researcher based on the outputs of SPSS26.

Comment: The results of the table indicate that all statements related to "artificial intelligence" received high scores ranging between 3.5 and 4.6. The statement "artificial intelligence has become capable of replacing humans" has received the highest score of 4.6 with a standard deviation of 0.62. While, the lowest score of 3.5 was for "AI can process many repetitive operations automatically without forgetting any of them" with a standard deviation of 0.83.

As for the overall average of the "artificial intelligence" axis, it was 4.04, with a standard deviation of 0.65.

3.5.1 Tourism Recommendations and Suggested Trips

Table .10. Analysis of Items under “Tourism Recommendations and Suggested Trips”

N°	Statements	Mean	Standard Deviation	Rank	Evaluation
01	You share photos of your previous trips	2.1	0.67	3	Disagree
02	You share your previous reviews of destinations and hotels	1.9	0.83	4	Disagree
03	You share your vacation dates and preferred travel periods	2.3	0.70	1	Disagree
04	You share your tourism preferences and favorite destinations	2.2	0.69	2	Disagree
05	You comment on tourism posts and offers	1.8	0.61	5	Strongly Disagree
Dimension 01: Tourism Recommendations and Suggested Trips		2.06	0.68	/	Disagree

Source: Prepared by the researcher based on the outputs of SPSS26

Comment: The results of the table indicate that all statements related to "tourism recommendations and suggested trips" have received low scores, ranging from 1.8 to 2.3. The statement "You share your vacation dates and preferred travel periods" have received the highest score of 2.3 with a standard deviation of 0.70. Whereas, the statement "You comment on tourism posts and offers" has received the lowest score estimated at 1.8 with a standard deviation of 0.61. Moreover, the overall average for this dimension was 2.06, with a standard deviation of 0.68.

3.5.2 Virtual Assistants and Chatbots

Table .11. Analysis of Items Related to the "Virtual Assistants and Chatbots" Dimension

N°	Statements	Mean	Standard Deviation	Rank	Evaluation
01	You use robots to quickly obtain information	4.1	0.71	3	Agree
02	You use robots to make reservations	1.6	0.73	5	Strongly disagree
03	Robots provide credible answers (preferences, budget, etc.) as if they were humans	4.3	0.70	1	Strongly agree
04	You use robots for translation and communication with foreigners	4.2	0.82	2	Agree
05	You use robots to guide you when you're lost and to take you to specific areas and destinations	3.9	0.81	4	Agree
Dimension 02: Virtual Assistants and Chatbots		3.62	1.23	/	Agree

Source: Prepared by the researcher based on SPSS26 output.

The results of the table above show that most of the statements related to "virtual assistants and chatbots" received high scores, ranging from 1.6 to 4.3. The statement “robots provide credible answers (preferences, budget, etc.) as if they were humans” received the highest score of 4.3, with a standard deviation of 0.7. Conversely, the statement “robots are used to make reservations” received the lowest score estimated at 1.6, with a standard deviation of 0.73. Whereas, the overall mean for the dimension “virtual assistants and chatbots” was relatively high estimated at 3.62, with a standard deviation of 1.23.

3.5.3. Smart Booking Systems and Dynamic Pricing

Table .12. Analysis of Smart Booking Systems and Dynamic Pricing Items

N°	Statements	Mean	Standard Deviation	Rank	Evaluation
01	You use smart booking systems to book hotels, flights, tours, restaurants, etc.	1.3	0.70	4	Strongly disagree
02	You use smart booking systems as a complete alternative to travel agencies	1.45	0.65	3	Strongly disagree
03	Smart booking systems help reduce errors (booking dates, destinations, hotel selection, etc.)	1.6	0.83	2	Strongly disagree
04	Smart booking systems support dynamic pricing (notifying tourists of deals, avoiding peak times, etc.)	1.8	0.79	1	Strongly disagree
05	You trust smart booking systems and consider them secure, especially regarding electronic payments	1.45	0.74	5	Strongly disagree
Dimension 03: Smart Booking Systems and Dynamic Pricing		1.52	0.89	/	Strongly disagree

Source: Prepared by the researcher based on SPSS26 output.

The results of this table show that all statements related to “smart booking systems and dynamic pricing” received very low scores, ranging from 1.45 to 1.8. The statement “smart booking systems support dynamic pricing (notifying tourists of deals, avoiding peak times, etc.)” received the highest score of 1.8, with a standard deviation of 0.79. While, the statement “You trust smart booking systems and consider them secure, especially regarding electronic payments” received the lowest score of 1.45, with a standard deviation of 0.74. The overall mean for this dimension was 1.52, with a standard deviation of 0.89. This may be attributed to several factors, including the insufficient diffusion of such systems within the local environment, the lack of awareness regarding their use among the sample participants (professors and PhD students), and the restricted level of trust in electronic payment methods.

3.5.4. Hospitality and Accommodation

Table 13. Analysis of the Items within the "Hospitality and Accommodation" Dimension

Number	Statements	Mean	Standard Deviation	Rank	Evaluation
01	You receive instant recommendations for suitable activities based on time, weather, and location, which saves you time and effort and makes you feel welcomed.	4.21	0.92	1	Strongly agree
02	During your next visits, your preferences are automatically reflected, which makes you feel comfortable and welcomed.	1.5	0.86	4	Strongly disagree
03	The ease of communicating with foreigners through instant translation and dubbing in your native language makes you feel close and integrated.	4.05	0.70	2	Agree
04	You feel like a unique and special tourist from the moment you arrive through welcome messages on the room screen or via the app.	1.9	0.81	3	Disagree
05	You feel identified wherever you go	1.4	0.92	5	Strongly

(through smart cameras and facial recognition), which makes you feel safe, accommodated, and well-hosted.					disagree
Dimension 04: Hospitality and Accommodation	2.612	1.05	/		Neutral

Source: Prepared by the researcher based on SPSS26 output.

These results indicate that all statements related to "hospitality and accommodation" received moderate scores, ranging from 1.4 to 4.21. The statement "You receive instant recommendations for suitable activities based on time, weather, and location" received the highest score of 4.21, with a standard deviation of 0.92. On the other hand, the statement "You feel identified wherever you go (through smart cameras and facial recognition)" received the lowest score of 1.4, with a standard deviation of 0.92. Moreover, the overall mean score for this dimension was 2.612, with a standard deviation of 1.05.

3.5.5. Supporting Tourist Attractions

Table .14. Analysis of Items Related to the Dimension of Supporting Tourist Attractions

N°	Statements	Mean	Standard Deviation	Rank	Evaluation
01	You use your phone by pointing it at the tourist attraction to get a historical and 3D overview of the site.	2.6	0.81	3	Neutral
02	You take virtual tours of the sites and gain a comprehensive view of them.	2.55	0.82	4	Neutral
03	You receive immediate recommendations about crowded areas in the landmark and suggestions for less crowded spots.	2.53	0.69	5	Neutral
04	You interact with the smart educational games, which makes you feel engaged with the place and supports the tourist site.	4.8	1.20	1	Strongly agree
05	You observe immediate intervention when dangers or errors occur, through monitoring via AI-powered cameras.	4.7	0.92	2	Strongly agree
Dimension 05: Supporting Tourist Attractions		3.43	1.32	/	Agree

Source: Prepared by the researcher based on SPSS26 output.

The results of the table show that all the statements related to "supporting tourist attractions" received varying scores, ranging from 2.53 to 4.8. The statement "You interact with the smart educational games, which makes you feel engaged with the place and supports the tourist site" obtained the highest score of 4.8, with a standard deviation of 1.20. While, the lowest score of 2.53 was given to the statement "You receive immediate recommendations about crowded areas and suggestions for less crowded spots", with a standard deviation of 0.69. As for the overall mean of the dimension "supporting tourist attractions", it was 3.43, with a standard deviation of 1.32.

3.6. Testing the Study Hypotheses

3.6.1. Main Hypothesis

H_0 : There is no statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and tourism promotion.

H_1 : There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and tourism promotion.

Table 15. Pearson Correlation Coefficient: Between Artificial Intelligence and Tourism Promotion

Artificial Intelligence		
Tourism Promotion	Pearson Correlation Coefficient	0.81
	P-value Sig	0.03
	Coefficient of Determination R ²	0.65

Source: Prepared by the researcher based on SPSS26 output.

This table shows a strong direct correlation between artificial intelligence and tourism promotion. The correlation coefficient 0.81 indicates a strong direct relationship between the two study variables as it exceeds the value of 0.70. In contrast, we find that the coefficient of determination is 0.65, meaning that 65% of the variance in the tourism promotion can be explained by artificial intelligence, while the remaining 35% is attributed to other variables. Additionally, the p-value Sig=0.03 is less than the significance level 0.05, which confirms the validity of the alternative hypothesis stating that there is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and tourism promotion.

3.6.2. First Sub-Hypothesis

H_0 : There is no statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and “tourism recommendations and suggested trips.”

H_1 : There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and “Tourism Recommendations and Suggested Trips.”

Table 16. Pearson Correlation Coefficient between Artificial Intelligence and “Tourism Recommendations and Suggested Trips”

Artificial Intelligence		
Tourism Recommendations and Suggested Trips	Pearson Correlation Coefficient	0.71
	P-value Sig.	0.00
	Coefficient of Determination R ²	0.50

Source: Prepared by the researcher based on SPSS26 output.

The table above indicates a moderate direct correlation between artificial intelligence and “tourism recommendations and suggested trips”. The correlation coefficient 0.71 indicates a strong direct relationship between the two variables as it exceeds 0.70. Conversely, the coefficient of determination 0.50 means that 50% of the variance in the variable "tourist recommendations and suggested trips" can be explained by artificial intelligence, while the remaining 50% is attributed to other variables. On the other hand, the p-value Sig = 0.00 is less than the significance level 0.05. Therefore, this confirms the alternative hypothesis claiming that there is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and “tourism recommendations and suggested trips.”

3.6.3. Second Sub-Hypothesis

H_0 : There is no statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and virtual assistants and chatbots.

H_1 : There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and virtual assistants and chatbots.

Table 17. Pearson Correlation Coefficient between Artificial Intelligence and "Virtual Assistants and Chatbots"

Artificial Intelligence		
"Virtual Assistants and Chatbots"	Pearson Correlation Coefficient	0.79
	P-value Sig	0.01
	Coefficient of Determination R ²	0.62

Source: Prepared by the researcher based on SPSS26 output.

It appears from the table above that there is a strong direct correlation between artificial intelligence and virtual assistants and chatbots. The results highlight that the correlation coefficient 0.79, which exceeds the value of 0.70, indicates a strong direct relationship between the two study variables. Whereas, the coefficient of determination 0.62, means that 62% of the variation in virtual assistants and chatbots can be explained by artificial intelligence, while the remaining 38% is due to other factors. Furthermore, the p-value $Sig = 0.01$ is less than the level of significance 0.05, which supports the alternative hypothesis claiming that there is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and virtual assistants and chatbots.

3.6.4. Third Sub-Hypothesis

H_0 : There is no statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and Smart Booking Systems and Dynamic Pricing.

H_1 : There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and Smart Booking Systems and Dynamic Pricing.

Table 18. Pearson Correlation Coefficient between Artificial Intelligence and Smart Booking Systems and Dynamic Pricing

Artificial Intelligence		
Smart Booking Systems and Dynamic Pricing	Pearson Correlation Coefficient	0.69
	P-value Sig	0.00
	Coefficient of Determination R ²	0.38

Source: Prepared by the researcher based on SPSS26 output.

The table above reveals a moderate direct correlation between artificial intelligence and smart boking systems and dynamic pricing. The results reveal that the correlation coefficient between the two study variables is equal to 0.69, which indicates a moderate direct correlation between them, as it is less than the correlation value 0.70. In contrast, the coefficient of determination 0.47 means that 47% of the variance in smart booking systems and dynamic pricing is explained by artificial intelligence, while the remaining 53% is attributed to other variables. Additionally, since the p-value $Sig = 0.00$ is less than the 0.05 significance level, the alternative hypothesis claiming that there is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and smart booking systems and dynamic pricing is confirmed.

3.6.5. Fourth Sub-Hypothesis

H_0 : There is no statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and hospitality and accommodation.

H_1 : There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and hospitality and accommodation.

Table 19. Pearson Correlation Coefficient between Artificial Intelligence and Hospitality and Accommodation

Artificial Intelligence		
Hospitality and Accommodation	Pearson Correlation Coefficient	0.74
	P-value Sig.	0.01
	Coefficient of Determination R ²	0.54

Source: Prepared by the researcher based on SPSS26 output.

According to this table, there is a moderate direct correlation between artificial intelligence and hospitality and accommodation. The correlation coefficient 0.74 indicates a moderate direct relationship between the study variables as it does not exceed 0.70. Add to this, the coefficient of determination 0.54 indicates that 54% of the variance in hospitality and accommodation variable is explained by artificial intelligence, while the remaining 46% is attributed to other variables. On the other hand, the p-value Sig=0.01 is lower than the significance level 0.05. Consequently, the alternative hypothesis claiming that there is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and hospitality and accommodation is confirmed.

3.6.6. Fifth Sub-Hypothesis

H_0 : There is no statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and supporting tourist attractions.

H_1 : There is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and supporting tourist attractions.

Table 20. Pearson Correlation Coefficient between Artificial Intelligence and Supporting Tourist Attractions

Artificial Intelligence		
Supporting Tourist Attractions	Pearson Correlation Coefficient	0.83
	P-value Sig	0.01
	Coefficient of Determination R ²	0.68

Source: Prepared by the researcher based on SPSS26 output

The table highlights that there is strong direct correlation between artificial intelligence and supporting tourist attractions. The results reveal that the correlation coefficient 0.83, which exceeds the value of 0.70, indicates a strong direct relationship between the two study variables. Moreover, the coefficient of determination 0.68 means that 68% of the variance in the variable "supporting tourist attractions" can be explained by artificial intelligence, while the remaining 32% is due to other factors. For more, the p-value Sig = 0.01 is lower than the significance level 0.05, which confirms the alternative hypothesis that there is a statistically significant relationship at the $\alpha \leq 0.05$ significance level between artificial intelligence and supporting tourist attractions.

4. Conclusion

This study confirmed its main hypothesis, showing that artificial intelligence plays a significant role in enhancing and improving tourism. The findings highlighted several key contributions of AI: providing personalized recommendations and travel plans, offering real-time virtual assistance through chatbots, supporting smart booking systems and dynamic pricing, improving hospitality and tourist satisfaction, and strengthening the promotion and

management of tourist attractions. Based on above results, the study recommends raising awareness of AI applications in the tourism sector, building greater trust in digital services—particularly in secure payments—and encouraging tourism institutions to gradually adopt AI-driven systems to enhance competitiveness and efficiency.

4.1. Presentation of Hypothesis Testing Results

A. The study included a main hypothesis, which was confirmed, proving that artificial intelligence plays a significant role in enhancing and improving tourism.

B. Artificial intelligence can be used to provide tourist recommendations and suggested travel plans, either with the user's request or spontaneously. This contributes to saving time and offering potentially better destinations for tourists compared to their own choices.

C. Artificial intelligence can be used to offer virtual assistance through chatbots, which contributes to providing tourists with immediate and up-to-date information about their trips and solves the issue of real-time communication with foreigners.

D. Artificial intelligence can help activate smart booking systems and dynamic pricing, enabling tourists to obtain immediate bookings that align with their budgets and preferences.

E. Artificial intelligence enhances tourists' sense of hospitality and accommodation, speeding their integration into trips and boosting satisfaction from arrival.

F. Artificial intelligence is characterized by its ability to support tourist attractions, which helps to provide a better picture of these sites in terms of their management in addition to providing a better, immediate picture and overview of its history from the perspective of tourists.

4.2. Recommendations

Based on the findings of this study, the following recommendations are proposed to enhance the role of artificial intelligence in promoting tourism:

Encourage greater investment in artificial intelligence technologies within the tourism sector, particularly in recommendation systems, smart applications, booking services, and digital marketing, to ensure personalized and seamless tourist experiences.

Promote partnerships between universities and tourism institutions to develop training programs and joint research projects on AI applications in tourism, facilitating the transfer of knowledge from academia to practice.

Integrate AI into national and local tourism promotion strategies by leveraging big data analytics to identify tourist preferences and design precise, effective marketing strategies.

Support innovation and digital entrepreneurship in tourism, especially by fostering startups that create AI-based solutions such as virtual assistants, interactive maps, and intelligent platforms.

Establish continuous evaluation mechanisms to measure the effectiveness of AI applications in enhancing tourism services, using clear performance indicators to assess their impact on destination attractiveness and beneficiary satisfaction.

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