Analyzing the impact of customer experience in medical tourism marketing-A case study of Al-Kafeel Specialist Hospital in the holy city of Karbala

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Abstraction

This study uses partial least squares structural equation modeling (PLS-SEM) to examine how customer experience affects medical tourism marketing. Methodology: The study looks at how visitor contentment, service quality, amenities, and environmental security affect visitor loyalty and satisfaction in the medical tourism industry. The study's basic data came from a questionnaire given to 580 foreign visitors who came to Karbala for medical care. The data was examined using the researcher's structural equation modeling (SEM) program, Smart PLS 3.0. According to statistical analysis, patient visits to private hospitals in Karbala are influenced by service quality, while tourist satisfaction is the main factor influencing loyalty. The marketing and operational divisions must work together to implement these suggestions, and the outcomes must be tracked using transparent performance metrics.

Keywords: PLS-SEM, tourism facilities, satisfaction, loyalty, and service quality.

Overview:

One of the most profitable categories of contemporary travel, medical tourism is expanding quickly and has a significant impact on the economic development of many nations. When the state budget is being created, medical tourism revenues are taken seriously. At a cumulative annual growth rate (CAGR) of 23.03%, the medical tourism market is projected to rise from its 2024 valuation of US$84.92 billion to US$239.37 billion by 2029. The market is expected to rise during the forecast period due to a number of factors, including improved adherence to international quality and service standards, the availability of the newest medical technologies, lower medical expenses in developing nations, and marketing support for medical tourism. (Кудряшова, 2024). The average bill for a medical tourist in the host city is ten times more than that of a regular visitor, according to global statistics. Furthermore, a specific percentage of these tourists return for preventative care or later phases of therapeutic therapy (Петрова et al., 2021).

Promoting international medical tourism is really important. A thorough industry growth plan may not be implemented if consumer input and experiences are not taken into account in this area. This highlights how crucial it is to research different facets of consumer experiences at the market level (healthcare facilities), as well as how crucial it is to look at specific regulations in order to facilitate the growth of new organizational activity areas. It is important to consider medical tourism services as novel goods that are separately managed inside healthcare organizations' providing structures.

This necessitates changing the current method for developing and implementing strategies.

The internal, subjective reaction of consumers to every encounter with a business is known as the customer experience. The term "customer experience" describes a comprehensive encounter that may involve several channels and includes the phases of research, purchase, consumption, and post-purchase or consumption experience. In contrast, in a setting like medical tourism, patients and their companions perceive their experience as a synthesis of their real hospital stay, the tangible results of that stay, the sensory stimulation, and the emotions evoked in this facility, all of which are intuitively compared to their expectations. They subtly assess their experience by comparing it to their preconceived notions about hospitals. This generates crucial moments for determining how satisfied patients are with the treatments they received; if the results are favorable, this encourages word-of-mouth referrals and prompts them to think about returning to the hospital in the future (Quan et al., 2021).

Numerous ideas have addressed the function and status of customer experience. According to research, positive business outcomes like customer satisfaction and loyalty can be effectively influenced by the customer experience (Prentice et al., 2019). The client is the primary pillar of marketing, according to research on marketing theories and concepts. As a result, organizations, institutions, and businesses will benefit from customer happiness while suffering from dissatisfaction. Furthermore, in today's world, the significance of the customer experience has emerged as a key concern for scholars and marketing experts (Gahler et al., 2019). Every experience contains both subjective and objective elements, thus it's critical for researchers to comprehend them completely. Determining the intelligible significance of people's experiences is more important than comprehending reality. Additionally, experience is about remembering, where the event is reflected upon after having lived it, rather than reflecting on it while undergoing it (Cooper et al., 2022). In a particular context or circumstance, experience is a direct and instantaneous perception that a person has together with a sort of immediate cognizance. The four primary components of this domain—lived body, lived time, lived space, and lived human relationships—combine to form an interrelated whole (Zahra et al., 2021).

Established as investment-grade healthcare facilities, private hospitals are the second contributor to the city's health environment in the holy city of Karbala. One of the medical facilities connected to the al-Abbas's (p) Holy Shrine is Al-Kafeel Specialist Hospital. It is the Holy Shrine's way of supporting the medical community in Iraq in general and the holy city of Karbala in particular. The Middle East Hospital Construction Exhibition and Conference, which took place in the United Arab Emirates, named the hospital one of the region's top future hospitals. As one of the top five hospitals in the Middle East, the hospital received a certificate that, with luck, would help the Iraqi health system. Patients will receive top-notch medical care without having to deal with the trouble and cost of travel. This is due to the fact that it provides the most uncommon surgical specializations, employing cutting-edge technology and a skilled workforce in an effort to deliver high-quality, cutting-edge healthcare at reasonable costs. The hospital was constructed on 10,000 square meters of land, of which 5,000 square meters were set aside for the hospital's construction and an additional 5,000 square meters for outside services. The hospital's main building, which has 200 beds, is made

up of six storeys: the first floor, four upper floors, and an underground basement.

This study uses partial least squares structural equation modeling (PLS-SEM) to examine the impact of customer experience in medical tourism marketing. Principal inquiry for the study: What are the main elements influencing the medical tourism client experience?

Sub-questions for research:
1. How does a patient's experience (from the research stage to after treatment) affect their loyalty and referrals to medical facilities?
2. What are the most crucial quality standards that consumers search for while traveling for medical treatment?
3. How do consumers' expectations and assessments of the medical tourism experience depend on cultural and societal factors?
Principal Hypothesis:
In the medical tourism industry, the factors of service quality, visitor amenities, environmental security, and visitor happiness all have a statistically significant beneficial impact on visitor loyalty.

Sub-Hypotheses:
1. Service quality and visitor loyalty are positively correlated in a statistically significant way.
2. The availability of tourist amenities and visitor loyalty are positively correlated in a statistically meaningful way.
3. There is a statistically significant positive correlation between loyalty and visitor satisfaction.
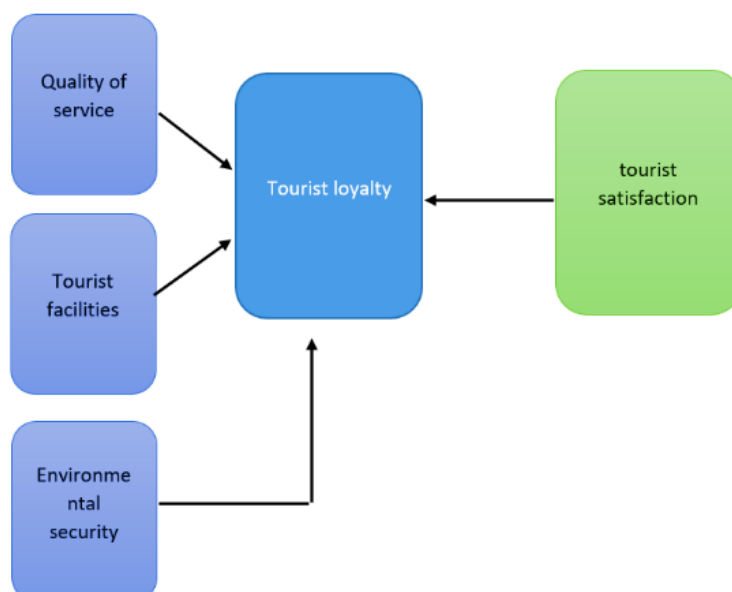
Plan of study (created by the researcher)

Literature for Research

The internal and subjective reaction of customers to each and every encounter with a business is known as the customer experience. A customer's cognitive, emotional, sensory, physical, and social responses to the merchant are all included in the holistic concept of customer experience. The search, purchase, consumption, and post-purchase phases are all included in the customer experience, which may involve a variety of buying channels. The foundation of the experience-based approach is the idea that the consumer lives the consuming experience, which is influenced by the goods and services, events, and series of interactions that take place between the customer and the company at every touchpoint prior to, during, and following the purchase. At every point of contact, the client's expectations are automatically compared to the organization's concrete performance, stimulated senses, and evoked emotions to create the customer experience. The customer is inadvertently evaluating his experience by contrasting it with his expectations. This results in the development of pivotal moments that include the consumer's interaction with the company (Shahrokh & Zadeh, 2020).

Consumer experiences of a brand (in relation to a product or service offered by a company or manufacturer) are a collection of feelings, thoughts, and actions brought on by different stimuli that take place when consumers engage with a certain brand either directly or indirectly. Online presences are used by brands as customer touchpoints. Researchers have become interested in this topic due to the growing size of the virtual market, and in the start of this century, online brand experience, or e-brand experience, has become a new field of study. Online customer experience, website experience, web brand experience, online consumer flow experience, virtual experiential marketing, and online buying experience are some of the concepts that are linked to e-brand experience (Quan et al., 2021).

Customers' subjective reactions to brand-related stimuli can be produced by the business (such as auxiliary product and service information in sales and marketing) or by other sources and stakeholders (such as news and information posted on social media). These are known as brand experiences. Customers' perceptions of a brand's legitimacy are influenced by their brand experiences. Customers seek less and are even more satisfied when they have a positive brand experience. Positive brand experiences help consumers feel more confident and secure in themselves, which in turn helps them build stronger bonds with the brand. Both positive and unfavorable brand legacies foster favorable sentiments toward the company and increase customer loyalty. Consumers' impulsive and inadvertent reactions to particular stimuli brought on by management or consumption processes are referred to as brand experience. Customers' reactions to brand-related stimuli are evoked by brand experience (Castillo-Villar & Villasante-Arellano, 2020).

Consumers and brands can engage directly (for example, when they buy products or services to consume them) or indirectly (for example, through marketing and advertising). This implies that

both users and non-users can make use of a brand. Therefore, the subjective and natural reactions of customers that are triggered by different degrees of direct and indirect contacts with brand-related stimuli are referred to as brand experience (Prentice et al., 2019). Both experiential and functional values, which are frequently drawn from consumer experience, are provided by a brand. Customer experience encompasses the impact that customers have on non-consumers as well as their purchasing and consumption experiences with the brand and the company. In addition to the observable advantages that the brand organization offers, consumers nowadays are also seeking the brand's functional advantages and the experience that is connected to the brand. Depending on the consumer's relationship to their surroundings, this experience can be felt in a variety of realms, including aesthetics, pleasure (entertainment), information acquisition, or expertise (education). According to Prentice et al. (2019), brand experiences can appear in a service encounter as sensory (connected to our senses), emotional (related to emotional relationships), and behavioral (related to customer activities that they appreciate).

Background of research

Liu and colleagues (2025) in their research, "Exploring the Key Factors Influencing Health and Wellness Tourism and Their Relationship with Tourist Satisfaction and Loyalty in the Post-Covid-19 Era: A Study of Emei City, A Chinese study examined the factors influencing tourist satisfaction and loyalty in the health and wellness tourism sector in Emei City, China, during the post-COVID-19 period. The main objective of this study was to understand these dynamics in order to support effective destination management. The study also aimed to identify key variables influencing the satisfaction and loyalty of tourists visiting Emei City. Methodology: A quantitative research approach was adopted for this study, using a questionnaire to collect data from tourists visiting Emei City. The main variables investigated included tourist transportation, tourist price, tourist resources, tourist facilities, tourist service quality, medical care level, and social environmental assurance. Structural equation modeling (SEM) was used to analyze the relationships between these factors and tourist satisfaction and loyalty, with tourist satisfaction acting as the mediating variable in this study. Results: The results showed that tourist transportation, tourist price, tourist facilities, tourist service quality, and social environmental assurance had positive and significant impacts on tourist loyalty. In addition, tourist transportation, tourist price, tourist resources, and tourist service quality were found to have positive impacts on tourist satisfaction. Moreover, tourist satisfaction has a positive relationship with their loyalty in the health and wellness tourism sector, which has been affected by the COVID-19 pandemic. This study also highlights the role of tourist satisfaction in the relationship between tourism price and loyalty. Conclusion: This study provides valuable information on the factors contributing to tourist satisfaction and loyalty in the health and wellness tourism sector in Emei City, especially in the context of the post-COVID-19 recovery period. The results provide new insights for future research and practical recommendations for tourism managers to support the recovery and development of the tourism sector in Emei City, which ultimately contributes to regional economic recovery. (Liu et al., 2025).

Toni and colleagues (2024) explained that the primary purpose of this research was to identify the antecedents of patient satisfaction in medical tourism (MT) by applying existing literature and developing a conceptual model based on the review. This paper presented a comprehensive review

of previous studies related to the antecedents of patient satisfaction in the medical tourism sector. Furthermore, the study provided a theoretical basis that helped researchers identify the important relationship between patient satisfaction and its causes. Based on the analysis, researchers identified the main factors of patient satisfaction and outlined possible relationships between various factors, such as treatment quality, cost attractiveness, destination image and service quality, and patient satisfaction. The practical implications of these findings are crucial, as they will help researchers better understand the antecedents of patient satisfaction and their potential links in the medical tourism industry. The conceptual model emerging from this review could guide the work of researchers and practitioners in the medical tourism industry as a whole. This study opens up opportunities for future research in the medical tourism industry, adding to its theoretical foundation. Originality: The study brings together fragmented data from a broad and comprehensive range of medical or health tourism and related literature. These data highlight the ideological differences between different areas of alternative medicine, as well as the potential factors that influence patient satisfaction in this industry (antecedents of satisfaction). The new model includes a new concept called "quality of care", which is different from "quality of service", a concept commonly used to explain customer satisfaction. The antecedents of patient satisfaction and their interrelationships provide a strong theoretical foundation for future research. (Toni et al., 2024)   .

Toni and colleagues (2022) in their research titled "Patient satisfaction and patient loyalty in the medical tourism sector: a study based on trip attributes" The aim of this study was to analyze the influence of travel attributes on patient satisfaction and retention in medical tourism using partial least squares structural equation modeling (PLS-SEM). The study investigated the influence of travel attributes on patient satisfaction and retention in medical tourism using primary data collected through a questionnaire from 402 foreign tourists visiting Kerala for medical treatment. Structural equation modeling (SEM) using Smart PLS 3.0 developed by Christian Ringel and his team was used to analyze the data. Results: The results show that travel attributes such as frequency of visits, duration of treatment and leisure time significantly affect patient satisfaction. Similarly, patient satisfaction significantly affects patient retention. The results highlight the importance of travel attributes on patient satisfaction and retention in medical tourism. Governments and service providers can further develop the medical tourism industry by focusing on travel attributes as they have a direct impact on patient satisfaction (Toni et al., 2022).

In a study by Aljumah (2020) , The study shows that medical tourism is one of the fastest growing tourism sectors in the world, especially in Malaysia. The main objective of this study is to examine the mediating effect of trust on international patient satisfaction and loyalty. This study also focuses on satisfaction as a mediator between service quality and international patient loyalty in medical tourism in Malaysia. The study generated a quantitative survey data collection tool, disseminating 640 questionnaires to foreign patients in Malaysia. Of these, 389 usable responses were finally found for analysis, showing a response rate of 60%. The data were analysed using the partial least squares structural equation model (PLS-SEM). Overall, The findings indicated that service quality is noticeably linked to international patient loyalty in Malaysia. One of the results of the study on the mediation effect showed that trust is an effective mediator between satisfaction and

loyalty of foreign patients. Satisfaction also showed a positive effect between service quality and loyalty of foreign patients. Furthermore, this study contributes to the theory by confirming the characteristics of the theory of "self-regulation of attitudes, intentions and behavior" related to customers' intention to stay longer and build strong relationships with Malaysian hospitals.(A. Aljumah et al., 2020).

Aljumah and colleagues (2017)conducted a study titled "Determinants of Foreign Patients' Loyalty of Medical Tourism in Malaysia: Trust and Perceived Value as Moderators." The main objective of the study was to investigate the influence of perceived value and trust. Perceived value influences service quality, while satisfaction and trust influence the satisfaction and loyalty of foreign patients. In addition, satisfaction acts as a mediator between service quality and loyalty of foreign patients in medical tourism in Malaysia. This study involved a quantitative research. To collect survey data, 640 questionnaires were distributed to foreign patients in Malaysia. From these questionnaires, 389 valid responses were selected for analysis, which represents a response rate of 60%. The data were analyzed using partial structural equation modeling (PLS-SEM). Overall, the results showed that service quality is significantly associated with the loyalty of foreign patients in Malaysia. Further mediation studies showed that perceived value and trust were successful mediators of the influence of service quality and satisfaction, and trust mediated between the satisfaction and loyalty of foreign patients. Satisfaction also showed a positive effect between service quality and the loyalty of international patients. The discussion of the findings focused on highlighting the implications and limitations of the study. This study makes a significant contribution to knowledge by examining perceived value as a mediator between service quality and satisfaction. This study also contributes to the research on trust as a moderating variable between satisfaction and loyalty of international patients in Malaysian medical tourism. Furthermore, this study contributes to theory by confirming aspects of the theory of "self-regulation of attitudes, intentions and behavior" that are related to patients' intention to stay longer and build a strong relationship with Malaysian hospitals. (A. I. Aljumah et al., 2017).

Techniques

Design of Research

Quantitative research has recently become popular in a variety of fields, including the natural sciences, business, social sciences, and mathematics (Mahjan, 2020). This study will use a quantitative approach, focusing on tourism economics. Moffat (2015) notes that questionnaires are the most widely used research instruments in the social sciences for survey purposes, field surveys were distributed and data were collected in real time. The questionnaire included participant information, including gender, education level, age group, mode of travel, visit frequency, source of information, employment status, companionship, main purpose of travel, duration of travel, and related products. This study used a three- to five-point scale for all variables to reduce distribution bias. Meanwhile, a Likert scale was used to collect data across the questionnaires. (Dawes, 2008) demonstrated that the five-point Likert scale yielded significantly better results than the seven- and ten-point Likert scales. Therefore, this study chose the five-point Likert scale.

A minimum interview number of 384 people was deemed appropriate for this research endeavor, as

per Craigie and Morgan's (1970) table, which states that 384 samples are needed when the population reaches one million. In the case of Karbala, the total number of visitors in a single year exceeded 20 million, with over 15% of these visitors being patients visiting private hospitals, including Al-Kafeel Specialist Hospital. Of the 710 field questionnaires, 580 valid responses were received, resulting in a 93% response rate.

Changeable dimensions
There were nine variables in this study, and the questionnaire had 35 items based on the research hypotheses, each of which was scored on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The questionnaire is summarized in Table 1.

Table 1
Things and variables

A variable	Symbol for an element	Measurement of elements	Citation
Travel and Transportation (A)	A1	It is easily accessible because of its position.	**Anaya-Aguilar et al., 2021a; Robustin et al., 2018; Virkar & Mallya, 2018; Chen & Petrick, 2013; Liberato et al., 2021**
	A2	It is inexpensive to get to the location.	
	A3	There are several pleasant and varied modes of transportation available.	
Price of Tourism (B)	B1	The cost of experience programs is affordable.	**(Park et al., 2017; Castro et al., 2017; Wishara & Tambrin, 2019; Lee & Kim, 2015; Suanmali, 2014; Liberato et al., 2021).**
	B2	The cost of lodging is low.	
	B3	The cost of dining in restaurants is affordable.	
	B4	Low prices for shopping	
Resources for Tourism (C)	C1	It boasts a stunning natural setting and well-known tourist attractions.	**Anaya-Aguilar et al., 2021a; Irma et al., 2021; Chia et al., 2021; Hekmat et al., 2022; Chen & Petrick, 2013; Lee & Kim, 2015; Dryglas & Salamaga, 2018;**
	C2	offers relaxing leisure activities that are healthful.	
	C3	It provides a range of gourmet, healthful food.	
	C4	It has a great local culture.	
	C5	Numerous stores sell pleasant memories and presents.	
	D1	offers parking garages.	

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Facilities for Tourism（D）	D2	offers hygienic and unique restrooms.	Robustin et al. (2018), Wen et al. (2020), Anaya-Aguilar et al. (2021b), Khairi & Darmawan (2021), Liberato et al. (2021), Ullah & Ahmad (2017), and Chen & Petrick (2013)
	D3	It offers first-rate and cozy lodging for visitors.	
Quality of Tourism Service (E)	E1	top-notch entertainment offerings..	Agyeiwaah et al. (2016), Latiff & Imm (2015), Robustin et al. (2018), Neloh et al. (2019), Cham et al. (2022), J.-H. Wang et al. (2020), and Warangkana & Supawat (2020)(Warangkana & Supawat, 2020)
	E2	superior lodging services.	
	E3	excellent services at restaurants.	
	E4	Excellent taxi service.	
	E5	Excellent efficiency and excellent service.	
Level of Medical Services(F)	F1	Numerous hospitals are accessible.	(J. Wang et al., 2020; Lee & Kim, 2015; Ghasemi et al., 2021; Mandagi & Tappy, 2023)
	F2	The hospitals are well-regarded.	
	F3	The hospitals are equipped with state-of-the-art machinery.	
	F4	The medical center has a solid reputation, experience, and accreditation.	
Security of the Social Environment (G)	G1	The city is seen well generally.	(J.-H. Wang and colleagues, 2020), (Orîndaru and colleagues, 2021), (Rehman and colleagues, 2021), (Cham and colleagues, 2022), (Cruz-Milán, 2023)
	G2	Have a safe journey.	
	G3	The location has good health and sanitation conditions.	
Evaluation of visitors' satisfaction (H)	H1	The trip was as I expected.	(Mohammed et al.,2022)
	H2	The trip is truly worth the money and effort.	
	H3	Overall, I'm happy with the trip.	
Loyalty assessment of tourists (I)	I1	I will use the online platform to share my trip experiences..	(Obermann, 2000). (Uysal and Yun, 2005)
	I2	I'm willing to use more medical items and services here.	
	I3	If I get the chance, I'll return there.	

	I4	I would recommend this institution to my friends and family.	
	I5	I start by looking at the destination when there are comparable travel destinations or items..	

Analysis of Data

We also used Confirmatory Factor Analysis (CFA) to evaluate validity and Cronbach's Alpha to evaluate dependability in the formal study. Based on the findings of the CFA, the study model's relevance is constructed and validated using Structural Equation Modeling (SEM), which also assesses the extent to which independent factors influence dependent variables. In the first study, we used Cronbach's alpha to evaluate reliability and exploratory factor analysis (EFA) to examine the validity of factors influencing tourist happiness and loyalty.

NORMALITY TEST RESULTS

According to Tarhini (2016), skewness values between -2.58 and 2.58, as well as kurtosis values within the same range, are taken into consideration when testing for normality in scholarly writing for continuous data (Mishra et al., 2019). Table 2 displays the results of the normality test conducted for each variable in this study; each value in the total skewness ranges from 0 to 1, and the overall data distribution graph satisfies the study's requirements because it is sk to the right. The kurtosis values overall range from -1.17 to 0, indicating that each research variable's data distribution graph is relatively flat, meeting the study's requirements.

Table 2.

values of variance and kurtosis for every item (n = 580).

Variables	N	Skewness	Normal Deviation	Kurtosis	Normal Deviation
Transport for Travel	580	0.53	0.10	-0.88	0.20
Cost of Travel	580	0.66	0.10	-0.85	0.20
Resources for Tourism	580	0.92	0.10	-0.46	0.20
Facilities for Tourism	580	0.45	0.10	-1.17	0.20
Quality of Tourism Services	580	0.70	0.10	-0.66	0.20
Level of Medical Services	580	0.88	0.10	-0.48	0.20
Security of the Social Environment	580	0.85	0.10	-0.49	0.20
Tourists' Contentment	580	0.58	0.10	-0.86	0.20
Tourists' Allegiance	580	0.92	0.10	-0.58	0.20

Analysis of formal studies' validity and dependability

Evaluation of reliability

All Cronbach's alpha values for the variables were greater than 0.8, according to the reliability analysis results, indicating good internal consistency of the questionnaire and reasonably high dependability of the data, both of which call for additional research.

Verification of validity with Confirmatory Factor Analysis

First, 27 items encompassing seven dimensions of influencing variables were subjected to a confirmatory factor analysis (CFA) using SMARTPLS software. The findings were as follows: According to the fit results, all fit indices satisfied the significance level, and the fit values (X^2/df = 1.38, RMRM = 0.02, RMSEA = 0.03, GFI = 0.95, NFI = 0.98, RFI = 0.97, IFI = 0.99, TLI = 0.99, and CFI = 0.99) were comparatively good.

In addition to showing that all of the AVEs and CRs are above 0.7 and 0.8, respectively, indicating that the collected data has strong convergent validity, the factor load coefficient result also shows that the standard factor load coefficient for each measurement item is higher than 0.7, suggesting that the validity of the influencing factors questionnaire is comparatively good.

Second, a confirmatory factor analysis (CFA) was performed using SMARTPLS.

software on three tourist satisfaction factors, and the results were as follows: · The study's RMSEA value is 0.91. The fitting results show that all fitting indices satisfy the fitting criteria and that the fitting outcomes are generally good; RMR=0.00, GFI=1.00, NFI=1.00, IFI=1.00, and CFI=1.00. The fitting outcome of the entire model is unaffected even though the RMSEA value is below par because other fitting indications are good.

The factor load coefficient results show that all of the AVEs and CRs are above 0.8 and 0.9, respectively, indicating that the collected data has strong convergent validity, and that each item's factor load coefficient is higher than 0.80, indicating a reasonably high level of validity for the tourists' satisfaction survey.

Thirdly, five factors associated with the loyalty of tourists were subjected to a confirmatory factor analysis (CFA) using SMARTPLS software. The results from the approximation indicate that all of the approximation indices meet the approximation criterion, and the results are generally good ($X2/df$=0.50, RMR=0.00, RMSEA=0.00, GFI=1.00, NFI=1.00, RFI=1.00, IFI=1.00, TLI=1.00, and CFI=1.00).

In addition to showing that all AVEs and CRs are above 0.8 and 0.9, respectively, which indicates the collected data has robust convergent validity, the factor loading coefficient information shows that each item's factor loading coefficient exceeds 0.80, indicating the validity of the visitor loyalty survey is relatively strong.

The Interpretation of the Path Coefficients Table (3)

	coefficient (β)	t-value	p-value	importance	Effects

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Tourist Loyalty → Service Quality	0.35	4.20	0.000	Indeed.	Moderate
Facilities for Visitors → Loyalty of Visitors	0.28	3.80	0.001	Indeed.	Little
Loyalty of Tourists → Environmental Security	0.15	1.90	0.058	No	Weak
Tourist Loyalty → Tourist Satisfaction	0.50	6.10	0.000	Indeed.	Big

The following is shown in the above table:
-Tourist pleasure has the biggest impact on loyalty (β = 0.50).
-Facilities and service quality have a strong but less important impact.
-Environmental safety can be eliminated from the model because it is not statistically significant.

Table of variables for validity and reliability (Measurement Model) Table(4)

A variable	α, or Cronbach's Alpha	Reliability Composite (CR)	AVE
Quality of Service	0.82	0.88	0.65
Facilities for Tourists	0.79	0.86	0.61
Travelers' Contentment	0.85	0.90	0.70
Visitor Loyalty	0.88	0.92	0.75

The following is displayed in the above table:
very variable is dependable (CR > 0.7 and α > 0.7).
Convergent validity is excellent (AVE > 0.5).

Table (5): Prediction power (R2) and effect size (f2)

The dependent variable	R²	Interpretation of R2	Interpretation of R2
Patronage of tourists	0.65	Strong Interpretation (65%)	Strong Interpretation (65%)
The route	f²		Interpretation of Impact
Satisfied tourists → Loyalty	0.30		Big
Quality of service → loyalty	0.18		Moderate

Table (6) shows the discriminant validity chart (Fornell-Larcker Criterion).

	Quality of Service	Facilities	Contentment	Faithfulness
Quality of Service	**0.81**	0.45	0.50	0.55
Facilities	0.45	**0.78**	0.40	0.48
Contentment	0.50	0.40	**0.84**	0.65
Faithfulness	0.55	0.48	0.65	**0.87**

The results show the following, as seen in the above table:

-The AVE solutions, represented by the bold values on the diagonal, are greater than the other correlations, indicating good discriminant validity.

Findings and suggestions:

We can draw the following conclusions from the scientific aspect of the research: Investing in the visitor experience can be accomplished by creating programs that tailor services to the preferences of tourists (e.g., pilgrims versus leisure tourists); improving effective communication with tourists across multiple channels (smart applications, quick response to complaints); regularly measuring satisfaction can yield the best results through the use of brief, immediate surveys after the visit (via email or app); linking employee incentives to customer satisfaction indicators by providing a 10% discount on the next visit for tourists who rate their experience as four stars or higher; and by improving service quality (the medium-impact factor).

-Offering reception workers training in emotional intelligence and crisis management.

-Clearly defining response time requirements, such as addressing complaints within a day.

One of the most crucial elements that should not be disregarded is service infrastructure, which may be improved by modernizing online reservation platforms to lower errors and offer first-rate logistical services (such transportation from the hotel to tourist places).

By raising the rebooking rate by 15% within six months of putting the changes into place, the success metric—which is also a crucial component of evaluating the significance of loyalty—will increase the worth of the customers to the company.

Due to its statistical insignificance ($p = 0.058 > 0.05$), the environmental security variable (which has a weak impact) should be reevaluated and removed from the loyalty model and not included in the main marketing strategies. Instead, it could be made into a secondary variable that is targeted at particular groups (like families).

In conclusion

According to the statistical analysis, the main factor influencing loyalty is visitor satisfaction, with service quality playing a supporting role. The marketing and operations departments must work together to implement these recommendations, and the results should be tracked using clear performance indicators. The Smart PLS model should be re-implemented after a year to gauge how well the changes are working.

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