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The Contribution of Modern Technologies of Artificial Intelligence in the Marketing of Sports Tourist Services in the Kingdom of Saudi Arabia

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Abstract

Objectives: The tourism industry was among the first to be linked to advancements in the use of artificial intelligence techniques, which prompted nations to adopt an electronic tourism marketing strategy. Modern technologies are at the forefront of the interests of various business and service sectors. The purpose of the study was to shed light on how the usage of modern artificial intelligence techniques affected the promotion of sports tourist services.

Methods: To accomplish aimed of the study, the descriptive methodology (survey study method) was employed. Some employees of the Saudi Ministry of Tourism, the Saudi Tourism Development Fund, the Saudi Tourism Authority, as well as some employees of various tourism businesses and offices, participated in the study. The categories of the study population were used to intentionally choose the study sample. Two questionnaires were utilised by the researcher to obtain data from the 480 study participants.

Results: The findings showed a significant relationship between the marketing of sports tourism services and the use of contemporary artificial intelligence technology, which has a significant impact on the marketing of sports tourism services in a way that is simpler and more time and effort efficient.

Conclusions: Artificial intelligence algorithms can be used to estimate the level of marketing for sports tourist services. The study also offers insight into the policy implications, constraints, and future directions because it is highly likely that these technologies will be significant as a focus for future research.

Keywords: sports tourism, artificial intelligence, digital technology, sports institutions

Introduction

Since all nations are currently directed to use modern technologies in providing and marketing their tourism services (Tung, v. et al. 2020). the tremendous technological development has resulted in the expansion of the use of modern technologies in all industries, including the tourism industry (Koo, C. et al. 2019). These technologies helped provide cutting-edge digital solutions that enabled businesses to attract and retain customers (Wang W. et al. 2020). Perhaps the technology that has the biggest impact on these businesses is artificial intelligence (AI), particularly in terms of their marketing efforts (Anshari, M. et al. 2019), where businesses were able to use artificial intelligence to reach customers, learn about their past behaviour and predict their future behaviour (Davenport, T. et al. 2020), better satisfying their needs than rivals (Verma, S.,Tripathi, S. 2017), and finding creative solutions from the perspective of tourists, particularly those seeking information (ZHANG, S. et al. 2016) . In light of this, tourism businesses have embraced a variety of modern technologies in marketing and promoting their tourism services to achieve a number of fundamental goals, including raising their competitiveness and increasing the efficiency of using their resources (Noguera, j. et al. 2012). They have also built a sustainable competitive advantage through the use of modern technologies in the field of marketing tourism services (Hussain, I et al. 2020). Through it, tourists can inquire about tourist sites, obtain information, and plan the trip (Suanpang, P. 2020). Since artificial intelligence techniques can help forecast sales volume and consumer trends more accurately (Shen, S. et al. 2020) , the use of robots in warehousing and logistics operations can also increase the chance of managing these operations more effectively. The application of artificial intelligence is also visible in the accurate forecasting

of demand and supply for a variety of products. Smart (Bolton, R. et al. 2018), artificial intelligence also assists marketers in determining the company's vision and future course (Ma, S., Fildes, R. 2021), using cutting-edge technologies like text analysis software and machine learning algorithms in a variety of industries, including banking, tourism (Dekimpe, M. 2020), and environmental monitoring, and interacting with it in accordance with the response while considering all potential outcomes (Maxwell, A. et al. 2011).

Modern technologies aren't just information systems that are used; they're also a process for achieving full involvement and participation with tourists (Neuhofer, B. et al.2015), raising the calibre of tourism services (Buhalis D. & Sinarta Y. 2019), and serving as a starting point for the planning, designing, and management of tourism resources, including human resources and tourists as partners in tourism (Gretzel, U. et al. 2016). Where businesses rely on a variety of modern technologies to carry out their operations (MOHD, N. et al. 2020), where professionals and academics agree that artificial intelligence is the technology of the future that will guide commerce in light of the technological advancement that has connected the entire world into one network (Wirth, N. 2018). It should be mentioned, nonetheless, that doing so requires more than simply comprehending the client and figuring out what he wants and needs (Buonincontri, P., Micera, R. 2016). In order to win over customers and earn their loyalty, it is more crucial to present offerings that are in line with their needs and wants (Pai, C.et al. 2020).

As a result, sports tourism is a significant economic tributary because it is connected to two key industries that the Kingdom's Vision 2030 prioritised. The first is the tourism industry, where our primary focus is on maximising investment in tourist-related components while increasing the sector's contribution to the national gross product. The second is to grow the sports industry and grow it in a way that benefits the populace. The acceptability of individuals in charge of marketing and the movement towards artificial intelligence applications vary from firm to company. Some people in charge of marketing still have a phobia of employing highly advanced technology, despite market challenges and new factors forcing businesses to accept technology. Artificial intelligence technology has emerged as one of the most significant contemporary developments that represents the fourth technological revolution. It has been extensively used in the field of marketing by businesses and institutions to increase the effectiveness and success of their marketing process, with the rise in technical development and the number of products that are marketed electronically on Internet pages. Given the aforementioned, the purpose of this study is to determine how much artificial intelligence-related current technologies have contributed to the promotion of sports tourist services in the Kingdom of Saudi Arabia.

1.2. The Significance of the Research :

The significance of the study stems from the recent application of artificial intelligence techniques in general and in marketing in particular, which made it an area of interest in order to know its effects and related aspects. Whereas the tourism sector is one of the sectors that contribute significantly to increasing the national product in all countries of the world in general and the Kingdom of Saudi Arabia in particular, Everyone in charge of corporate operations worldwide is aware of the significance of utilising artificial intelligence, setting a positive trend towards its many uses, and realising the significance of this technology in generating value and boosting competitiveness.

1.3. Objectives :

By assessing the level of modern artificial intelligence technology's involvement in the promotion of sports tourism services in the Kingdom of Saudi Arabia, the objective is to make a statement about the effects of its use. In order to market sports tourism services in the Kingdom of Saudi Arabia, it is important to ascertain whether there is a statistically significant relationship between the use of modern technologies and the marketing of sports tourism services. This includes assessing the likelihood that artificial intelligence will be used in marketing sports tourism services using modern technologies.

1.4. Research Questions:

In light of the aim of the study, the researcher pondered the following issues:

- What is the reality surrounding the application to modern artificial intelligence techniques?
- How effective is marketing for sports tourist services?
- How much of an influence do modern artificial intelligence technologies have on the promotion of sports tourism in the Kingdom of Saudi Arabia?

- Do modern artificial intelligence techniques help with the marketing of sports tourist services in the Kingdom of Saudi Arabia?

1.5. Literature Review

The study's findings Yachin, J. (2018) showed that information technology tools are used by tourism businesses to create value, communicate with customers, and engage them in an active way while they are on vacation. This helps customers make decisions, increase their participation in the experience, and capture memories, which is reflected in marketing performance for tourism businesses. According to the study Morrison A. (2018), social media is a trustworthy source for learning about tourist attractions because users can refer to their friends' posts about their prior travels as a guide. Additionally, social media is used as a marketing and customer-attracting tool.

According to studies Burigat S. and Chittaro L. (2005), Lee, I.-J et al. (2017) , and Kim M. et al., (2020), current applications are crucial for assisting visitors as they navigate the proposal systems for these applications. Additionally, tracking systems are used, and their impact is seen by allowing visitors to plan, manage, and create their own tourism-related experiences. Additionally, this ensures that visitors participate positively and feel positively throughout the experience. Finally, this also enables visitors to solve problems while travelling, making it more flexible. While the study supported Huang MH., Rust, R.T.(2020), the findings showed that dependence on AI aids marketers in selecting and defining the best marketing strategy as well as organising marketing activity effectively.

This was demonstrated by the study's findings Dzyabura D., Hauser R. (2019), Misra K. et al. (2019), which showed that artificial intelligence-based market analysis techniques greatly aid in finding and identifying the right product for the customer and his needs, as well as designing the one that is most suited to his taste. As a result, the business is successful in providing the customer with a satisfying product. The study's findings de Bellis, E.; Johar, G. V. (2020) and Gacanin, H., Wagner, M. (2019) confirmed this, showing that reliance on modern artificial intelligence techniques aided in the development of what are known as independent marketing systems, which are used to guide the customer and make decisions on his behalf. These systems do this by analysing past customer behaviour and forecasting future behaviour and trends.

2. Materials and Methods

2.1. Research Sample

Employees of the Saudi Tourism Ministry, the Saudi Tourism Development Fund, the Saudi Tourism Authority, as well as some other tourism-related businesses and offices, made up the study population. The inclusion condition was that participants had more than 5 years of experience in their line of work since the study sample size was (480) people from the study population. The descriptive method was used by the researchers. The study sample's description is shown in Table (1).

Table 1. Description of the study sample

No.	Profile	Basic Sample	Sample Survey
1	employees of the Ministry of Tourism	**155**	**20**
2	Tourism Development Fund employees	**95**	**15**
3	Employees of the Saudi Tourism Authority	**120**	**15**
4	Employees of some tourism companies and offices	**110**	**10**
Total		480	**60**

2.2. Research Instruments

It was done with two questionnaires. The first questionnaire aims to determine the actual state of artificial intelligence utilisation in modern technology. It contains 29 phrases . The degree of each response from the study sample was estimated using a three-point Likert scale. Six different axes made up the questionnaire. services (SP), supporting infrastructure (SI), hardware and software (HS), digital services (DSP), processes and systems (PS), and data and information management (DIM) (see Appendix A). The second questionnaire attempts to uncover the truth about marketing sports tourist services. The study tool included thirty phrases, and the three Likert scale was employed to measure the scores of the study sample's responses (see Appendix B) . The tool's validity and stability were validated by calculating the internal flow coefficient using Cronbach's alpha, and the value of the

stability coefficient was 0.82 in general for the first tool and 0.84 in general for the second tool. When conducting this type of study, these percentages are appropriate.

2.3. Research Timeline

the study was carried out Between 3 May and 13 May, 2023.IBM SPSS Statistics 26.lnk, Chicago, IL, USA, was used to construct the social sciences statistical package. The data was analysed using multiple regression analysis, percentages, mean responses, chi-squares, and the Pearson and Cronbach correlation coefficients. The statistical software for the social sciences (SPSS) was used to determine the statistical coefficients and the level of significance (0.05).

3. Results

Figure 1 shows the average and percentage of responses to the questions about the practicality of using modern artificial intelligence techniques

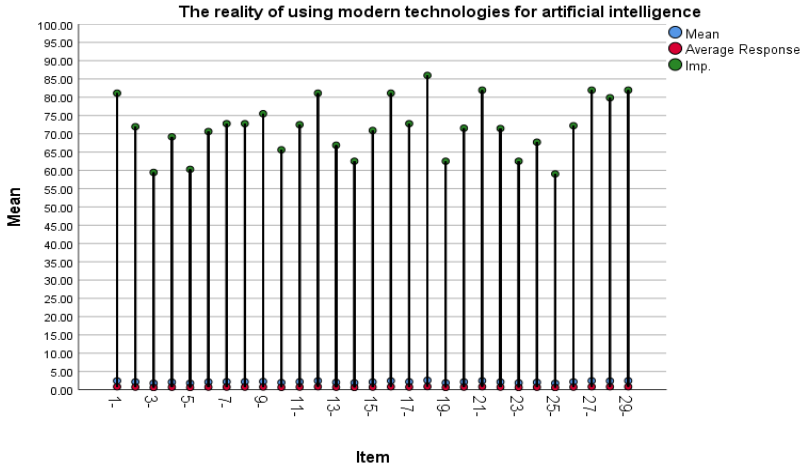

Figure 1 shows the responses to a particular questionnaire on the practicality of using modern artificial intelligence technology.

Table 2. presents the responses and X2 of a questionnaire on the reality of using modern technologies for artificial intelligence, where the average response ranges for the service providers axis between (0.59: 0.81), the support infrastructure axis between (0.71: 0.75), the hardware and software axis between (0.62: 0.81), and the axis of support between (0.71: 0.75), and the digital services provided between (0.62: 0.86).

Table 2. Mean and Std. Deviation, average response and X2 for The reality of using modern technologies for artificial intelligence (n=480)

No.	Item	Mean	SD	Average Response	X^2	Sig.	Imp. Percentage
The first axis—service providers (SP)							
1-	Artificial intelligence specialists are being drawn from both inside and beyond the area.	2.43	0.61	0.81	160.55	0.001	81.11%
2-	A human basis is being built to keep up with the advancement of artificial intelligence technology.	2.16	0.77	0.72	23.45	0.001	71.94%
3-	a qualified work team and an assistant trainer are available For artificial intelligence technologies.	1.78	0.88	0.59	87.95	0.001	59.44%
4-	Contracts for collaboration with specialists in artificial intelligence technologies are triggered.	2.08	0.76	0.69	22.20	0.001	69.17%
5-	Users of the system can communicate effortlessly because to the software used.	1.81	0.90	0.60	99.05	0.001	60.28%
The second axis—Supporting infrastructure (SI)							

6-	Modern and appropriate for the needs of the task, the technology employed.	2.12	0.86	0.71	22.99	0.001	70.63%
7-	A strong supporting infrastructure (networks, software, and the Internet) is available.	2.18	0.78	0.73	25.55	0.001	72.78%
8-	There is continuous development of plans and programs that support artificial intelligence technologies.	2.18	0.75	0.73	33.80	0.001	72.78%
9-	The infrastructure of hardware and software is constantly monitored to ensure its validity during application.	2.26	0.70	0.75	74.79	0.001	75.49%
The third axis—Hardware and software (HS)							
10-	There is interest in introducing new technological software to improve the quality of work.	1.97	0.77	0.66	12.19	0.002	65.62%
11-	Electronic devices and computer programs are continuously maintained and updated.	2.18	0.78	0.73	25.55	0.001	72.78%
12-	Computers designed for systems are characterized by keeping pace with technological development.	2.43	0.61	0.81	160.55	0.001	81.11%
13-	Advanced programming languages are used in order to continuously develop its business.	2.01	0.80	0.67	2.74	0.254	66.88%
14-	There are numerous systems and technologies that use the digital information method.	1.88	0.81	0.62	11.25	0.004	62.50%
The fourth axis—Digital services provided (DSP)							
15-	Customers are targeted by ads based on their surfing history and cookie information.	2.13	0.76	0.71	25.89	0.001	70.90%
16-	Through numerous smart gadgets and internet applications, services are offered and made available.	2.43	0.61	0.81	160.55	0.001	81.11%
17-	Cookies, visits, and other methods are used to analyse the client profile.	2.18	0.78	0.73	25.55	0.001	72.78%
18-	There is an increase in electronic platforms and markets.	2.58	0.61	0.86	244.55	0.001	85.97%
19-	**The system used allows more than one beneficiary to connect at one time.**	**1.88**	**0.81**	**0.62**	**11.25**	**0.004**	62.50%

Continued table2.

No.	Item	Mean	SD	Average Response	X^2	Sig.	Imp. Percentage
The fifth axis—Processes and systems (PS)							
20-	The technologies used are constantly evaluated and users' needs diagnosed.	2.15	0.87	0.72	38.75	0.001	71.53%
21-	Safe and reliable machines and robots are ensured.	2.46	0.61	0.82	166.25	0.001	81.94%
22-	There are social network monitoring tools that analyze social networks.	2.14	0.87	0.71	37.39	0.001	71.46%
23-	There are systems for analyzing market fluctuations, predicting general trends, and analyzing customer behavior.	1.88	0.81	0.62	11.25	0.004	62.50%
24-	Advanced data analysis and forecasting techniques are available to enhance business intelligence systems.	2.03	0.81	0.68	0.94	0.626	67.71%
The sixth axis—Data and Information Management (DIM)							
25-	Software is available that works on active forecasting through data analysis.	1.77	0.80	0.59	38.75	0.001	59.03%
26-	The currently used databases provide adequate data protection.	2.17	0.75	0.72	35.00	0.001	72.22%

27-	The database is continuously updated and modified to keep pace with emerging changes.	2.46	0.61	0.82	166.25	0.001	81.94%
28-	The current software provides sufficient data and information for workers and beneficiaries.	2.40	0.64	0.80	136.25	0.001	79.86%
29-	There is an information systems and artificial intelligence unit with a clear mechanism of action.	2.46	0.61	0.82	166.25	0.001	81.94%

Table 2 makes it evident that the values of X2 for the data from the questionnaire on the practicality of applying modern artificial intelligence techniques are statistically significant (P < 0.05). The KMO values for the questionnaire's axes (SP, SI, HS, DSP, PS, and DIM) were, however, (0.803, 0.387, 0.851, 0.845, 0.841, and 0.831), respectively, which denotes a substantial level. According to Kaiser (1974), the KMO values for the entire questionnaire were (0.899), indicating a high level, and the Barlett's test for sphericity was significant (P = 0.001).The mean and percentage of the replies to the survey data for the marketing of sports tourist services are shown in Figure 2.

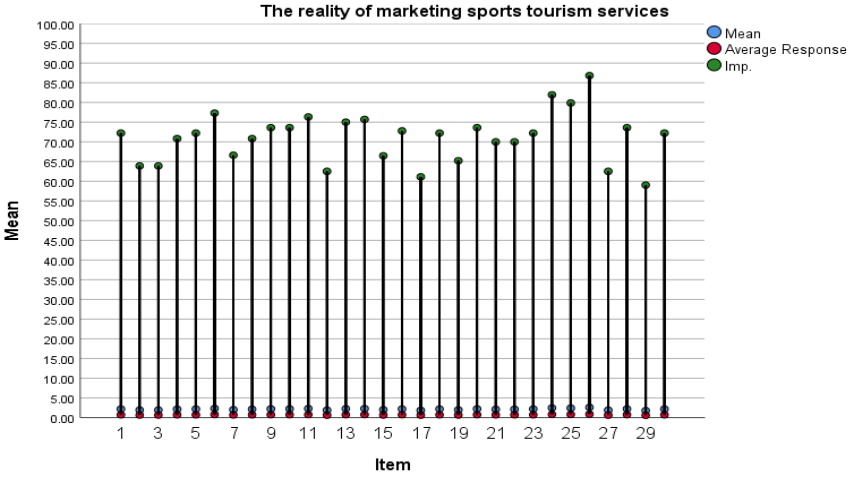

Figure 1 shows the results of the questionnaire on the effectiveness of marketing sports tourism services.

Table 3. The average response for the Interest in marketing sports tourism services (IMSTS) axis ranged between (0.64: 0.77), the Beneficiary service (BS) axis ranged between (0.62: 0.76), the Promoting and revitalising sports tourism services (PRSTS) axis ranged between (0.61: 0.74), and the Modern trends for sports tourism services (MTSTS) axis ranged between (0.59: 0.87).

Table 3. Mean and Std. Deviation, average response and X^2 for The reality of marketing sports tourism services (n=480)

No.	Item	Mean	SD	Average Response	X^2	Sig.	Imp. Percentage
The first axis—Interest in marketing sports tourism services (IMSTS)							
1-	Artificial intelligence marketing programs are available.	2.17	0.75	0.72	35.00	0.001	72.22%
2-	Tourist cadres are trained to use modern technologies in marketing tourism services.	1.92	0.76	0.64	20.00	0.001	63.89%
3-	The strengths, weaknesses, opportunities and threats facing tourism marketing are analyzed.	1.92	0.79	0.64	8.75	0.013	63.89%
4-	The marketing activity of the establishment is based on the scientific principles of marketing.	2.13	0.78	0.71	15.00	0.001	70.83%
5-	Sports tourism services are primarily offered through websites.	2.17	0.75	0.72	35.00	0.001	72.22%

6-	In order to cater to different tourist demographics, the tourism product is being enhanced and new tourism activities are emerging.	2.32	0.71	0.77	81.04	0.001	77.29%
7-	The Ministry of Tourism works in conjunction with various stakeholders to implement cutting-edge marketing strategies.	2.00	0.82	0.67	0.013	0.994	66.60%
The second axis—Beneficiary service (BS)							
8-	Utilising contemporary technology, clients are tracked and their issues are tracked.	2.13	0.81	0.71	11.25	0.004	70.83%
9-	An information technology-based marketing strategy is in place to keep track of customer wants and demands.	2.21	0.79	0.74	31.25	0.001	73.61%
10-	Targeted tourism markets are studied and their desires and needs are determined.	2.21	0.76	0.74	35.00	0.001	73.61%
11-	Online reservations can be made and confirmed more quickly and precisely.	2.29	0.71	0.76	74.64	0.001	76.32%
12-	Customers can plan their route through social media as part of a marketing strategy.	1.88	0.91	0.62	71.25	0.001	62.50%
13-	Websites are developed that exhibit some kind of consumer audience communication.	2.25	0.69	0.75	78.75	0.001	75.00%
14-	To ensure the security and safety of digital payments, the essential actions are available.	2.27	0.73	0.76	61.25	0.001	75.69%
The third axis—Promoting and revitalizing sports tourism services (PRSTS)							
15-	Data on the tourism and hotel sector are clearly available to the browser on the Internet.	1.99	0.79	0.66	4.99	0.083	66.46%
16-	An organization is available to market and manage tourist destinations for each tourist area.	2.18	0.83	0.73	31.55	0.001	72.78%
17-	Tourism advertising is carried out through international exhibitions and stock exchanges.	1.83	0.92	0.61	113.75	0.001	61.11%
18-	The sales policy is set to promote tourism services and places.	2.17	0.75	0.72	35.00	0.001	72.22%
19-	Advertising and presentations are made internally and externally, in order to spread the culture of tourism marketing.	1.96	0.79	0.65	4.76	0.092	65.21%
20-	**Modern applications cover all places and tourist patterns.**	**2.21**	**0.74**	**0.74**	**46.25**	**0.001**	73.61%

Continued table2.

No.	Item	Mean	SD	Average Response	X^2	Sig.	Imp. Percentage
21-	Electronic promotional campaigns are designed for customers through the use of modern technologies.	2.10	0.77	0.70	16.80	0.001	70.00%
22-	Promotional performance is enhanced and potential customer expectations are managed.	2.10	0.77	0.70	16.80	0.001	70.00%
The fourth axis—Modern trends for sports tourism services (MTSTS)							
23-	There is a tendency to use modern technologies in providing and marketing tourism services.	2.17	0.77	0.72	23.75	0.001	72.22%
24-	Companies are moving towards digitizing sports tourism services.	2.46	0.61	0.82	166.25	0.001	81.94%

25-	Modern technologies play a role in communication between tourists and tourist destinations.	2.40	0.64	0.80	136.25	0.001	79.86%
26-	Financial resources are available to use modern technologies in marketing tourism services.	2.60	0.60	0.87	271.25	0.001	86.81%
27-	There are legal restrictions on the application of service marketing through the use of modern technologies.	1.88	0.81	0.62	11.25	0.004	62.50%
28-	There is a clear framework for the recognition of the electronic signature or signature.	2.21	0.74	0.74	46.25	0.001	73.61%
29-	Purchasing behavior is analyzed and studied through the use of modern technologies.	1.77	0.80	0.59	38.75	0.001	59.03%
30-	The technical foundation for smart tourism is continually being improved.	2.17	0.75	0.72	35.00	0.001	72.22%

Table 3 makes it evident that the X2 values for the data from the questionnaire on the reality of sports tourist services marketing are statistically significant (P < 0.05). In contrast, the KMO values for the questionnaire's axes (IMSTS, BS, PRSTS, and MTSTS) were (0.854, 0.912, 0.885, 0.788), respectively. This number denotes a substantial level. According to Kaiser (1974), the KMO values for the entire questionnaire were (0.822), indicating a high level, and the Barlett's test for sphericity was significant (P = 0.001). Figure 3 shows the correlations between the marketing of sports tourist services and the employment of modern artificial intelligence techniques.

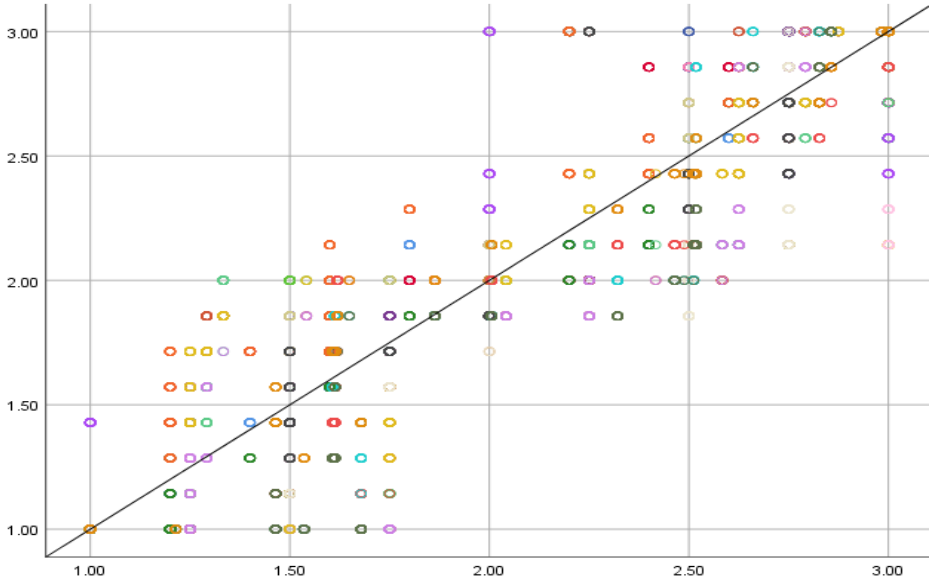

Figure 3 shows the correlation coefficients between the marketing of sports tourist services and the application of modern artificial intelligence technology.

Table 4. Correlation coefficients for the use of modern techniques of artificial intelligence and marketing of sports tourism services (n = 480).

The use of modern techniques of artificial intelligence		Marketing tourism and sports services			
		IMSTS	BS	PRSTS	MTSTS
1	SP	0.910**	0.912**	0.974**	0.932**
2	SI	0.943**	0.928**	0.976**	0.951**
3	HS	0.928**	0.919**	0.943**	0.944**
4	DSP	0.953**	0.962**	0.938**	0.935**
5	PS	0.951**	0.933**	0.941**	0.933**
6	DIM	0.940**	0.934**	0.963**	0.967**

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

As can be seen from Table 4, there is a strong direct link with a statistically significant level (P = 0.001) between the usage of modern artificial intelligence techniques and the marketing of sports tourism services.

Figure 3 illustrates the normality of the residuals' distribution and the data gathered regarding the straight line, indicating that the residuals have a normal distribution. It is obvious from the graph that there is no discernible pattern for the points in the figure, which is compatible with the linearity requirement for the regression test. The graph also shows the shape of the spread of the residuals with the predicted values.

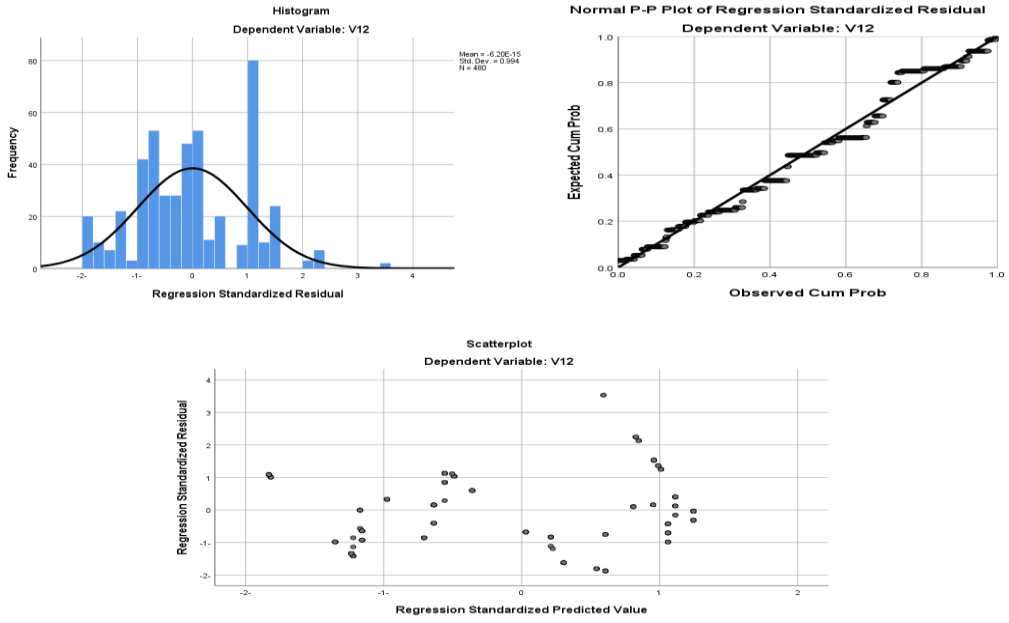

Figure 4. Multiple regression analysis

Table 5. displays the results of the multiple regression analysis between the axes of the questionnaires for marketing sports tourist services and the application of modern artificial intelligence techniques.

Table 5. Regression Results.

R Square	**0.968**
F value	2387.23
Significance	0.001
Beta of SP	0.259
Beta of SI	0.184
Beta of HS	0.146
Beta of DSP	0.246
Beta of PS	0.429
Beta of DIM	0.593

We aimed to comprehend the connection between the marketing of sports tourist services and the use of modern techniques of artificial intelligence. In Table 5, the marketing of sports tourist services was the dependent variable, and the variables of employing contemporary artificial intelligence techniques were evaluated as explanatory variables. The study of multiple linear regression findings revealed that the F-Value (P = 0.001) of the regression model indicates that it is significant. The model is reliable, it can be said. There is a connection between the marketing of sports tourist services and the use of modern techniques of artificial intelligence.The results show that the explanatory variables explain (96.8%) of the variation in the marketing of sports tourism services, by looking at the coefficient of determination (r^2), which indicates the strength of the relationship between the

marketing of sports tourism services and the use of modern techniques of artificial intelligence. The value of Beta that explains this relationship was (p = 0.001). The table also shows the results of the plurality test, where the result revealed the variance inflation factor of the model was smaller than (3), which indicates that there is no linear plurality problem between the model variables. Thus, we can write the regression equation as follows:

Marketing for sports tourist services = 0.210 + (0.259 × SP) + (0.184 × SI) + (0.146 × HS) + (0.246 × DSP) + (0.429 × PS) + (0.593 × DIM) + error term.

4. Discussion

We attributed this result to the fact that the rapid advancement of technology has resulted in an expansion of the use of modern technology across all industries, including the Internet, big data, and artificial intelligence. All businesses and organisations are now required to market and provide their services using modern technology, as these tools have contributed to the creation of digital solutions. The advantages of applying modern artificial intelligence techniques can be seen in the accurate forecasting of demand and supply for various products (Wang W. et al. 2020). where artificial intelligence techniques can contribute to improving customer attraction and retention and giving these businesses a competitive advantage. anticipating sales volume and consumer trends with greater accuracy (ZHANG, S. et al. 2016). Given the benefit and the enormous impact of the application of artificial intelligence and the added value it represents for companies that exploit it in All areas, in addition to its impact on the companies' gross domestic product, there is reliance on various modern technologies by businesses operating in all business activities today, especially with the growing number of Internet users and the number of products that are marketed electronically on Internet pages. This is in line with the research of Burigat, s. & chittaro, L . (2005);Lee I.-J. et al. (2017) ,which found that customer tracking systems and proposal systems for current applications both play significant roles.

While the study supported Huang, MH., Rust, R.T. (2020), the findings showed that marketers may choose and define the right marketing strategy as well as organise marketing activity effectively and efficiently with the use of artificial intelligence.

This was demonstrated by the findings of the studies conducted by Misra, K. et al. (2019) and Dzyabura ,D.; Hauser,J.R. (2019), which confirmed that market analysis techniques based on artificial intelligence greatly aid in finding and identifying the appropriate product for the customer and his needs, as well as the most suitable design for his taste. As a result, the company is successful in providing a product to satisfy the customer. According to Rust, R.T. (2020) technological advancements in particular are having a significant impact on marketing. As a result, customer interactions are becoming stronger and the service economy is continuing to grow. Marketing is being revolutionised by artificial intelligence, big data, the Internet, and the growth of networks.

This was supported by the study de Bellis, E.; Johar, G.V.(2020), Gacanin, H., Wagner, M. (2019), which found that the use of modern artificial intelligence techniques influenced the creation of what are known as independent marketing systems, which are used to guide customers and make decisions on their behalf. These systems analyse past customer behaviour to predict future behaviour and trends. We also attributed this outcome to the modern digital solutions that these technologies helped create, which allowed businesses to draw in and keep customers more successfully than they could have through more conventional means. This gave them a competitive edge because the businesses could use artificial intelligence to reach the customer, understand his behaviour, and predict his future behaviour. As a result, he is able to better satisfy his needs than rivals and find creative solutions from the perspective of tourists, particularly when they are looking for information. A sustainable competitive advantage can be built through the use of modern technologies in the field of marketing tourism services, through which tourists can inquire about tourist sites, obtain information, plan their trips, and more [3,7]. As a result, tourism companies have adopted a variety of modern technologies in marketing and promoting their tourism services in order to achieve basic goals, including increasing their competitiveness and raising the efficiency of using their resources (Noguera, j.M. et al. 2012,Yang, M. et al. 2023).

This is supported by the study's findings Yachin , J.M.(2018),which established that the information technology tools that tourism businesses rely on to add value, communicate with customers, and engage them in an active way during their travels aid in their decision-making, boost their participation in the experience, and help them capture their memories. These findings are reflected in the marketing success of tourism businesses. This is in line with the study Morrison AM. (2018), which found that social media is an effective tool for promoting and attracting customers as well as ensuring that they have a thorough understanding of the tourist attractions through first-hand experiences. Tourists can use social media as a reference by looking at posts made by their friends about previous experiences. artificial intelligence aids marketing professionals in determining the vision and future direction of the company, Through the use of cutting-edge technologies like text analysis software and machine learning algorithms in the tourism sector, as well as monitoring the environment and interacting with it according to the reaction while taking into account all possible possibilities. The findings of studies Dzyabura ,D.; Hauser,J.R. (2019); Misra, K.et al. (2019); de Bellis, E.; Johar, G.V. (2020); Gacanin, H., Wagner, M. (2019);

Rust R.T. (2020); Yang, M. et al. (2023); Widianingsih, I. (2023); Martina N. et al. (2023) that supported the notion that dependence on modern artificial intelligence techniques aided in the development of It is referred to as independent marketing systems, which are used to guide the customer and make decisions on his behalf. These systems examine customer behaviour and forecast their future behaviour and directions. Artificial intelligence-based market analysis techniques greatly aid in finding and determining the appropriate product for the customer and his needs.

4.1.Study Limitations and Strengths

Practices in sustainable sports tourism still face challenges and limitations. The lack of normative guidance in sustainable sports tourism hinders the integration of activities and objectives. The integration between tourism and sports attracts more participants and those interested in this field, while promoting coexistence and economic development. Furthermore, collaboration and knowledge sharing between stakeholders, i.e. regulators, authorities, communities and tourism agencies, leads to the development of normative guidelines in the field of sustainability (Heebkhoksung, K. et al. 2023). Several restrictions are taken into consideration while interpreting the study's findings. Despite the significance of this study, there are several restrictions. The study used a survey questionnaire, which may have shown the respondents' bias in some of the questions while hiding some information, which impacts the comprehensiveness of some indicators. The huge sample size was representative of the strengths, which may have helped the results be generalizable.

5. Conclusions

The purpose of the study was to shed light on how the usage of modern artificial intelligence techniques affected the promotion of sports tourist services. There were 480 participants in the study. Data collection involved the use of two questionnaires. The study's findings revealed a strong link between the promotion of sports tourist services and the application of modern artificial intelligence technology. The level of marketing for sports tourist services may be predicted with the help of artificial intelligence tools. These technologies are very likely to be significant as a topic of future research, attracting interest from those with an interest in and expertise in the fields of tourism and sports, in addition to the interest of institutions dedicated to sports tourism to further research and study from a financial, marketing, and technological perspective. According to the study, in order to facilitate the efficient use of these technologies and promote tourism, it is important to strive to support the technological infrastructure in tourist attractions, hotels, and restaurants. educating decision-makers about the experiences of nations with cutting-edge centres for tourism marketing in order to help the tourism industry with these technologies. Work on preparing employees in the tourism industry to produce tourism services using cutting-edge artificial intelligence technology. Promote e-marketing as a way of life for travel-related services. supplying the funds required to support the concept of smart cities. using information and communication technology professionals to build marketing programmes in a technological way that achieves a wide spread of marketing tourism services, spreading the culture of sustainable tourism service marketing through current technologies.

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Supplementary Materials:

Appendix A: The appendix includes a questionnaire about the employment of modern artificial intelligence technology .

Table S2: A survey of the usage of modern artificial intelligence techniques

No.	Item	Response		
		Yes	to some extent	No
The first axis—service providers (SP)				

1-	Artificial intelligence specialists are being drawn from both inside and beyond the area.			
2-	A human basis is being built to keep up with the advancement of artificial intelligence technology.			
3-	a qualified work team and an assistant trainer are available For artificial intelligence technologies.			
4-	Contracts for collaboration with specialists in artificial intelligence technologies are triggered.			
5-	Users of the system can communicate effortlessly because to the software used.			
	The second axis—Supporting infrastructure (SI)			
6-	Modern and appropriate for the needs of the task, the technology employed.			
7-	A strong supporting infrastructure (networks, software, and the Internet) is available.			
8-	There is continuous development of plans and programs that support artificial intelligence technologies.			
9-	The infrastructure of hardware and software is constantly monitored to ensure its validity during application.			
	The third axis—Hardware and software (HS)			
10-	There is interest in introducing new technological software to improve the quality of work.			
11-	Electronic devices and computer programs are continuously maintained and updated.			
12-	Computers designed for systems are characterized by keeping pace with technological development.			
13-	Advanced programming languages are used in order to continuously develop its business.			
14-	There are numerous systems and technologies that use the digital information method.			
	The fourth axis—Digital services provided (DSP)			
15-	Customers are targeted by ads based on their surfing history and cookie information.			
16-	Through numerous smart gadgets and internet applications, services are offered and made available.			
17-	Cookies, visits, and other methods are used to analyse the client profile.			
18-	There is an increase in electronic platforms and markets.			
19-	The system used allows more than one beneficiary to connect at one time.			
	The fifth axis—Processes and systems (PS)			
20-	The technologies used are constantly evaluated and users' needs diagnosed.			
21-	Safe and reliable machines and robots are ensured.			
22-	There are social network monitoring tools that analyze social networks.			
23-	There are systems for analyzing market fluctuations, predicting general trends, and analyzing customer behavior.			
24-	Advanced data analysis and forecasting techniques are available to enhance business intelligence systems.			
	The sixth axis—Data and Information Management (DIM)			
25-	Software is available that works on active forecasting through data analysis.			
26-	The currently used databases provide adequate data protection.			
27-	The database is continuously updated and modified to keep pace with emerging changes.			
28-	The current software provides sufficient data and information for workers and beneficiaries.			
29-	There is an information systems and artificial intelligence unit with a clear mechanism of action.			

Appendix B : The appendix includes a questionnaire about the The reality of marketing sports tourism services

Table S2: A survey of The reality of marketing sports tourism services

No.	Item	Response		
		Yes	to some extent	No

The first axis—Interest in marketing sports tourism services (IMSTS)				
1-	Artificial intelligence marketing programs are available.			
2-	Tourist cadres are trained to use modern technologies in marketing tourism services.			
3-	The strengths, weaknesses, opportunities and threats facing tourism marketing are analyzed.			
4-	The marketing activity of the establishment is based on the scientific principles of marketing.			
5-	Sports tourism services are primarily offered through websites.			
6-	In order to cater to different tourist demographics, the tourism product is being enhanced and new tourism activities are emerging.			
7-	The Ministry of Tourism works in conjunction with various stakeholders to implement cutting-edge marketing strategies.			
The second axis—Beneficiary service (BS)				
8-	Utilising contemporary technology, clients are tracked and their issues are tracked.			
9-	An information technology-based marketing strategy is in place to keep track of customer wants and demands.			
10-	Targeted tourism markets are studied and their desires and needs are determined.			
11-	Online reservations can be made and confirmed more quickly and precisely.			
12-	Customers can plan their route through social media as part of a marketing strategy.			
13-	Websites are developed that exhibit some kind of consumer audience communication.			
14-	To ensure the security and safety of digital payments, the essential actions are available.			
The third axis—Promoting and revitalizing sports tourism services (PRSTS)				
15-	Data on the tourism and hotel sector are clearly available to the browser on the Internet.			
16-	An organization is available to market and manage tourist destinations for each tourist area.			
17-	Tourism advertising is carried out through international exhibitions and stock exchanges.			
18-	The sales policy is set to promote tourism services and places.			
19-	Advertising and presentations are made internally and externally, in order to spread the culture of tourism marketing.			
20-	Modern applications cover all places and tourist patterns.			
21-	Electronic promotional campaigns are designed for customers through the use of modern technologies.			
22-	Promotional performance is enhanced and potential customer expectations are managed.			
The fourth axis—Modern trends for sports tourism services (MTSTS)				
23-	There is a tendency to use modern technologies in providing and marketing tourism services.			
24-	Companies are moving towards digitizing sports tourism services.			
25-	Modern technologies play a role in communication between tourists and tourist destinations.			
26-	Financial resources are available to use modern technologies in marketing tourism services.			
27-	There are legal restrictions on the application of service marketing through the use of modern technologies.			
28-	There is a clear framework for the recognition of the electronic signature or signature.			
29-	Purchasing behavior is analyzed and studied through the use of modern technologies.			
30-	The technical foundation for smart tourism is continually being improved.			

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