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THE IMPACT OF PHYSICAL EVIDENCE COMPONENTS ON MEDICAL TOURIST SATISFACTION

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Abstract: This study aimed to investigate the impact of physical environment elements on the satisfaction of medical tourists with Jordanian medical destinations. The independent variable is the physical environment, which consists of four elements: hospitality and reception facilities, building design and decoration, medical devices and equipment, and specialized medical services for high-profile individuals. The dependent variable expresses the satisfaction of medical tourists with Jordanian medical destinations. The study used a causal descriptive research design as part of the quantitative approach. The study population includes all tourists arriving for treatment in Jordanian private and government hospitals and royal medical services. The estimated number of arrivals is 92.5 thousand people in May 2025. Based on sampling calculations, the recommended sample size was 383 individuals. The sample was drawn according to the simple random sampling method. The study concludes the moderate positive effect of the physical environment on medical tourists' satisfaction with Jordanian medical destinations. At the sub-hypothesis level, it was found that there are three elements in the physical environment that are statistically significant in influencing medical tourists' satisfaction with Jordanian medical destinations: hospitality and reception facilities, building design and decorations, and medical equipment and devices. In contrast, the medical services of VIP did not affect medical tourists compared to Jordanian medical destinations. Finally, the study presented several recommendations that enhance investment in the physical environment of Jordanian medical facilities as a fundamental pillar for the medical tourism sector's competitiveness.

Keywords: physical environment, patient satisfaction, medical tourists, medical destinations, medical tourism, Jordan

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INTRODUCTION

In recent decades, the medical tourism sector has recorded rapid growth, making it one of the most important areas of international competition. Many countries seek to attract foreign patients and provide services that combine medical quality with a comfortable tourism experience (Amirian et al., 2022). Hospitals now view the physical environment as one of the influential elements in shaping the patient experience, especially in the early stages of treatment (Sthapit et al., 2022). The physical environment has gone beyond the concept of visual image; it has become an active component in the quality of health services. It also contributes to enhancing the satisfaction of international patients, especially those who are sensitive to details of the place, such as alienation, language, and culture, and hold diverse expectations (Kim & Lee, 2019). The physical environment brings together all the tangible design elements that surround the patient within the hospital, such as lighting, colors, cleanliness, ventilation, indoor green spaces, tranquility, furniture, and visual guidance (Flores et al., 2025). The physical environment is also linked to the formation of the patient's sensory and psychological perception, as it affects the evaluation of the satisfaction rate with the therapeutic experience Ulrich et al., 2020).

Finally, experiencing a therapeutic service based on the physical environment achieves perceived comfort and psychological security, which are important elements for the international patient who often suffers from fear and anxiety from treatment in an unfamiliar country (Huang et al., 2024). Therefore, these visual instructions within the hospital reduce anxiety levels in foreign patients and enhance their satisfaction with the health services provided (Yap et al., 2022).

In medical tourism, foreign patients are more sensitive to the physical environment. Factors like alienation, language, and culture contribute to this sensitivity (Hosany et al., 2022). International patients rely heavily on physical signals, or environmental cues, when evaluating hospitals, treatment destinations, and even medical services themselves (Yang et al., 2025). They show clear preferences for tangible elements such as cleanliness, organization, lighting, easy movement, indoor green spaces, natural lighting, and soothing colors (Flores et al., 2025). As a result, the physical environment at medical destinations is a fundamental pillar of healthcare quality. It forms the sensory framework that patients encounter upon entering a facility, leaving a strong first impression regarding professionalism, organization, and attention to detail (Shetty et al., 2024). Over time, the physical environment has evolved beyond engineering and construction to become a

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multidimensional concept. It now includes marketing, psychological, behavioral, and social aspects. These dimensions help explain patient behavior, assess their experience, and guide interactions at multiple levels (Lugosi et al., 2023). Modern infrastructure and advanced facilities are crucial in attracting and retaining foreign patients at hospitals and medical destinations, despite potentially higher prices (Viana-Lora et al., 2023). The Global Medical Tourism Index (2023) reports that 62% of international patients consider the physical environment important in choosing a hospital. Additionally, 47% believe that aesthetic design and facility quality impact their satisfaction during treatment, which is a key criterion for evaluating experiences (International Health Care Research Center, 2023). Therefore, the physical environment is essential for building trust between foreign patients and healthcare providers and achieving satisfaction (Aleni et al., 2023). Medical purposes that incorporate therapeutic design principles (Healing Design) can achieve satisfaction levels for international patients ranging from 18% to 35%. The quality of facilities, room arrangement, and entrance cleanliness determine the intention for treatment and repeat visits, as recommended by Abdul-Rahman et al. (2023).

At the Jordanian level, the physical environment of hospitals is one of the factors affecting the quality of health care and patient satisfaction. In a report issued by the Jordanian Ministry of Health for the year 2024, it was found that the number of hospitals in Jordan reached 119, including 32 governmental, 71 private, 15 military firms, and 2 university hospitals. This reflects the diversity of the Jordanian health system and efforts to improve the physical environment in both the public and private sectors. The Ministry of Health seeks to improve the physical environment, modernize buildings, and enhance healthcare facilities in its hospitals and health centers, with the aim of increasing capacity and reducing waiting times. In private hospitals, the volume of investment in infrastructure is estimated at about $4.2 billion (Jordan Private Hospitals Association, 2024). Here, studies agree that the physical environment of hospitals directly and strongly influences patient satisfaction (Folgado-Fernández & Hernández-Rojas, 2025; Dwiastuti et al., 2025; Shaykh-Baygloo, 2021), despite the financial difficulties facing Jordanian hospitals, which may hinder the continuous improvement of the physical environment and ensure excellent health care (Al-Nsour, 2017).

LITERATURE REVIEW

The Physical Evidence in Medical Tourism

The physical environment is defined as all the tangible elements that make up a place and includes building design, hallways, movement spaces, patient rooms, reception areas, natural and artificial lighting, ventilation, noise, colors, visual materials, and indoor environment management techniques (Shetty et al., 2025). In addition to hygiene, distribution of medical devices, and easy access to services within the treatment destination (Shetty et al., 2024). The concept of the physical environment is no longer limited to engineering and structural aspects (Al-Nsour, 2013), but has become a multidimensional concept in which the engineering aspect overlaps with the marketing, psychological, behavioral, and social aspects, and the patient interacts with it across multiple levels (Lugosi et al., 2023). Ulrich (1984) referred to the concept of the physical environment from a constructivist–psychological perspective and demonstrated its ability to influence the psychological and physiological responses of the patient (Ulrich et al., 2008). Elements such as natural light, green views, noise reduction, and improved air quality all accelerate recovery and reduce anxiety and stress (Hou et al., 2024). Therefore, the physical environment is part of the treatment process itself and is not merely a spatial image in which health care procedures are delivered (Afonso & Alves, 2014). On the other hand, the physical environment reflects the form and quality of the hospital's institutional structure and embodies the extent of compliance with international quality standards and health safety standards (Simion et al., 2024). The World Health Organization emphasizes that place quality is an aesthetic issue and is considered an effective factor in preventing hospital-acquired infections and diseases (Al-Nsour et al., 2021). Improving ventilation, reducing audio-visual pollution, raising the level of natural lighting, and improving the flow of movement are all factors that reduce infection by up to 30% (World Health Organization, 2022).

These elements are directly involved in evaluating the quality of the hospital as a whole, including the efficiency of staff, the cleanliness of the place, and the effectiveness of therapeutic services (Shetty et al., 2024).

The physical environment affects the patient's cognitive aspect, because it uses what is known as “tangible evidence, as it represents everything that can be seen, heard, or touched inside the hospital. Here, Parasuraman pointed out in the SERVQUAL model that “tangibility” is one of the most important dimensions of quality that builds customer trust in the institution, which applies to the healthcare sector, which is one of the sectors most dependent on trust between the patient, the doctor, and the medical facility (Wubineh et al., 2024). Therefore, the quality of interior design, the distribution of departments, the comfort of rooms, privacy, the cleanliness of the place, the absence of unpleasant odors, and the consistency of colors (Al-Nsour et al., 2024) all contribute to the formation of a positive mental image in the patient and raise the level of satisfaction with the therapeutic experience (Tian, 2023). We add that patient rooms are designed to take into account privacy and allow natural light to enter; this gives patients a sense of comfort, reduces their need for sedative medications, and increases their satisfaction rate (McCunn et al., 2021).

In recent years, hospital design has moved from simply facilitating medical procedures to “human-friendly hospitals, which take into account the psychological and treatment needs (Elf et al., 2024). Here, the study of Ulrich et al. (2020) indicated that hospitals implement this type of design achieve high levels of satisfaction and experience faster rates of improvement compared to traditional hospitals. There is no doubt that technology occupies a prominent place in the physical environment, as smart systems today are included in every part of the place, including monitoring air quality, temperatures, humidity, and lighting levels (Jiaoyu, 2025), facilitating the entry of visitors, and infection control systems (Razzak et al., 2020). Recent studies following the COVID–19 pandemic have shown that hospitals implementing smart systems were more stable and enhanced customer satisfaction (Jiaoyu, 2025).

The Impact of Physical Evidence Design on Medical Tourist Satisfaction: Development of Research Hypotheses

The physical environment in healthcare firms is a fundamental dimension influencing medical tourists' satisfaction (Yap et al., 2022). This environment represents the framework within which the medical service is provided, and essential part of the overall international patient experience (Johnsen, 2025). In the field of medical tourism, literature indicates that the physical environment is not only the architectural design of the hospital (Oh et al., 2025). But also, it includes multiple elements such as cleanliness, lighting, colors, ventilation, tranquility, and ease of movement within the facilities (Eelager et al., 2025). In addition to the quality of the reception and waiting areas, the attractiveness of the medical and service rooms (Moreno-González et al., 2020). These elements have gained particular importance among medical tourists, who lack prior knowledge about the cultural and organizational environment in the host country (Raoofi et al., 2024). Finally, this knowledge provides crucial evidence in shaping initial impressions and enhancing the level of comfort, security, and satisfaction with the medical destination (Jawabreh et al., 2025).

Medical tourism literature has also indicated that a positive physical environment reduces anxiety and stress among medical tourists, improves their psychological state during treatment, and thus improves their satisfaction with the therapeutic services provided (Fetscherin & Stephano, 2021). Alananzeh et al.'s study confirms this (2023). This environment was effective in increasing medical fence satisfaction with the treatment destination before evaluating the clinical outcomes of the treatment. The medical tourist feels that the hospital invests in his comfort and human dignity first and then in the technical therapeutic aspects (Abu-Rumman et al., 2022). We add that hospitals that adopt the concepts of "therapeutic hospitality" when designing their physical environment achieve higher levels of satisfaction for medical tourists compared to hospitals that focus on the medical aspect only (Wang et al., 2024).

In the same context, the Servicescape Theory indicated that the physical environment plays a dual role in terms of functional and emotional impact on the medical tourist (Smieja et al., 2025). More clearly, it influences his behaviors, evaluations, and future attitudes regarding the intention to repeat a purchase and recommend the treatment destination to others (Obigbesan et al., 2023). The physical environment is viewed as "silent signals" that the medical tourist receives before learning about the level of service, and it is used to build initial impressions, form a mental image, and build satisfaction with the therapeutic destination (Kim et al., 2018). According to the theory "environment–feelings–behavior, the physical environment elicits emotional responses in the visitor, such as relief or anxiety (Johnsen, 2025). These responses also influence the evaluation of the treatment experience and the mapping of the cognitive framework of the mental picture.

The physical environment represents the most important determinant "image of the institution" in medical tourism, as it helps in building a positive cognitive identity for the therapeutic destination, and consolidates the medical tourist's satisfaction with the therapeutic destination and the treatment itself (Mendoza-Villafaina & López-Mosquera, 2024). Therefore, it makes it easier to remember the therapeutic destination and visit it repeatedly (Obigbesan et al., 2023), and represents the cornerstone in shaping medical tourists' satisfaction with the therapeutic experience as well (Kandan et al., 2024). The harmonization between the advanced physical environment and the needs of medical tourists enhances confidence, creating psychological comfort and reducing anxiety. Furthermore, providing a comprehensive picture of the treatment quality and raising the satisfaction with the medical destination and the services provided (Alawneh et al., 2025). Therefore, the main hypothesis of the study is as follows:

- There is a Positive Impact of Physical Evidence on Medical Tourists' Satisfaction with Jordanian Medical Destinations at a statistical significance level of 5%.

The Sub-hypotheses can be formulated as follows:

The Impact of Hospitality and Reception Facilities on Medical Tourists' Satisfaction with Medical Destinations

Hospitality and reception facilities are essential factors affecting the satisfaction of medical tourists. It is the first interaction point between the foreign patient and the health firm, and builds the initial impression of the treatment service quality (Han & Hyun, 2022). Recent studies confirm that the quality of reception areas, the level of organization, ease of procedures, and the professionalism of reception staff play a pivotal role in enhancing the feeling of comfort and confidence among medical tourists, which is positively reflected in the satisfaction rate with the treatment destination (Han & Hyun, 2022). The study by Alananzeh et al. (2023) confirmed this. The service environment of Jordanian private hospitals, such as hospitality and reception services, is one of the determinants of medical tourists' satisfaction and their decision to choose Jordan as a medical destination. As the study by Abu-Rumman et al. (2022) showed, the integration between the quality of medical services and the quality of support services, such as hospitality, guidance, and facilitating the stay of companions, all contribute to raising the perceived value of the health service and enhancing the medical tourist experience. International literature supports this trend. Fetscherin & Stephano (2021) indicated that hospitals that adopt hotel hospitality concepts in designing reception areas and providing non-medical services achieve higher levels of satisfaction among international patients. Effective reception and professional welcome also build an initial psychological relationship between the patient and the health facility, which turns into strong satisfaction with the treatment destination over time (Zarei et al., 2012). Therefore, the first sub-hypothesis is:

HO_{11}: Hospitality and Reception Facilities Positively Impacted Medical Tourists' Satisfaction with Jordanian Medical Destinations, with a Statistical Significance Level of 5%.

The Impact of Building and Furniture Design on Medical Tourists' Satisfaction with Medical Destinations:

Recent literature indicates that good architectural design, which takes into account the distribution of spaces, natural lighting, color harmony, and the quality of furniture, improves the psychological state of patients, reduces levels of anxiety and

stress, and thus the satisfaction with the purchase intent (Ulrich et al., 2014). We add that decoration and interior design are elements that influence patients' feelings and behaviors, including the level of satisfaction, intention to revisit, and WOM of the medical destination. Han & Hyun's (2022) showed that the hospital interior design, including spatial aesthetics and ease of movement within the building, is positively related to medical tourists' satisfaction and future behavior. In the Jordanian context, Alananzeh et al.'s study showed (2023). Building design and decoration are major determinants of medical tourist satisfaction, and this satisfaction is based on the quality of design, medical professionalism, and the quality of care provided. Evidence also supports the findings of studies by Aljunid et al. (2020) and Teshnizi et al. (2023). The comfortable and advanced interior design increases patient satisfaction and enhances their feeling of relaxation and reassurance during the treatment period. Modern decor and clear, clean geometric facades also strongly influence the previous and subsequent perception of service quality (Zhong et al., 2023). Therefore, the second sub-hypothesis is as follows:

- **HO_{12}:** Building Design and Decorations Positively Impacted Medical Tourists' Satisfaction with Jordanian Medical Destinations, with a Statistical Significance Level of 5%.

The Impact of Medical Devices and Equipment on Medical Tourists' Satisfaction with Medical Destinations:

The literature indicates that international patients tend to evaluate hospital quality based on the level of medical technology used. Advanced equipment is an indicator of the professional competence and technical ability of the health institution (Han & Hyun, 2022). The theory of health care quality supports this trend, stressing that infrastructure and medical equipment constitute a pivotal dimension in evaluating the quality of therapeutic service and beneficiaries' satisfaction with it (Ayanian & Markel, 2016). Within the framework of medical tourism, the Han & Hyun study (2022) showed that the modern medical technologies and devices in hospitals support the confidence of international patients and raise the satisfaction and future behavior. In a recent study, it was found that advanced medical equipment is one of the factors affecting the satisfaction of medical tourists by reducing medical risks and enhancing a feeling of safety during treatment (Prakash et al., 2023). In the Jordanian context, Alananzeh et al. (2023) confirmed that the quality of the physical environment of private hospitals, which includes the readiness of medical devices and technologies, affects the satisfaction of medical tourists. These tourists view investment in medical technology as a decisive factor in choosing a treatment destination. Therefore, modernizing medical devices and equipment in Jordanian hospitals does not only represent a response to clinical requirements but is also a competitive strategy that raises the level of satisfaction of medical tourists and enhances Jordan's position as an advanced destination in the global medical tourism market (Alrawadieh & Alrawadieh, 2022). Therefore, the third sub-hypothesis is:

- **HO_{13}:** Medical Devices and Equipment Positively Impacted Medical Tourists' Satisfaction with Jordanian Medical Destinations, with a Statistical Significance Level of 5%.

The Impact of Luxury Services on Medical Tourists' Satisfaction with Medical Destinations

Studies confirm that hospitals with luxury services oriented to the upper level classes achieve higher levels of satisfaction (Han & Hyun, 2015). This reflects the increasing importance of patient experience and not just clinical outcomes (Alananzeh et al., 2023). Recent studies have shown that the distinguished and luxurious facilities, such as upscale waiting rooms, accommodation for companions, and high-level logistical services, positively affected the medical tourists' assessment of the medical destination (Prakash et al., 2023). In the Jordanian context, the study by Alananzeh et al. (2023) indicated that the quality of services provided to high-level groups is an important factor in the satisfaction of medical tourists (Tuominen, 2023). These tourists view these services as a sign of professionalism and care for patients, which enhances their confidence in the health facility (Connell, 2013). In a recent study, it appeared that investing in luxury distinguished services for high-end groups, such as private transportation, rapid administrative support, and hospitality services, increases the perceived value of the health service and positively affects patient satisfaction (Kanwel et al., 2024). Accordingly, developing the services of businessmen and the VIP's in Jordanian hospitals is a vital strategy for improving the satisfaction of medical tourists and enhancing Jordan's position as a preferred destination for global medical tourism (Alananzeh et al., 2023). Therefore, the fourth sub-hypothesis is:

- **HO_{13}:** Luxury Services Positively Impacted Medical Tourists' Satisfaction with Jordanian Medical Destinations, with a Statistical Significance Level of 5%.

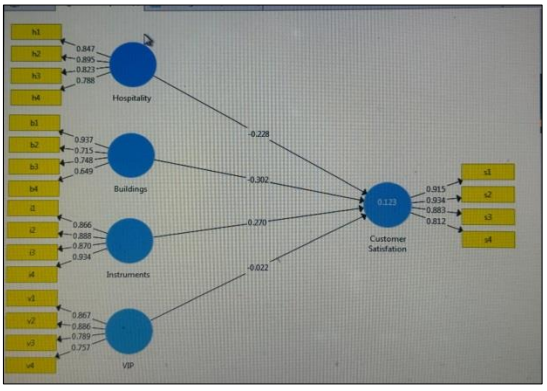

Figure 1. Conceptual Model

RESEARCH DESIGN

1. Research Design: It is defined as the formation of parameters that address the desired research topic. Research design is a systematic arrangement of data collection and interpretation to generalize sampling results (Ahmed, 2024). The current study used a descriptive causal design with relative frequency analysis. Descriptive-causal research expresses the understanding of whether a change in one variable may cause a change in another variable, rather than a correlational relationship only. Therefore, this design is fit for evaluating the impact of the physical environment components (the IV) on the medical tourists' satisfaction with Jordanian medical destinations (the dependent variable).

2. Research Method: According to Stine & Foster (2017) There are two basic ways to conduct research: quantitative and qualitative. The qualitative method of data collection, which includes focus groups, open-ended questions, and interviews, aims to provide an in-depth and comprehensive description of a phenomenon. A quantitative approach may be able to summarize common characteristics between links or groups by taking into account a larger sample size. Taking into account that the main goal of the research is to obtain descriptive data using the survey method. The quantitative approach is suitable for the current study, which involves collecting data, converting it into numerical formulas, performing statistical operations, and drawing conclusions from the results.

3. Research Population: Consists of all arriving tourists for medical purposes in Jordan. The medical destinations include private and government hospitals, and the Royal Medical Services. The Jordanian Ministry of Health estimates that the number of medical tourists reached 92,500 people by May 2025 (www.moh.gov.jo, 2025).

4. Sampling Method: A random sample of 383 medical tourists was taken from hospitals in Jordan, including private, government, and royal medical services. The Arab and Foreign Patients Office, run by the Ministry of Health, provides data on medical tourists. During sampling, office staff counted medical tourists at the hospitals to help with selection. This method gives each person an equal chance to be chosen. It is straightforward, needing only one random selection and little prior information about the group. Randomization ensures high reliability, validity, and reduced bias, allowing the results to be applied more widely (Stine & Foster, 2017). The sample was collected from individuals arriving for medical reasons in June 2025. The researcher notes that June is a high-demand period for medical services by tourists, at 50%, compared to other times. It is also the start of summer vacations for schools and universities, the start of the tourism season, and the time when expatriates return to Jordan.

5. Unit of Analysis: It represents the tourists arriving for treatment in private and government hospitals and royal medical services. Through the Arab and Foreign Patients Office in hospitals, information was obtained from medical tourists whose health condition allowed them to answer the questionnaire items and other study questions.

6. Data Sources: The study relied on two types of data sources: secondary data, which was based on a review of the various literature related to the subject of the study, especially those published in Arab and foreign books and university theses, in addition to specialized websites, and statistics issued by relevant local and international institutions. For the purpose of collecting primary data, an appropriate measurement tool (questionnaire) has been developed for this purpose.

7. Research Instrument: The questionnaire is the main tool for collecting data from the sample randomly. It consists of item questions and phrases that require approval or disapproval from the sample. For the current study, the survey was conducted on a sample of medical tourists in the hospitals under study, face-to-face in patients' rooms, or with the assistance of public relations staff in those hospitals. Sometimes tourists ask to postpone answering the survey, or to have the survey sent to them using WhatsApp, Messenger, social media, or email. The researcher developed the study tool on Google Drive, and a group of specialists was hired to judge the statements of the initial survey list, and to ensure the level of external honesty, their validity, and their ability to achieve the objectives of the study.

Validity and Reliability

1. Discriminate Validity: It is the degree to which the scale items differ from each other, and the level of overlap between them (Hair et al., 2021). Cross-Loading distribution test states that the value of each item in the latent variable (IV and DV) must be the highest among the other variables (Hair et al., 2021).

Table 1. Cross Loading, CR, AVE, CR & VIF

Latent Variable	Sub Variable	Items	Cross Loading	CR	AVE	Rho_A
Physical Evidence	Hospitality & Reception Facilities	H1	0.847	0.905	0.794	0.878
		H2	0.895			
		H3	0.823			
		H4	0.788			
	Building Design and Decoration	B1	0.937	0.851	0.593	0.654
		B2	0.715			
		B3	0.748			
		B4	0.649			
	Medical Instruments & Equipment	I1	0.866	0.938	0.792	0.929
		I2	0.888			
		I3	0.870			
		I4	0.934			
	VIP Medical Services	V1	0.867	0.896	0.683	0.967
		V2	0.886			
		V3	0.789			
		V4	0.757			

Customer Satisfaction	CS1	0.915	0.937	0.787	0.943
	CS2	0.934			
	CS3	0.883			
	CS4	0.812			

Table 1 indicates that the cross-loading value for each item in the latent variables is different and higher than the values in the other variables. Therefore, those items are distinct, and their current place is the best.

2. Convergent Validity: The degree of agreement between several items to measure the same concept in a variable (Ringle et al., 2024). It consists of four tests:

- Individual Item Validity: Used to measure consistency between items that measure the same phenomenon or concept, with respondents agreeing on a single answer. The statistical rule states that the acceptable value is higher than 0.7. The results in Table 3 indicate that all items are higher than 0.7, and therefore, they meet the conditions for statistical evaluation.
- Composite Alpha: The statistical rule indicates that the acceptability of the latent variable (IV or DV) must be higher than 0.7. Table 1 indicates that the IV and DV are higher than the permitted value (0.7) (Hair et al., 2021).
- Average Variance Extracted: The statistical rule says that the lower level of the test is 0.5. The results indicate that all variables are higher than 0.5 and are therefore statistically acceptable (Ringle et al., 2024).
- Reliability and validity test of rho_A: The statistical rule holds that the test value should be higher than 0.7 (Fornell & Larcker, 1981). The results indicate that the test value for all variables is higher than 0.7, so the construction is statistically reliable.

3. Fornell-Larcker Test:

The test finds that the value of the latent variable (IV or DV) explains the best level of variance compared to other latent variables (Fornell & Larcker, 1981). Table 2 indicates that the variance values of the latent variables are higher than those of other latent variables. This means that there is no relationship with the other latent variables, and therefore, the current state of the variable is the best of all.

Table 2. Fornell-Larcker Criterion

Construct	Building & Decoration	Customer Satisfaction	Hospitality Facilities	Medical Instruments	V.I.P Servicws
Building & Decoration	0.770				
Customer Satisfaction	0.292	0.887			
Hospitality Facilities	0.796	0.301	0.839		
Medical Instruments	0.773	0.137	0.678	0.890	
V.I.P Services	0.759	0.175	0.690	0.866	0.827

Research Outcomes

There is a Positive Impact of Physical Evidence on Medical Tourists' Satisfaction with Jordanian Medical Destinations at a statistical significance level of 5%.

Table 3. Direct Path Analysis

H	Relationship	Std. Beta	Std. Dev.	T Value	P Value	f^2	Decision Supported - Not Supported	R^2	Q^2
H_{11}	Building → Customer Satisfaction	0.302	0.103	6.653	0.00	0.270	√	0.401	0.117
H_{12}	Hospitality → Customer Satisfaction	0228	0.007	3.743	0.004	0.210	√		
H_{13}	Instruments → Customer Satisfaction	0.270	0.101	4.759	0.002	0.180	√		
H_{14}	Luxury → Customer Satisfaction	0.022	0.109	2.071	0.049	0.000	X		
H1	Physical Evidence → Customer Satisfaction	0.371	0.051	4.077	0.028	0.279	√		

Significant at P_0* < 0.01. Significant at P_0** < 0.05

Path analysis indicates that there is an impact of physical environment components, "tangible elements," on medical tourists' satisfaction with Jordanian medical destinations at a statistical significance level of 0.05. In terms of the correlational relationships between the sub-variables, Table 3 indicates that the statistical significance of all correlational relationships is less than the permitted margin of error (0.05). Empirically, this means proving all sub-hypotheses related to the building's design and decorations, hospitality and reception facilities, medical equipment, and luxury services. In more detail, H14 showed a positive correlation between building design and decorations with medical tourists' satisfaction with Jordanian medical destinations (0.302). According to H12, a moderate positive relationship emerged between hospitality and reception facilities and medical tourists' satisfaction with medical destinations (228). H13 also explained the positive relationship between medical devices and equipment and medical tourist satisfaction (0.27). Finally, H14 showed the weak positive relationship between the luxurious medical services provided to VIP and the medical tourists' satisfaction with Jordanian medical destinations. In conclusion, hypothesis H1 found a strong positive relationship between the physical environment and medical tourists' satisfaction with Jordanian medical destinations (0.471).

On the other hand, statistical analysis shows that the f^2 measures the impact level of the IV on the DV (Hair et al., 2021). In other words, f^2 measures the extent of the impact of the physical environment (components, building design and decorations, hospitality and reception facilities, medical equipment and tools, and Luxury services) on medical tourists' satisfaction with Jordanian medical destinations. The statistical rule states that f^2 exceeding 0.35 indicates a high effect, a

value between 0.15 and 0.35 indicates a medium effect, and less than 0.15 indicates a low effect. A value less than 0.02 shows no effect. Table 3 indicates the coefficients of the impact of the IV on the DV. We find a moderate impact of buildings and decorations on the medical tourists' satisfaction (0.270), and that the relationship is supported to a moderate degree. There was an impact of hospitality and reception facilities on the medical tourists' satisfaction (0.210), and this supports the moderated relationship between the two variables. Then, the impact of medical devices and equipment (0.18) on medical tourists' satisfaction with Jordanian medical destinations, and this supports the moderated relationship between the two variables as well. In contrast, there was no effect of luxury services on medical tourist satisfaction (0.00), which does not support the relationship between the two variables. In summary, there is an impact of physical environment components on medical tourists' satisfaction with Jordanian medical destinations (0.279), and the relationship between the two variables is moderately supported.

On the other hand, the coefficient of determination R^2 indicates the power of the linear relationship between the two variables (IV and DV). R^2 indicates the percentage of variance in the DV when one of the IVs changes (Hair et al., 2021). The statistical rule says that an R^2 below 0.02 is considered very small, a value between 0.02 and 0.13 is considered moderate, and a value above 0.26 means high variance. According to the value of R^2 in Table 3, the three statistically significant components of the physical environment explained 40.1% of the variance in medical tourists' satisfaction with Jordanian medical destinations. Thus, 59.9% of the variance in medical tourists' satisfaction was attributed to other removed components in the measurement model.

Finally, the Predictive Relevance was resolved in the measurement model in the study, according to Q^2. The statistical decision rule states the predictive power of the model when Q^2 is above 0.00 (Chin, 2010). Returning to Table No. (3), there is a high possibility to analyze the variation in medical tourists' satisfaction with Jordanian medical destinations (Q^2 = 0.117). This indicates that the measurement model has moderate predictive power to explain the variation in medical tourists' satisfaction with Jordanian medical destinations. In the same vein, the Goodness of Fit (GOF) can be employed for Inner Constructs, which determines the Measurement Model performance and Structural Model indicators (Chin, 2010). As a result, the statistical decision-making rule stated that a GoF below 0.1 means that the model was not suitable, and that a value between 0.1 and 0.25 means that it was not suitable. If the GoF is between 0.25 and 0.36, then there is a moderately suitable level. If the value is above 0.36, the model is highly suitable. According to the value of Q^2, an average degree of fit is shown in the measurement model. Regarding the rest of the model suitability indicators (Model Fit), we find them in Table 4 (Ringle et al., 2024).

Table 4. GOF Value

Variable	Saturated Model	Estimated Model	Q^2 (=1-SSE/SSO)
SRMR	0.133	0.133	0.117
d_ULS	3.696	3.696	
d_G	3.477	3.477	
Chi–Square	468.658	468.658	
NFI	0.505	0.505	

Research Discussion

The current study concluded a positive impact of the physical environment on medical tourists' satisfaction with Jordanian medical destinations. Such an outcome confirms the findings of classical and modern studies in the field of service marketing and medical tourism. It established the initial concept of the physical environment or service landscape, Servicescape, as they considered it one of the determinants of service evaluation. In 1992, The researcher Bitner pointed out that the architectural, aesthetic, and functional components of a place's physical design influence customers' cognitive and emotional responses, and thus the satisfaction and subsequent behavior. The Wakefield & Blodgett study (1996) showed that the quality of the physical environment in highly interactive services is a critical factor in enhancing satisfaction, especially if it is associated with high perceived risks similar to therapeutic services. In the same context, the study by Reimer & Kuehn (2005) confirmed that the physical environment serves as a quality indicator to evaluate the efficiency of the service provider before the experiment is completed. Recent studies have expanded this approach within the framework of medical tourism, as Han & Hyun's (2015) study showed that the physical environment of hospitals directly affects international patients' satisfaction with the medical destination. As Kim et al. (2020) showed that improvements in hospital design and the psychological comfort elements enhance the medical tourist's experience and positive evaluation of the service. At the Jordanian level, a study by Al-Hammouri & Abu Farha (2019) revealed that the physical environment in private hospitals is one of the factors influencing the satisfaction of medical tourists, due to the sense of security and professionalism it provides. Elsewhere, more recent studies have supported this trend; here, Al-Natour et al. (2022) Investing in the physical environment of Jordanian health institutions reflects positively on the satisfaction of medical tourists and their future behavioral intentions. Rauf et al. (2024) added the previously mentioned elements of the physical environment in health facilities generate positive feelings in patients and affect levels of satisfaction.

As confirmed by the study of Li et al. (2022), the quality of the hospital environment affects patients' well-being and satisfaction with health services. Especially in medical environments that target tourists from multicultural backgrounds.

In the same context, Brambilla et al. (2025) found that the thoughtful architectural and internal design of hospitals has a positive impact on patients' experience and their perception of the quality of health care, stressing that the physical environment has become a strategic factor in improving the satisfaction of medical tourists.

The first sub-hypothesis showed that building design and decorations have a positive effect on how satisfied medical tourists are with Jordanian medical destinations. This result matches earlier and recent studies on healthcare environment design and medical tourism. The way hospitals are built and decorated is a key factor in shaping the experience of medical tourists. Good design helps create a comfortable setting that can lower stress and anxiety for people getting treatment in another country. Ulrich (1984) found that well-designed health facilities, with attention to aesthetics and visual harmony, can improve patients' psychological well-being and lead to better service evaluations. Kaplan & Kaplan (1989) also found that environments designed with both beauty and function in mind help people feel more comfortable and in control, which increases satisfaction. In the context of health services, the Douglas & Douglas study (2004) showed that hospital interior design, including colors, space distribution, and decorations, directly affects patients' perception of service quality.

Recent studies have emphasized the importance of design in medical tourism in particular. Han & Hyun (2022) showed that the architectural and interior design of hospitals is a major factor in shaping the mental image of the therapeutic destination and raising international patient satisfaction. As Sadatsafavi et al., study found (2020). Modern decorations and designs that support psychological comfort contribute to enhancing the medical tourist's experience and their positive evaluation of the treatment service. The study by Al-Azzam et al. (2021) found that the quality of architectural design in private hospitals in Jordan plays a significant role in the satisfaction of foreign patients, providing a sense of professionalism, modernity, and reliability. It also supported the study of Brambilla et al. (2025). The design of the built environment in hospitals - the quality of architectural composition, visual harmony, and the use of aesthetic elements that support psychological comfort - directly affects patients' well-being, their positive perception of the health care experience, and the level of satisfaction. From an architectural perspective, Harris et al. (2002) showed that hospital therapeutic design, based on calm decorations, comfortable colors, and balanced functional spaces, contributes to reducing stress and feelings of alienation in patients. Especially those coming from different cultures, which is consistent with the nature of medical tourism. Here, a recent study confirmed that Shetty et al. (2024). The carefully designed physical environment within healthcare facilities influences the psychological and behavioral experience of hospital users, noting that the quality of interior design and decoration is a factor supporting overall satisfaction with healthcare services.

The second sub-hypothesis found a positive effect of hospitality and reception facilities on medical tourists' satisfaction with Jordanian medical destinations. It is thus consistent with many classic and modern studies in the field of medical tourism and patient experience management. Baker et al. (2002) explained that the quality of reception and waiting areas indirectly affects customer satisfaction. This is done by enhancing their awareness of the overall quality of service and a sense of psychological comfort. Dagger & Sweeney (2007) also noted that non-medical supportive services, such as reception style, ease of procedures, and personal attention, represent an essential element in patients' assessment of the quality and satisfaction of health services. In the context of medical tourism, a study by Lee & Kim (2018) showed that the quality of hospitality and reception services contributes to reducing anxiety among international patients. It leads to increased levels of satisfaction and confidence in the therapeutic intent.

unt et al. (2020) said that the first reception experience is one of the most influential stages of the medical trip in shaping the general impressions of the medical tourist. At the level of recent studies, Ahmad et al. (2023) study confirmed that hospitality facilities like efficiency of reception staff and the availability of multilingual guidance services, positively impact medical tourists' satisfaction and behavioral intentions. The Khiewpan et al., 2024 study showed that the quality of the arrival and reception experience in hospitals is one of the essential elements in designing medical tourism services, and enhances the satisfaction of foreign patients with the treatment destination. It was also found that the efficiency of reception and front office services is positively related to patients' levels of satisfaction and happiness. In the same context, the study of Prasetyo et al. (2021) showed that service facilities and patient admission procedures are factors influencing the satisfaction of hospitalized patients and enhance feelings of comfort and confidence. Hence, we realize that hospitality and reception facilities play a pivotal role in enhancing the satisfaction of medical tourists and are a supporter of the mental image and competitive advantage of the therapeutic destination.

The third sub-hypothesis showed a positive effect of medical equipment and devices on tourists' satisfaction with Jordanian medical destinations. Early literature has indicated that advanced medical equipment is one of the most important physical pieces of evidence that patients rely on to evaluate the quality of health care. Especially in therapeutic settings characterized by a high level of risk and uncertainty. In this context, Zeithaml (1988) explained that tangible indicators, such as equipment and devices used in service provision, play a pivotal role in shaping beneficiaries' perceptions of quality. Andaleeb (2001) showed that modern medical equipment and its operational efficiency are basic determinants of patient satisfaction with health services in hospitals. In the same context, the study by Dagger et al. (2007) said the novelty and accuracy of the devices directly influence patients' assessment of service quality and satisfaction. In the field of medical tourism, Han & Hyun's study (2015) confirmed that medical technology in hospitals represents a decisive factor in shaping their satisfaction and confidence in the therapeutic destination. Naidu's (2009) also found that investing in advanced medical equipment enhances the image of hospitals among foreign patients and raises levels of satisfaction and loyalty. Turning to recent studies, I showed the results of the studies of Alasasfeh et al. (2024). The use of advanced diagnostic devices in Jordanian hospitals had a positive impact on patients' experience and satisfaction with health services. As the study of Oh et al. (2025) showed the availability of high-tech medical equipment in hospitals is positively associated with medical tourist satisfaction and improved clinical outcomes.

In the same context, the Alghamdi (2025) showed that the quality, modernity, and operational efficiency of the devices used affect patient satisfaction with diagnostic department services. Oh et al. (2025) added high-tech medical equipment is positively related to patient evaluation, service quality, overall treatment experience, and subsequent satisfaction level. Accordingly, the findings of the current study are consistent with previous literature. It emphasizes that medical equipment

and devices represent a strategic element in enhancing medical tourist satisfaction and supporting the competitiveness of Jordanian medical destinations in the medical tourism market.

The final finding of the current study was that there was no statistically significant effect of business services on medical tourists' satisfaction with Jordanian medical destinations. This finding reflects an important research direction imposed by a group of previous studies that distinguished between basic services related to the quality of treatment and complementary services of a high-end or luxurious nature. The Han & Hyun (2015) showed that medical tourists' satisfaction is primarily shaped by the quality of medical care, the efficiency of medical staff, and the accuracy of therapeutic procedures, while accompanying luxury services are not a decisive factor in satisfaction unless they are associated with a direct improvement in the therapeutic experience. The Connell (2013) also found that international patients, especially those coming for purely therapeutic purposes, prioritize medical outcomes and clinical safety.

They consider high-end hospitality services to be secondary elements that do not fundamentally affect the evaluation of the therapeutic destination or the satisfaction of medical tourists. In the same context, the study by Lunt et al. (2016) showed that the excessive focus on luxury hotel services in medical tourism may not necessarily be reflected in patient satisfaction, but may sometimes be viewed as an unnecessary additional cost, unless it is matched by a tangible improvement in the quality of treatment. The Fetscherin & Stephano (2016) also confirmed that the perceived value of medical tourists is determined primarily by the effectiveness of treatment and medical transparency, rather than by the level of services provided to businessmen or the upper classes. However, recent studies have indicated mixed results, which generally tend to confirm that the services of businessmen and the upper classes do not have a significant impact on the satisfaction of medical tourists. Anugroho et al. (2025) showed that medical tourist satisfaction is primarily determined by the quality of clinical care, the efficiency of medical staff, and the effectiveness of medical communication. Complementary and luxury services were among the secondary factors with limited impact, and without a strong direct impact on satisfaction. In the same context, a recent study on medical tourism in Malaysia showed that international patients, especially those coming from the Middle East, give greater priority to the quality of treatment, safety of procedures, and medical reliability, while high-end services or services directed to distinguished segments were not statistically significant in satisfaction (Almodawer et al., 2025). The study by Sharma (2025) confirmed that non-clinical services affecting satisfaction are concentrated in functional aspects such as facilitating procedures, communication, and humanitarian support. We find that luxury or entertainment services will not increase satisfaction unless they are directly linked to improving the basic treatment experience. From a different angle, Sag et al. (2025) added that higher spending or availability of high-level services does not necessarily lead to higher levels of satisfaction among medical tourists.

But it links satisfaction more to how well the service matches patients' basic treatment expectations.

Accordingly, recent studies confirm the conclusion reached by the current study and show that the services of businessmen and the upper classes do not represent a decisive factor in the satisfaction of medical tourists, unless they add direct value to the essence of the medical service itself. Therefore, the explanation for the current finding lies in the fact that medical tourists in Jordanian medical destinations have a rational approach based on safe and effective treatment at a reasonable cost, and this approach reduces the importance of the services of businessmen and the upper classes in shaping satisfaction. It reinforces the hypothesis that these services are not a factor in satisfaction unless they are directly related to the essence of the treatment experience itself.

1. **Theoretical and Practical Implications**:

- Theoretical Implications: The results of the study contribute to deepening academic understanding of the factors determining the satisfaction of medical tourists. This is done by re-prioritizing the variables affecting satisfaction within models of service quality and patient experience. The results confirm that fundamental variables related to the essence of the treatment service, such as the physical environment, the quality of medical equipment, and the efficiency of supporting functional elements, have a direct moral impact on the satisfaction of medical tourists. While some complementary variables of a luxury nature, such as business services and the upper classes, are not a decisive factor in shaping satisfaction. This result supports theoretical proposals that distinguish between functional value and symbolic value in health services. She emphasizes that medical tourists adopt rational behavior directed toward minimizing risks and achieving therapeutic benefits, rather than pursuing luxury or extravagant appearances. The study also contributes to the development of medical tourism literature by presenting empirical evidence from a developing Arab context, which still suffers from limited applied studies. This enhances the generalizability of some theoretical models or their modification to suit the characteristics of medical tourists in the region.
- Practical Implications: The study presents the results that have important implications for decision makers and managers of hospitals and health institutions working in medical tourism in Jordan. The results indicate the need to redirect investments and financial resources towards elements that have been proven to have an actual impact on the satisfaction of medical tourists, most notably improving non-health facilities, modernizing medical devices and equipment, and enhancing the quality of basic services associated with the treatment experience. Instead of focusing excessively on luxury services or services directed to limited segments of patients, such as businessmen. Therefore, the study provides a broader understanding for managers of Jordanian hospitals and treatment destinations of how to adopt marketing strategies that highlight medical efficiency, quality of equipment, and a safe and comfortable treatment environment as key competitive elements for Jordanian treatment destinations. This is instead of promoting entertainment or high-end services that may not add real value to the medical tourist experience. At the public policy level, health and tourism planning agencies can leverage these findings to formulate policies that support medical tourism. These policies may focus on improving the

quality of care and health infrastructure. In addition to enhancing Jordan's mental image as a reliable, quality, and efficient treatment destination. Thus, the study confirms that aligning administrative and investment decisions with actual medical tourism priorities represents a key input for achieving competitive sustainability in the medical tourism sector.

CONCLUSION

In light of the objectives of the current study and its analytical results, it can be said that it provided a comprehensive and in-depth understanding of the determinants of medical tourists' satisfaction with Jordanian treatment destinations. It contributed to bridging an important knowledge gap in the medical tourism literature, especially in the Arab context. The results showed that medical tourist satisfaction is primarily shaped by intrinsic factors related to the quality of the treatment experience itself, primarily the physical environment of healthcare facilities, the modernity and efficiency of medical devices and equipment, and the efficiency of the basic functional services associated with healthcare delivery. On the other hand, the study revealed no significant impact of some complementary luxury factors, such as business services and the upper classes. This reflects a rational approach among medical tourists, focusing on therapeutic benefits and reducing perceived risks. They move away from luxuries or privileges not directly related to the essence of the medical service. The results also confirm that medical tourism cannot be compared to traditional tourism, but rather should be viewed as a highly sensitive health–service activity, the quality of which is measured by its clinical efficiency, reliability, recovery-supporting environment, and distance from accompanying luxury services. The study also highlights the importance of reformulating prevailing theoretical models of customer satisfaction when applied in the health context. This may be done by focusing on functional value and perceptions associated with safety, trust, and professionalism, as the most influential determinants of a medical tourist's behavior and assessment of his satisfaction with the treatment experience. At the applied level, the study concludes that enhancing Jordan's competitiveness as a regional and international treatment destination requires directing investments and administrative efforts towards developing health infrastructure. Improving the physical environment of hospitals, modernizing medical equipment, and adopting administrative and marketing practices that reflect the essence of medical quality. We should also not focus on complementary elements that do not add real value to the medical tourist experience. The results of the study open future research horizons to study the roles of intermediate and modified variables, such as trust, perceived risk, and perceived value, in explaining the relationship between the components of the therapeutic experience and the satisfaction of medical tourists in different cultural and geographical contexts. Thus, this study constitutes a qualitative scientific and applied addition to the field of medical tourism. It may contribute to supporting decision-makers, researchers, and health institutions with an evidence-based understanding of the priority of factors influencing medical tourist satisfaction. In addition to the sustainability and competitiveness of Jordanian therapeutic destinations in a highly competitive global health and tourism environment.

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