

## Designing A Medical Tourism Marketing Model To Spread Positive Messages In Iraqi Hospitals (Karbala City Case Study)

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### Abstract

**Background and purpose:** *The medical tourism market has emerged as one of the most profitable and competitive industries in the world and is one of the new fields of advanced tourism. Today, the medical tourism industry is considered a special type of tourism and is considered one of the most important industries in the world and one of the most profitable industries. Although many factors can influence the choice of destination in medical tourism, some factors are essential for medical tourism. In this situation, it is necessary to explain and improve the strategies and mechanisms of promoting and empowering this industry by marketing the medical tourism destination as an important issue in the country. The present study addresses the literature related to the image marketing of a medical tourism destination with more than one study and provides new ideas for disseminating positive messages that in turn increase the marketing of a sustainable medical tourism destination and successfully communicate with others. This research aimed to identify factors related to medical tourism marketing in Iraq, especially in the hospitals of Karbala city, by providing a model for medical tourism marketing with the help of recommendation systems.*

**Research method:** *This research is considered mixed (qualitative-quantitative) research in terms of practical and developmental goals. The statistical population of this research in the qualitative part includes interviews with 15 experts specializing in medical tourism marketing, including university professors, managers, and owners of hospitals in Karbala, as well as a group of experts overseeing hospital departments. The semi-structured interview method is used to design the model and realize its various components, in this way, general questions are first designed for the interview, and then during the interview, the interviewee is asked according to the type of answer.*

**Findings:** *The results of the research are expressed in two parts, qualitative and quantitative. In the qualitative part, the results<sup>1</sup> showed that the design of the medical tourism marketing model includes six dimensions including causal conditions (15 subcategories). The main phenomenon: (5 subcategories); contextual conditions (5 subcategories); Intervening conditions (5 subcategories); strategies and strategies: (7 subcategories); and Consequences: (7 sub-categories). After performing the TOPSIS technique algorithm in the quantitative part of the research, three categories in terms of importance in medical tourism marketing took advanced positions, which are (modern medical equipment), (diversity in treatments and examinations), and (fame). Modern medical equipment plays an important role in the*

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*development and provision of health services in medical tourism. Because it plays a role in improving the quality of medical services provided to patients in tourist medical centers. The factor of diversity in treatments and tests is also important in medical tourism marketing, because meeting the needs and preferences of potential patients is extremely important, and a medical destination can attract a diverse group of patients by offering a wide range of treatments and tests, needs to fix them Tests Good reputation also plays an important role in the development and provision of health services in medical tourism, because it increases trust and credibility and indicates the quality and excellence of medical services. Therefore, it will help a lot to promote medical tourism and attract more tourists seeking medical treatment abroad.*

**Conclusion:** *Based on interviews with 15 medical tourism marketing specialists in Iraqi universities and hospitals, 44 subcategories were identified and extracted into 6 main categories. Among the 44 components, modern medical equipment in terms of importance in TOPSIS algorithm analysis with a distance from the positive ideal ( $d^+$ ) (0.003), with a distance from the negative ideal ( $d^-$ ) (0.010), and with the final score ( $cl$ ) (0.7429). Variation in treatments and examinations ranked second with the distance from the positive ideal ( $d^+$ ) (0.003), with the distance from the negative ideal ( $d^-$ ) (0.009), and with the final result ( $cl$ ) (0.7362). Shahrat ranked third in terms of importance with a distance from the positive ideal ( $d^+$ ) (0.004) and with a distance from the negative ideal ( $d^-$ ) (0.010) and the final result ( $cl$ ) (0.7334).*

**Keywords:** *medical tourism, customer satisfaction, service quality, positive messages, crew professionalism.*

### **Introduction:**

Tourism is critical to the success of many economies around the world. There are several benefits of tourism in host destinations. Tourism increases the income of the economy, creates thousands of jobs, develops the infrastructure of a country, and creates a sense of cultural exchange between foreigners and citizens (Hu et al., 2020). Health tourism is one of the new fields of tourism, which is considered a more valuable economic industry in the world today. Many governments are also interested in obtaining the economic benefits of this industry, and increasing competition has begun between different countries to attract health tourists, especially developing countries in Asia (Azizallah et al., 2021).

Medical tourism is defined as: "the movement of a tourist from one country to another, with the motive of obtaining treatment for certain diseases or satisfying embodied needs in natural elements that do not exist in the environment of his native country. It is also known: "It is a trip to enjoy the soul and body along with treatment, or it is a trip to treat body diseases along with fun." Some know it: "Medical tourism is a process in which a person moves from one country to another for not less than 24 hours and not more than a continuous year for treatment, for many reasons. including seeking medical services that are not available in his country, or that are available but of poor quality, or because of their high cost, or because of a long waiting period to receive them (Zarei et al., 2020).

Medical tourism should be considered as a phenomenon in which patients travel outside of their permanent residence to benefit from health-related services, including tourism packages, and this is a growing phenomenon that is recognized by Steadfast patients who are guided in search of quality and reasonable prices. Costs, availability, access to health care, perceived quality, satisfaction, trust in staff and clinics, and the attractiveness of a tourist destination, including access to treatments that are not legally permitted on the property (Dryglas, 2018). Reasons for patients' medical trips also include general dissatisfaction with the national health

system, or even the need to maintain confidentiality for certain individuals seeking medical treatment (Nouri et al., 2019).

A two-way factor affects the mobility of medical tourists. These two directions can be considered mandatory and optional factors that may influence the decision of a potential medical tourist. Among the mandatory factors, we can mention the lack of optimal treatment in the country, the high cost of medical services, the long waiting list, and the low quality of medical treatment in our country. Voluntary factors include geographic proximity, the advantages of having sea, sand and sun; Similarity of language and culture; night activities; Etc (Dryglas et al., 2019).

Medical tourism has created a new financial field as an alternative source of capital with a rapidly growing market share worldwide. Developing, developed, and even underdeveloped countries have made investments to increase their medical tourism market. It is a known fact that the health systems of most countries that want to invest in the medical tourism market and increase their share are not good. Nevertheless, the fact that many countries with weak health systems are investing in this area is proof that medical tourism is seen as a very important business opportunity (Nouri et al., 2019).

In the province of Karbala in Iraq, many private hospitals have emerged that provide very good health and treatment services, which is one of the most important needs that the customer (tourist) continuously needs during his tourist and treatment journey. This city is considered one of the medical tourism destinations due to having advanced hospitals with experienced medical and administrative staff, modern equipment and infrastructure, and two holy shrines of Imam Hussein (peace be upon him) and his brother Imam Abbas (peace be upon him). The customer (tourist) may need sufficient information about these hospitals while visiting this city. Therefore, the problem of the study is due to the need of the customer (tourist) to receive positive messages from the client who has benefited from the services of these hospitals or changed the medical tourism destination through a previous transaction and identify the factors related to the marketing of this is the destination.

#### **The importance of medical tourism:**

Many researchers have pointed out the importance of medical tourism in the country and that this industry is the most profitable in the world, but we see that the most important points of attention (Obaid et al., 2021) correspond to reality. Medical tourism in the city of Karbala: (helping to revive the health and hospitality sector), (activating the movement of buying and selling and the economic wheel), (helping to revive the investment process in the health and hospitality sector). (Al-makhadmah, 2020) (helps to provide new job opportunities, especially in countries suffering from high unemployment), (serves as a means of promoting their products and other tourist attractions for those countries), (educational opportunities provides), (helps to provide foreign exchange needed to support the national economy), (enables the beneficiary to receive high quality medical and hospital services in international standards and at competitive prices), (Provide or accompany tourists to visit tourist attractions).

Another researcher also pointed to another theory regarding the importance of medical tourism, but we see that the most important axes discussed by (Mohammed et al., 2021) are consistent with the reality of tourism in Iraq: (exploitation and exploitation of natural resources), (mineral water, water and air), (attracting tourists by stimulating health services and facilities as well as tourist facilities), (paying attention to recreational and educational activities that people do away from work and housing and resorting to resorts for promoting health and maintaining

vitality), (encouraging travel for medical reasons for treatment, use of preventive methods or exercise to improve body strength).

**The main factors affecting medical tourism:**

There are many reasons why patients travel abroad for medical treatment. The choice of a medical tourism destination is influenced by the tourist's travel motivation, which can be explained using push and pull factors. In tourism studies, push factors refer to the internal desires of humans, such as escaping from a busy routine or seeking adventure and novelty. On the other hand, pull factors refer to elements that make people recognize their needs, such as people, cost, image, facilities, etc. In the previous literature, the factors that influence the choice of medical tourism destination were mentioned, but we can see that the most important factors affecting the choice of medical tourism destination discussed by (Drinkert et al., 2017) apply to the city of Karbala in Iraq: political conditions), (economic conditions), (regulatory standards), (cost), (accreditation of hospitals), (quality of services and facilities), (expertise of doctors), (long waiting time), (opportunity to travel), (methods illegal or untested), (privacy), (insurance). Other researchers identified eight motivations that explain citizens' participation in medical tourism. In addition, the lack of health insurance, high costs, lack of access, and unfamiliar language and culture are factors influencing people's medical travel abroad.

**Factors influencing the choice of medical tourism destination:**

Many researchers have addressed the issue of factors influencing the selection of medical tourism destinations, but we can see that the most important axes discussed by (Reddy, 2017) are consistent with the reality of tourism in the city of Karbala, the most important of which is political stability, that is, when the tourist from the land The self-moves to another country abroad (host countries), lives in a different political and legal environment than its local environment, including the political environment that forms an important part of business and work. Environment. in this field. Tourism to countries where before traveling to the host countries, the political environment is examined in terms of the nature of the political system, governments, their policies, and the stability of their policies towards tourists. They seek political stability, so attracting tourists to countries is related to their political stability because there is a direct relationship between political stability and attracting tourists.

Another factor that affects the choice of medical tourism destination is cost, which means the ability to provide tourism services at the lowest possible cost compared to competitors. This dimension is based on the lowest input cost of providing tourism services compared to competitors, which means achieving a reduction in total cost (Al-Azzam, 2016). The cost is one of the very important competitive factors that removes barriers between countries by reducing the price of tourism services. Cost also represents the ultimate goal or goal that competition on price is considered, because the least important cost becomes the main objective of the operation, assuming that the lower the prices, the more the number of tourists, but not the quality. which works on increasing the profit margin (Al-Shantaf, 2021).

Also, another factor that affects the choice of medical tourism destination is the quality of services that medical tourists strongly focus on the quality of services provided by the destination country. Therefore, the destination country must meet the expectations of medical tourists through quality services and performance. It is very difficult to implement quality improvement and its potential in travel and tourism services because it involves people from different countries with different backgrounds and cultural demands (Jiang et al., 2019). However, companies can improve service quality by reducing distribution costs and increasing services provided. In medical tourism, if any country can provide quality healthcare services at a low cost, it will definitely attract the world. In this section, the meaning of quality service is

a broad topic. This includes the quality of the health care facility as well as the doctors and other staff. However, health care is actually a very individual and vital service, and determining its quality is not an easy task. (Eze et al., 2021).

Finally, another factor that affects the choice of a medical tourism destination is trust, which is necessary to maintain a sincere health care provider and tourist relationship. Destination trust describes the visitors' belief that a place is reliable to fulfill its promised tasks (Abubakar, 2016). However, companies can improve service quality by reducing distribution costs and increasing services provided. In medical tourism, if any country can provide quality healthcare services at a low cost, it will attract the world. In this section, the meaning of quality service is a broad topic. This includes the quality of the health care facility as well as the doctors and other staff. However, health care is a very individual and vital service, and determining its quality is not an easy task (Eze et al., 2021).

### **Marketing aspect:**

Marketing is a vital component for businesses because of its ability to create awareness, attract, educate, and influence customers to purchase products or services. As usual, businesses often depend on their marketing mix (eg, place, product, price, and promotion) to approach their target market. Derived from the marketing mix context. In the tourism and hotel industry, advertising and price have become important areas that have attracted the attention of many researchers. As understood by the American Marketing Association (2018), advertising is any announcement or persuasive message sent through mass media at a time or place paid for or donated by a specific individual, company, or organization (Cham et al., 2020).

As an important part of commercial industrial growth, advertising is one of the key elements in marketing communication adopted by many organizations to reach potential customers, attract their attention, and influence the purchase of certain products and services. Additionally, advertising has been reported to be more effective in encouraging customers to try a new product than sales promotion. An advertisement is considered effective if its content can influence emotions, attract attention, stimulate purchase intention, and create a memorable impression on customers. Like any other industry, advertising has become a key strategy for hospitals in different countries involved in medical tourism to actively promote their services through the foreign press (Cham et al., 2021).

### **Marketing medical services in medical tourism:**

Services marketing continued to develop because service-oriented researchers believed that (1) it filled an important gap in the marketing literature and (2) there was an industry that required academics to act. The growth of the medical tourism industry depends on care providers, governments, and healthcare consumers (patients). Care providers are exposed to a competitive environment, price competition, and patients with unique demands. Therefore, the role of marketing becomes more and more important for the survival of service providers as the industry promotes market orientation for healthcare. Although tourism and healthcare are both service-oriented sectors, the underlying purpose of consuming products is different. A normal tourist is looking for pleasure, while healthcare consumers need medical care. To gain an understanding of the difficulty in promoting medical tourism, it uses the concept of service marketing, considering healthcare as the main product, patients as healthcare consumers, and hospitals, clinics, and facilitators as healthcare providers. From these three basic aspects, that is, the main product, the consumer, and the provider, complications in the marketing of healthcare services are created in three ways (Berry, 2019).

First, health services are necessary but not desirable. Unlike hospitality services, healthcare consumers typically do not feel comfortable traveling, even if they consider it necessary. In addition to the inherent characteristics of services (intangibility, heterogeneity, inseparability, and perishability), this type of service has a high-reliability factor. This means that it is difficult to assess the level of satisfaction and service quality even after consumption. Additionally, the patient's decision is complicated by inherent medical, emotional, and business risks. Therefore, building trust is important to reduce this type of uncertainty (Zarei et al., 2019).

Second, medical tourism is related to the nature and complexity surrounding the consumer of health services. Patients are not ordinary consumers. Healthcare patients engage in medical tourism when they are going through a critical period of their lives. In most cases, patients are heavily involved in the decision-making process, which is unique to the consumer sector. In addition to inherent characteristics, the researcher identified problems related to cultural influences in the international context of marketing health services. Cultural differences between service providers and consumers regarding beliefs, standards, and attitudes may prevent successful service marketing. In addition, due to the abundance of information available on the Internet, patients and their families can easily access information about the disease, recent treatment, and its price level from different providers. Patients tend to rely on word of mouth before making a decision. As a result, patients become an informed, sophisticated, and price-sensitive consumer segment, which makes marketing more difficult (Anderson et al., 2018).

Finally, healthcare providers such as hospitals and clinics are not traditional commercial marketers. The health sector is often government-run, where aggressive marketing is uncommon. Therefore, hospitals as a competitive organization attract little attention from researchers. In the case of medical tourism, medical services are mainly profit-driven, and therefore both private and public entities see the necessity of careful marketing activities for survival. Many healthcare providers are creating new specialized units, one of which focuses on the care of medical tourists, while the other focuses on international strategic marketing. Adherence to the standard and institutionalization of medical delivery as it is done in the United States has become one of the characteristics of medical tourism providers (Rydback, 2022).

#### **Medical expertise and hospital credentials of doctors:**

A service is defined as "an activity or set of activities of a more or less intangible nature that usually, but not necessarily, takes place in interactions between the customer and service personnel and/or service provider systems, which are offered as solutions to the customer." challenges and issues". The quality of medical services is indeed visible but it is difficult to measure. The quality of services can be measured in different ways (Navid et al., 2010). The quality of services is one of the most widely used models. The researcher suggests that service quality is determined by the gap between expected service and perceived service. Customers have a negative perception of service quality when their expectations of service are greater than what they experienced. On the contrary, when the service quality exceeds the expected level, they have a positive perception of quality. After conducting an empirical investigation by researchers, the measurement of service quality includes five tangible dimensions, reliability, responsiveness, assurance, and empathy. Service quality has also been widely used to measure service quality in the medical care industry (Wang, 2017).

The medical expertise of doctors refers to the professional medical skills of doctors. Most previous studies in the field of medical tourism have focused on the quality of medical services (medical and care services, major and minor surgeries, and aesthetic and psychological treatments), without considering the personnel of medical clinics. Few studies have highlighted

the important role of doctors' expertise in the success of a medical clinic (Guiry et al., 2015). He specifically emphasized the importance of professionalism, knowledge, explanations, and excellence of doctors in obtaining patients' satisfaction from clinics. Medical service quality (eg, excellence in medical care, surgical/medical skills, continuity of care) was significantly associated with medical tourist satisfaction, which was associated with trust in the clinic. In addition, in a study on medical tourists in Malaysia, hospital facilities and doctors/physicians were two important dimensions in influencing patients' overall satisfaction with hospitals and doctors (Shin et al., 2018).

The quality of services provided by healthcare providers is an essential factor for patients. While patients are taking the initiative to travel to another country, they are looking for quality treatments along with services. This makes patients satisfied as they look for hospitals that provide quality services. It is also necessary to provide high-quality services to satisfy foreign patients' visits (Aydin et al., 2017). The researchers measured nine variables similar to the main parts of the health tourism experience and their impact on patient satisfaction. Physicians' specialty quality, physicians' interpersonal abilities, nature of medical caregivers, nature of support staff, order framework efficiency, waiting time, interview duration, physical environment, and admiration for patient safety. The researchers also combined the general consumer perception of tourists with travel and return offers observations and recommendations that could be used to enhance or update management assistance to guests. Researchers consider superior service quality to be essential for patient satisfaction. Other researchers have also highlighted the importance of service quality in terms of patient satisfaction (Haque et al., 2018).

#### **Conceptual dissemination of positive messages:**

Studies show that people and local communities support tourism projects if they see more benefits from the tourism industry than their perceived costs. In the context of medical tourism, the social benefits perceived by residents are essential for the destination's competitiveness and continued growth. Social benefits such as effective local government, efficient local services, good job opportunities, and a good transportation system are essential for public support, and population support for tourism development depends on the economic, social, cultural, and environmental impacts of tourism (Stylidis et al., 2016). Therefore, these perceived benefits of medical tourism must be effectively communicated to stakeholders. Tourism service providers can effectively use positive messages to communicate the economic and social benefits of medical tourism to all relevant stakeholders through publications, photos, and videos. For example, medical tourism providers can use social media to run health campaigns, seminars, and workshops for community development, advertise job opportunities, and provide advice on healthy living through social media channels (John, 2017).

When organizations use social media posts for marketing purposes, they gain a significant advantage over their competitors. The number of people participating in social networks is increasing day by day, and their high number means that the entries can be spread quickly among many people in a very short period. Therefore, it allows the spreading of positive news and rumors about institutions in the social network. Online media communication sites are among the sites where people spend their time in a virtual environment where visual and audio ranges are broadcast. These sites provide the possibility of transferring video/music and photos and sending messages to other users. Millions of people can view shared images in a few hours. Undoubtedly, creating an organizational username through advertising and providing the most correct and reliable information through this source will help all concerned people to promote and by creating an excellent source of information, it will lead to significant changes in the

opinions of potential guests. The cost of this advertising tool is very low. Many resources saved for upgrading are saved with this resource and can be spent on other needs (Azazi et al., 2020).

Despite the growing popularity of medical tourism and the growing number of online materials promoting various services, there is currently a lack of research examining the general characteristics of the medical tourism industry, its messages, and relevant information provided to potential patients (Crooks et al., 2011). Given the popularity of online health information sources, online messages are often the first source that patients learn about medical tourism opportunities, treatment options, and other key information. In addition, online messages may play an important role in potential medical tourists' perceptions and decisions about medical tourism (Jun, 2016).

### **Research Methodology:**

The current research is classified in the "mixed research" group in terms of its purpose and application and terms of the method of data collection. In this way, the factors related to the marketing of the medical tourism destination are determined based on the positive messages and paradigmatic dimensions of the research model from the mixed exploratory research project and the foundation's data theory approach in a systematic and quantitative format. The segment was used to weight, importance, and rank the components extracted from the qualitative section. This research was conducted in two qualitative and quantitative phases.

In the qualitative stage of the conceptual model, the factors affecting the marketing of the tourist destination for medical tourism are determined through the constructive model. The construction of the model at this stage was done after studying the documents/libraries related to the subject, based on structural explanatory modeling based on the opinion of experts. After that, to test the strength of the explanation of the conceptual model, the model was drawn at the level of identification of the factors that were placed on the marketing of the tourism destination to provide the basis for the application of the model. In the quantitative phase of the research, the validity of the relationships described in the model is confirmed using appropriate statistical methods. The most important software used to analyze the search results was the TOPSIS technique algorithm.

The rationale for combining these two types of information is that quantitative and qualitative methods alone cannot fully understand the nature of the problem, identify the process, and describe in detail the complex problem conditions that occur in a specific context. When a combination of methods is used, quantitative and qualitative methods complement each other and provide a more complete picture of the research problem (Tashakkori et al., 2010).

In the present study, the researcher has used the exploratory mixed research design as a research strategy, which is used to collect, analyze, and combine or integrate quantitative and qualitative data in some stages of the research process in a single study (Creswell et al., 2017). In the exploratory mixed research project, the researcher tries to determine an uncertain situation that does not have a measurement tool and a framework for guidance (Khanifar et al., 2018).

In terms of the order of data collection, qualitative data will be collected first, and then quantitative data, which refers to the sequential exploratory strategy in mixed research. The sequential exploratory strategy includes the first stage of qualitative data collection and analysis, then the second stage of quantitative data collection and analysis, which depends on the results of the first qualitative stage. In this strategy, qualitative data is given more weight and importance, and data is integrated through the link between qualitative data analysis and quantitative data collection. At the most basic level, this strategy aims to use quantitative data



to help interpret qualitative results. This approach is useful for a researcher who may be exploring a phenomenon but also wants to extend qualitative findings (Creswell, 2009).

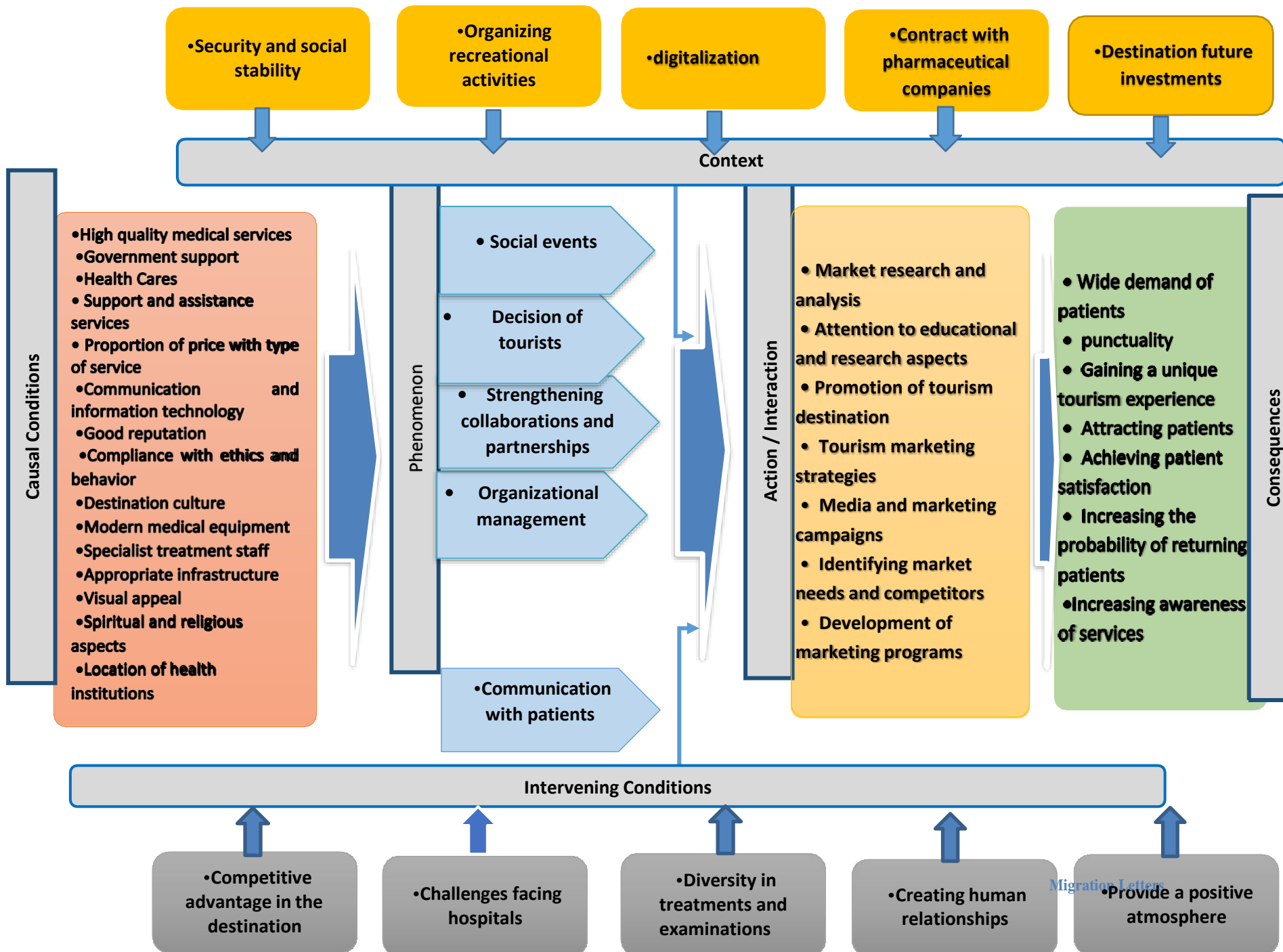
For this purpose, the researcher first collects and analyzes qualitative data, and in the next step, uses quantitative methods to analyze qualitative data. Based on the results obtained from the qualitative data, the researcher tries to collect, test, and analyze quantitative data to enable the generalization of the results. Briefly, the categories obtained from open coding based on the first question to the sixth question, in the form of 44 sub-categories in the dimensions of six main categories in the form of causal conditions (15 sub-categories), main phenomenon (5 sub-categories), contextual conditions (5 sub-categories), intervening conditions (5 sub-categories), strategies (7 sub-categories), and consequences (7 sub-categories), The details of which are contained in the conceptual model No. (1). Previous relevant studies are in Table No. (1).

Table (1): relevant previous studies

No	Names of authors	Title	Year	Journal	Result
1-	Javier Tapia , Marcos Dieste , Elena Royoa , and Elena Calvo	Factors affecting the choice of medical tourism destination: Spain as a host country.	2022	Journal of quality assurance in hospitality and tourism	-The objective of this research is to make an empirical analysis of the social, economic, and behavioral factors that influence the decision to travel for medical tourism reasons. -A Logit model is estimated to identify significant variables using official micro-data provided by the Spanish Ministry. -The purpose of this study is to attract tourists seeking medical treatments and increase investment in this growing sector. -The results describe the most likely medical tourist profile as a non-European, non-employed, non-retired person who uses the internet to plan the trip, whose destination is an accredited medical tourism center, and who does not incur any extra expenses on wellness services.
2-	T. Milton	Factors That Affect Selection of Health Tourism Places Amidst Tourists In Tamil Nadu.	2022	International Journal of Healthcare Management	-Study objectives: 1) To discover factors that affect the selection of health tourism places among tourists. 2) To scrutinize differences in factors that affect the selection of health tourism places amidst the socio-economic condition of tourists. 3) To assess the impact of factors that affect the selection of health tourism places among tourists on their revisiting intention. A random sampling technique is applied for the selection of tourists. Data are collected from 320 tourists by using the questionnaire method. Exploratory factor analysis is employed to discover factors affecting the selection of health tourism places among tourists. ANOVA and t-tests were applied. Regression analysis is adopted. -Study purpose: understand factors that affect the selection of health tourism places among tourists in Tamil Nadu. -The results elucidate that convenience, quality of medical service, cost of service, and recommendation by peers are factors that affect the selection of health tourism places among tourists.
3-	Marlisa Abdul Rahim, Nurzehan Abu Bakar, Nik Alif Amri Nik Hashim, Nor Maizana Mat Nawati, Hassnah Wee	Empirical evidence from the tourism industry on the factors that affect tourist destination satisfaction.	2022	Geo Journal of Tourism and Geosites	-The objectives of this study include examining the relationship between the natural environment and tourist destination satisfaction, examining the relationship between cultural and historical environment and tourist destination satisfaction, and examining the relationship between infrastructure and tourist destination satisfaction. -This quantitative study incorporated a convenience sampling technique where the responses were taken from 275 respondents among local tourists in Malaysia through an online survey. Pearson Correlation was used in this research. -This study examines variables in explaining the factors that affect tourist destination satisfaction among local tourists in Langkawi, Malaysia. -The result shows there was a high positive relationship between the natural environment and cultural and historical environment with tourist destination satisfaction, while the infrastructure factor has a low positive correlation with tourist destination satisfaction.
4-	Samira Raoofi, Rahim Khodayari-Zarnaq, Shabnam Ghasemyani, Hadi Hamidi & Soudabeh	Barriers of medical tourism development in Iran	2022	Anatolia	-This study aimed to analyze the obstacles to the development of medical tourism in Iran by providing a comprehensive picture of this area and being able to eliminate or reduce the effects of these factors in addition to contributing to medical tourism development and the positive effects of economic development. -The data were analyzed using content analysis. Fourteen studies were analyzed, and main obstacles were categorized into three main themes and 12 sub-themes including infrastructure factors (4 sub-themes), government-related or inter-sectoral factors (5 sub-themes), and health sector-related or intra-sectoral factors (3 sub-themes). - The results indicate that three main factors act as barriers to the development of medical tourism in Iran and include infrastructural factors, legal and governmental factors (inter-sectors), and factors related to the health system (within sectors).

Table (1): relevant previous studies

No	Names of authors	Title	Year	Journal	Result
5-	Kei Wei Chia & Yi Ming Liao	An Exploratory Study of Factors Influencing Chinese Outbound Medical Tourism.	2021	Journal of China Tourism Research	-The purpose of this paper is to highlight the fact that a key source of evidence is the study aimed to provide a starting point for future comparisons of medical tourism in other parts of the world. Thematic analysis qualitative method was employed to identify respondents' views on the factors influencing Chinese outbound medical tourists to seek medical services. -The purpose of this study is to explore the factors influencing Chinese mainland outbound medical tourism. -The results indicate that the quality of treatment is an important characteristic for potential medical tourists and that the quality of customer service is an important influencing factor for outbound medical tourism. Cost is another influencing factor, as the relatively affordable cost of medical treatment abroad is an attractive factor for Chinese tourists.
6-	Iva Bulatovic , and Katia Iankova	Barriers to Medical Tourism Development in the United Arab Emirates (UAE).	2021	International Journal of Environmental Research and Public Health	-This study aims to address the main challenges of medical tourism in the UAE and proposes ways to promote its development. -This research utilized qualitative analysis. Twelve professionals in medical tourism were interviewed to provide data. The data were then analyzed using NVivo 12 software. -The main purpose of this paper is to address the key barriers to medical tourism development in the UAE and to provide a recommendation for how the current situation could be improved to position the whole country among the top medical tourism destinations from the healthcare and tourism service quality perspective. - Results indicate that the key barriers to medical tourism development in the UAE are high costs of medical tourism services, lack of marketing activities, and lack of collaboration between medical and tourism service providers
7-	Rohollah Karimi, Somayeh Hesam, Rahim Ostovar	Designing a Model for the Management of Health Tourism Development in Fars Province, Iran.	2021	Health Management and Information Science	-This study aimed at designing a management model for the development of health tourism in Fars Province, Iran. -This study was performed by descriptive-correlation method which is a type of applied research in terms of quiddity and purpose. The sample consisted of 120 foreign tourists who traveled to Fars province to receive health services. Data analysis was performed with SPSS-20 and Smart-PLS software. -The purpose of the article is to identify the factors affecting the design and presentation of management models for the development of health tourism with a unified focus on various aspects related to this area. -The findings indicated that independent variables of the model explain health tourism management variations in this sample. With regards to the path coefficients between latent constructs of the model, three structural, behavioral, and environmental factors have a significant effect on health tourism management in this study.
8-	Azizallah Bolidehei, Mohammad Khammaria, Azizollah Arbabi Sarjou, Mostafa Peyvand	Factors Affecting Medical Tourism Destination Selection: A Mix Methods Study in a Developing Country.	2021	International Journal of Health Studies	-This study aimed to determine the status of health tourism in the province and explain factors affecting and challenges of health tourism. -A mixed method (quantitative and qualitative) study was carried out in the southeast of Iran, which has a border with Afghanistan and Pakistan countries. All patients who were referred to Sistan and Baluchistan province hospitals (six hospitals) between 2010 - 2018 were selected with the census method. In the qualitative phase, a semi-structured interview was done with 17 experts specialized in health tourism in 2019. All interviews were recorded and written daily. Finally, the data were analyzed by the content analysis method. -The results showed that four main axes affect the development of the medical tourism industry, including human resources, specialized services, facilities, infrastructure services, and security conditions.



**Introduction of research factors:**

In this section, based on the literature review and research background, 44 effective criteria on destination therapeutic tourism marketing were identified and extracted with an effect on the repetition and dissemination of positive messages in 6 dimensions, as shown in Table 2.

Table 2: Factors affecting the marketing of destination medical tourism with an impact on spreading positive messages

N	Dimensions	Components	23		Diversity in treatments and examinations
1-	<b>Causal Conditions</b>	High quality medical services	24		Challenges facing hospitals
2-		Government support	25		Competitive advantage in the destination
3-		Health care	N		<b>Dimensions</b>
4-		Support and assistance services	26	<b>Intervening Conditions</b>	Future destination investments
5-		Proportion of price with type of service	27		Contract with pharmaceutical companies
6-		Communication and information technology	28		Digitization
7-		good reputation	29		Recreational activities systems
8-		Compliance with ethics and behavior	30		Security and social stability
9-		destination culture	N	<b>Dimensions</b>	<b>Components</b>
10-		Modern medical equipment	31	<b>Action / Interaction</b>	Market research and analysis
11-		Specialist treatment staff	32		Attention to educational and research aspects
12-		Proper infrastructure	33		Promotion of tourist destination
13-		Visual appeal	34		Tourism marketing strategies
14-		Spiritual and religious aspects	35		Media and marketing campaigns
15-		Location of health institutions	36		Identifying the needs of the market and competitors
N	<b>Dimensions</b>	<b>Components</b>	37		Develop marketing plans
16-	<b>Phenomenon</b>	Social links	N	<b>Dimensions</b>	<b>Components</b>
17-		The decision of tourists	38	<b>Consequences</b>	Wide demand of patients
18-		Strengthening collaborations and partnerships	39		Achieving patient satisfaction

19		Organizational management	40		punctuality
20		Communication with patients	41		Gaining a distinctive tourism experience
N	Dimensions	Components	42		Increasing awareness of services
21	Context	Providing a positive atmosphere	43		Increasing the probability of patients returning
22		Creating human relationships	44		Attracting patients

**The results of the TOPSIS method of the components of causal conditions:**

**Formation of the decision matrix:**

The first step in the TOPSIS method is to form a decision matrix. The decision matrix in this section is a row matrix, a column whose rows are made up of 15 components of causal conditions and the columns are made up of 40 experts. low, 2 = low importance, 3 = medium importance, 4 = high importance, 5 = very high importance) which are given in Table 3.

Table 3: TOPSIS decision matrix

	person 1	person2	person3	....	person38	person39	person40
High quality medical services	5	5	4	....	4	4	5
Government support	5	5	4	....	4	4	5
Health care	5	3	4	....	4	4	5
Support and assistance services	5	4	4	....	4	4	5
Proportion of price with type of service	5	3	4	....	4	4	5
Communication and information technology	5	5	4	....	4	4	4
good reputation	5	5	4	....	4	5	5
Compliance with ethics and behavior	4	5	4	....	4	4	5
destination culture	4	4	3	....	5	3	4
Modern medical equipment	5	5	4	....	4	4	5
Specialist treatment staff	5	5	4	....	5	4	5
Proper infrastructure	5	5	4	....	4	4	4
Visual appeal	5	4	4	....	4	4	4
Spiritual and religious aspects	5	5	3	....	4	4	4
Location of health institutions	5	3	4	....	5	5	4

**Normalize the decision matrix:**

The decision matrix of Table 3 is normalized using the equation 3-3-1. In other words, for normalization, each square must be divided by the square root of the square of the squares of each column. For example, for the normalization of A<sub>11</sub>, which is the intersection of the criteria of "high quality medical services" and expert 1, it is as follows:

$$A_{11}^{Normal} = \frac{5}{\sqrt{5^2 + 5^2 + 5^2 + \dots + 5^2 + 5^2}} = 0.265$$

The normalized decision matrix is given in Table4.

Table4: Normal matrix of TOPSIS

	person1	person2	person3	....	person38	person39	person40
High quality medical services	0.265	0.289	0.266	....	0.245	0.252	0.279

Government support	0.265	0.289	0.266	....	0.245	0.252	0.279
Health care	0.265	0.173	0.266	....	0.245	0.252	0.279
Support and assistance services	0.265	0.231	0.266	....	0.245	0.252	0.279
Proportion of price with type of service	0.265	0.173	0.266	....	0.245	0.252	0.279
Communication and information technology	0.265	0.289	0.266	....	0.245	0.252	0.223
good reputation	0.265	0.289	0.266	....	0.245	0.316	0.279
Compliance with ethics and behavior	0.212	0.289	0.266	....	0.245	0.252	0.279
destination culture	0.212	0.231	0.200	....	0.306	0.189	0.223
Modern medical equipment	0.265	0.289	0.266	....	0.245	0.252	0.279
Specialist treatment staff	0.265	0.289	0.266	....	0.306	0.252	0.279
Proper infrastructure	0.265	0.289	0.266	....	0.245	0.252	0.223
Visual appeal	0.265	0.231	0.266	....	0.245	0.252	0.223
Spiritual and religious aspects	0.265	0.289	0.200	....	0.245	0.252	0.223
Location of health institutions	0.265	0.173	0.266	....	0.306	0.316	0.223

**Weighted normal matrix:**

In this step, the weighted normal matrix is obtained. In this section, the weight of the importance of the experts is considered equal, so the weight of each expert is equal to 0.025, which is multiplied by the normal matrix. The results are given in Table 5.

Table 5: TOPSIS weighted matrix

	person1	person2	person3	..	person38	person39	person40
High quality medical services	0.007	0.007	0.007	..	0.006	0.006	0.007
Government support	0.007	0.007	0.007	..	0.006	0.006	0.007
Health care	0.007	0.004	0.007	..	0.006	0.006	0.007
Support and assistance services	0.007	0.006	0.007	..	0.006	0.006	0.007
Proportion of price with type of service	0.007	0.004	0.007	..	0.006	0.006	0.007
Communication and information technology	0.007	0.007	0.007	..	0.006	0.006	0.006
good reputation	0.007	0.007	0.007	..	0.006	0.008	0.007
Compliance with ethics and behavior	0.005	0.007	0.007	..	0.006	0.006	0.007
destination culture	0.005	0.006	0.005	..	0.008	0.005	0.006
Modern medical equipment	0.007	0.007	0.007	..	0.006	0.006	0.007
Specialist treatment staff	0.007	0.007	0.007	..	0.008	0.006	0.007
Proper infrastructure	0.007	0.007	0.007	..	0.006	0.006	0.006
Visual appeal	0.007	0.006	0.007	..	0.006	0.006	0.006
Spiritual and religious aspects	0.007	0.007	0.005	..	0.006	0.006	0.006
Location of health institutions	0.007	0.004	0.007	..	0.008	0.008	0.006

**Determination of positive and negative ideals:**

In this step, positive and negative ideals are calculated. The positive ideal is equal to the largest area of each criterion column and the negative ideal is equal to the smallest area of each criterion column in the weighted matrix. Positive and negative ideals are given in Table 6.

Table 6: Topsis ideals

	person1	person2	person3	....	person38	person39	person40
Positive ideal	0.007	0.007	0.007	....	0.008	0.008	0.007
Negative ideal	0.005	0.004	0.005	....	0.006	0.005	0.006

**Calculation of the distance of the options from the positive and negative ideal:**

In this step, the distance of options from positive ideal (d+) and negative ideal (d-) is calculated through relations 2 and 3 (second and third column of Table 7). For example, for the first criterion, the calculations of D+ and D- are as follows:

$$D_{A1}^+ = \sqrt{(0.007 - 0.007)^2 + (0.007 - 0.007)^2 + (0.007 - 0.007)^2 \dots + (0.007 - 0.007)^2}$$

$$D_{A1}^- = \sqrt{(0.007 - 0.005)^2 + (0.007 - 0.005)^2 + (0.007 - 0.005)^2 \dots + (0.007 - 0.005)^2}$$

$$= 0.012$$

**Calculating the similarity index (CCI) and ranking options:**

Using equation 4-4, we calculate the similarity index of each option and rank the options based on that (third column of Table 7). For example, for the first criterion, the calculations are as follows:

$$cl_{A1} = \frac{0.012}{0.012 + 0.006} = 0.6531$$

According to Table 7, modern medical equipment has won the first rank. Hasan Shohrat has won the second rank and Nizam Kader treatment specialist has won the third rank.

Table 7: Ranking of causal condition components

Criterion	distance from positive ideal (d+)	Distance from ideal negative (d-)	final score (cl)	rank
High quality medical services	0.006	0.012	0.6531	4
Government support	0.009	0.012	0.5701	7
Health care	0.010	0.009	0.4899	10
Support and assistance services	0.010	0.009	0.4771	11
Proportion of price with type of service	0.008	0.011	0.5766	6
Communication and information technology	0.009	0.010	0.5324	9
good reputation	0.006	0.014	0.6851	2
Compliance with ethics and behavior	0.007	0.012	0.6254	5
destination culture	0.011	0.009	0.4513	14
Modern medical equipment	0.006	0.013	0.6860	1
Specialist treatment staff	0.007	0.013	0.6540	3
Proper infrastructure	0.008	0.011	0.5675	8
Visual appeal	0.010	0.009	0.4578	13
Spiritual and religious aspects	0.011	0.008	0.4102	15
Location of health institutions	0.010	0.009	0.4744	12



**The results of the TOPSIS method of the components of the main phenomenon:  
Formation of the decision matrix:**

The first step in the TOPSIS method is to form a decision matrix. The decision matrix in this section is a matrix of rows and columns, the rows of which are 5 components of the main phenomenon, and the columns are 40 experts. low, 2 = low importance, 3 = medium importance, 4 = high importance, 5 = very high importance) which are given in Table 8.

Table 8: TOPSIS decision matrix

	person1	person2	person3	...	person38	person39	person40
Social links	5	4	4	....	4	4	4
The decision of tourists	4	4	4	....	4	4	4
Strengthening collaborations and partnerships	4	5	4	....	5	4	4
Organizational management	4	4	3	....	4	4	4
Communication with patients	5	5	4	....	5	5	5

**Normalize the decision matrix:**

The decision matrix of Table 8 is normalized using the equation 3-3-1. In other words, for normalization, each row must be divided by the square root of the sum of squares of the rows of each column. The normalized decision matrix is given in Table 9.

Table 9: Normal matrix of TOPSIS

	person1	person2	person3	...	person38	person39	person40
Social links	0.505	0.404	0.468	...	0.404	0.424	0.424
The decision of tourists	0.404	0.404	0.468	...	0.404	0.424	0.424
Strengthening collaborations and partnerships	0.404	0.505	0.468	...	0.505	0.424	0.424
Organizational management	0.404	0.404	0.351	...	0.404	0.424	0.424
Communication with patients	0.505	0.505	0.468	...	0.505	0.530	0.530

**Weighted normal matrix:**

In this step, the weighted normal matrix is obtained. In this section, the weight of the importance of the experts is considered equal, so the weight of each expert is equal to 0.025, which is multiplied by the normal matrix. The results are given in Table 10.

Table 10: TOPSIS weighted matrix

	person1	person2	person3	...	person38	person39	person40
Social links	0.013	0.010	0.012	....	0.010	0.011	0.011
The decision of tourists	0.010	0.010	0.012	....	0.010	0.011	0.011

	person 1	person2	person3	....	person 38	person 39	person 40
Strengthening collaborations and partnerships	0.010	0.013	0.012	....	0.013	0.011	0.011
Organizational management	0.010	0.010	0.009	....	0.010	0.011	0.011
Communication with patients	0.013	0.013	0.012	....	0.013	0.013	0.013

**Determination of positive and negative ideals:**

In this step, positive and negative ideals are calculated. The positive ideal is equal to the largest area of each criterion column and the negative ideal is equal to the smallest area of each criterion column in the weighted matrix. Positive and negative ideals are given in Table 11.

Table 11: Topsis ideals

	person 1	person 2	person 3	....	person 38	person 39	person 40
Positive ideal	0.013	0.013	0.012	....	0.013	0.013	0.013
Negative ideal	0.010	0.010	0.009	....	0.010	0.011	0.011

**Calculation of the distance of the options from the positive and negative ideal:**

In this step, the distance of options from positive ideal (d+) and negative ideal (d-) is calculated through relations 2 and 3 (second and third column of Table 12).

**Calculation of similarity index (CCI) and ranking of options:**

Using equation 4-4, we calculate the similarity index of each option and rank the options based on that (third column of Table 12). Based on this, communication with patients has been ranked first. The system of strengthening cooperations and partnerships has won the second rank and social links have won the third rank.

Table 12: Ranking of the components of the main phenomenon

Criterion	distance from positive ideal (d+)	Distance from ideal negative (d-)	final score (cl)	rank
Social links	0.013	0.012	0.4767	3
The decision of tourists	0.015	0.009	0.3670	5
Strengthening collaborations and partnerships	0.012	0.013	0.5082	2
Organizational management	0.013	0.011	0.4588	4
Communication with patients	0.007	0.016	0.6906	1

**The results of the TOPSIS method of intervening components:**

**Formation of the decision matrix:**

The first step in the TOPSIS method is to form a decision matrix. The decision matrix in this section is a row matrix, a column whose rows are composed of 5 intervening components and the columns are composed of 40 experts. low, 2 = low importance, 3 = moderate importance, 4 = high importance, 5 = very high importance) which are given in Table 13.

Table 13: TOPSIS decision matrix

	person 1	person 2	person 3	....	person 38	person 39	person 40
Providing a positive atmosphere	5	3	4	....	4	4	5

Creating human relationships	5	3	4	....	4	5	4
Diversity in treatments and examinations	5	4	4	....	5	4	5
Challenges facing hospitals	5	3	3	....	5	4	4
Competitive advantage in the destination	5	4	4	....	4	4	4

**Normalize the decision matrix:**

The decision matrix of Table 13 is normalized using the equation 3-3-1. In other words, for normalization, each row must be divided by the square root of the sum of squares of the rows of each column. The normalized decision matrix is given in Table 14.

Table 14: TOPSIS normal matrix

	person 1	person 2	person 3	....	person 38	person 39	person 40
Providing a positive atmosphere	0.447	0.391	0.468	....	0.404	0.424	0.505
Creating human relationships	0.447	0.391	0.468	....	0.404	0.530	0.404
Diversity in treatments and examinations	0.447	0.521	0.468	....	0.505	0.424	0.505
Challenges facing hospitals	0.447	0.391	0.351	....	0.505	0.424	0.404
Competitive advantage in the destination	0.447	0.521	0.468	....	0.404	0.424	0.404

**Weighted normal matrix:**

In this step, the weighted normal matrix is obtained. In this section, the weight of the importance of the experts is considered equal, so the weight of each expert is equal to 0.025, which is multiplied by the normal matrix. The results are given in Table 15.

Table 15: TOPSIS weighted matrix

	person 1	person 2	person 3	...	person 38	person 39	person 40
Providing a positive atmosphere	0.011	0.010	0.012	...	0.010	0.011	0.013
Creating human relationships	0.011	0.010	0.012	...	0.010	0.013	0.010
Diversity in treatments and examinations	0.011	0.013	0.012	...	0.013	0.011	0.013
Challenges facing hospitals	0.011	0.010	0.009	...	0.013	0.011	0.010
Competitive advantage in the destination	0.011	0.013	0.012	...	0.010	0.011	0.010

**Determination of positive and negative ideals:**

In this step, positive and negative ideals are calculated. The positive ideal is equal to the largest area of each criterion column and the negative ideal is equal to the smallest area of each criterion column in the weighted matrix. Positive and negative ideals are given in Table 16.

Table 16: Topsis ideals

	person 1	person 2	person 3	....	person 38	person 39	person 40
Positive ideal	0.011	0.013	0.012	....	0.013	0.013	0.013

	person 1	person 2	person 3	....	person 38	person 39	person 40
Negative ideal	0.011	0.010	0.009	....	0.010	0.011	0.010

**Calculation of the distance of the options from the positive and negative ideal:**

In this step, the distance of options from positive ideal (d+) and negative ideal (d-) is calculated through relations 2 and 3 (second and third column of Table 17).

**Calculation of similarity index (CCI) and ranking of options:**

Using equation 4-4, we calculate the similarity index of each option and rank the options based on that (third column of Table 17). Based on this, diversity in treatments and examinations has won the first rank. Competitive advantage in the second place destination and providing a positive atmosphere have won the third place.

Table 17: Ranking of intervening components

Criterion	distance from positive ideal (d+)	Distance from ideal negative (d-)	final score (cl)	rank
Providing a positive atmosphere	0.016	0.013	0.4527	3
Creating human relationships	0.016	0.011	0.4149	5
Diversity in treatments and examinations	0.006	0.020	0.7747	1
Challenges facing hospitals	0.016	0.013	0.4393	4
Competitive advantage in the destination	0.015	0.015	0.4975	2

**The results of TOPSIS method of background components:**

**Formation of the decision matrix:**

The first step in the TOPSIS method is to form a decision matrix. The decision matrix in this section is a row matrix, a column whose rows are made up of 5 background components and the columns are made up of 40 experts. low, 2 = low importance, 3 = moderate importance, 4 = high importance, 5 = very high importance) which are given in Table 18.

Table 18: TOPSIS decision matrix

	person 1	person 2	person 3	..	person 38	person 39	person 40
Future destination investments	5	4	4	..	5	5	4
Contract with pharmaceutical companies	4	4	3	..	5	4	4
Digitization	5	5	4	..	4	4	4
Recreational activities systems	3	4	4	..	5	5	5
Security and social stability	5	4	4	..	5	4	5

**Normalize the decision matrix:**

The decision matrix of Table 18 is normalized using the equation 1-3-3. In other words, for normalization, each row must be divided by the root of the sum of the squares of the rows of

each column. The normalized decision matrix is given in Table 19.

Table 19: TOPSIS normal matrix

	person 1	person 2	person 3	...	person 38	person 39	person 40
Future destination investments	0.500	0.424	0.468	...	0.464	0.505	0.404
Contract with pharmaceutical companies	0.400	0.424	0.351	...	0.464	0.404	0.404
Digitization	0.500	0.530	0.468	...	0.371	0.404	0.404
Recreational activities systems	0.300	0.424	0.468	...	0.464	0.505	0.505
Security and social stability	0.500	0.424	0.468	...	0.464	0.404	0.505

**Weighted normal matrix:**

In this step, the weighted normal matrix is obtained. In this section, the weight of the importance of the experts is considered equal, so the weight of each expert is equal to 0.025, which is multiplied by the normal matrix. The results are given in Table 20.

Table 20: TOPSIS weighted matrix

	person 1	person 2	person 3	...	person 38	person 39	person 40
Future destination investments	0.013	0.011	0.012	...	0.012	0.013	0.010
Contract with pharmaceutical companies	0.010	0.011	0.009	...	0.012	0.010	0.010
Digitization	0.013	0.013	0.012	...	0.009	0.010	0.010
Recreational activities systems	0.008	0.011	0.012	...	0.012	0.013	0.013
Security and social stability	0.013	0.011	0.012	...	0.012	0.010	0.013

**Determination of positive and negative ideals:**

In this step, positive and negative ideals are calculated. The positive ideal is equal to the largest area of each criterion column and the negative ideal is equal to the smallest area of each criterion column in the weighted matrix. Positive and negative ideals are given in Table 21.

Table 21: Topsis ideals

	person 1	person 2	person 3	...	person 38	person 39	person 40
Positive ideal	0.013	0.013	0.012	...	0.012	0.013	0.013
Negative ideal	0.008	0.011	0.009	...	0.009	0.010	0.010

**Calculation of the distance of the options from the positive and negative ideal:**

In this step, the distance of the options from the positive ideal (d+) and the negative ideal (d-) is calculated through relations 2 and 3 (second and third columns of Table 22).

**Calculation of similarity index (CCI) and ranking of options:**

Using equation 4-4, we calculate the similarity index of each option and rank the options based on that (third column of Table 22). Based on this, security and social stability has won the first rank. Digitization ranked second and future investments ranked third.

Table 22: Ranking of contextual components

Criterion	distance from positive ideal (d+)	Distance from ideal negative (d-)	final score (cl)	rank
Future destination investments	0.014	0.022	0.6183	3
Contract with pharmaceutical companies	0.021	0.013	0.3691	5
Digitization	0.012	0.023	0.6488	2
Recreational activities systems	0.015	0.017	0.5342	4
Security and social stability	0.009	0.024	0.7231	1

**The results of the TOPSIS method of strategy components:**

**Formation of the decision matrix:**

The first step in the TOPSIS method is to form a decision matrix. The decision matrix in this section is a row matrix, a column whose rows are made up of 7 components of strategies and the columns are made up of 40 experts., 2 = low importance, 3 = medium importance, 4 = high importance, 5 = very high importance) which is given in Table 23.

Table 23: TOPSIS decision matrix

	person 1	person 2	person 3	....	person 38	person 39	person 40
Market research and analysis	4	3	4	....	4	5	5
Attention to educational and research aspects	4	5	4	....	5	4	5
Promotion of tourist destination	5	5	4	....	4	4	4
Tourism marketing strategies	5	4	4	....	4	4	4
Media and marketing campaigns	4	5	4	....	5	4	5
Identifying the needs of the market and competitors	5	4	4	....	5	4	5
Develop marketing plans	5	4	4	....	5	4	4

**Normalize the decision matrix:**

The decision matrix of Table 23 is normalized using the equation 3-3-1. In other words, for normalization, each row must be divided by the square root of the sum of squares of the rows of each column. The normalized decision matrix is given in Table 24.

Table 24: TOPSIS normal matrix

	person 1	person 2	person 3	....	person 38	person 39	person 40
Market research and analysis	0.329	0.261	0.378	....	0.329	0.455	0.411
Attention to educational and research aspects	0.329	0.435	0.378	....	0.411	0.364	0.411
Promotion of tourist destination	0.411	0.435	0.378	....	0.329	0.364	0.329
Tourism marketing strategies	0.411	0.348	0.378	....	0.329	0.364	0.329

Media and marketing campaigns	0.329	0.435	0.378	....	0.411	0.364	0.411
Identifying the needs of the market and competitors	0.411	0.348	0.378	....	0.411	0.364	0.411
Develop marketing plans	0.411	0.348	0.378	....	0.411	0.364	0.329

**Weighted normal matrix:**

In this step, the weighted normal matrix is obtained. In this section, the weight of the importance of the experts is considered equal, so the weight of each expert is equal to 0.025, which is multiplied by the normal matrix. The results are given in Table 25.

Table 25: TOPSIS weighted matrix

	person 1	person 2	person 3	....	person 38	person 39	person 40
Market research and analysis	0.008	0.007	0.009	....	0.008	0.011	0.010
Attention to educational and research aspects	0.008	0.011	0.009	....	0.010	0.009	0.010
Promotion of tourist destination	0.010	0.011	0.009	....	0.008	0.009	0.008
Tourism marketing strategies	0.010	0.009	0.009	....	0.008	0.009	0.008
Media and marketing campaigns	0.008	0.011	0.009	....	0.010	0.009	0.010
Identifying the needs of the market and competitors	0.010	0.009	0.009	....	0.010	0.009	0.010
Develop marketing plans	0.010	0.009	0.009	....	0.010	0.009	0.008

**Determination of positive and negative ideals:**

In this step, positive and negative ideals are calculated. The positive ideal is equal to the largest area of each criterion column and the negative ideal is equal to the smallest area of each criterion column in the weighted matrix. Positive and negative ideals are given in Table 26.

Table 26: Topsis ideals

	person 1	person 2	person 3	....	person 38	person 39	person 40
Positive ideal	0.010	0.011	0.009	....	0.010	0.011	0.010
Negative ideal	0.008	0.007	0.009	....	0.008	0.009	0.008

**Calculation of the distance of the options from the positive and negative ideal:**

In this step, the distance of options from positive ideal (d+) and negative ideal (d-) is calculated through relations 2 and 3 (second and third column of Table 27).

**Calculation of similarity index (CCI) and ranking of options:**

Using equation 4-4, we calculate the similarity index of each option and rank the options based on that (third column of Table 27). Based on this, the advertisement of the tourist destination has won the first rank. Attention to educational and research aspects have been ranked second and media and marketing campaigns have been ranked third.

Table 27: Ranking of strategy components

Criterion	distance from positive ideal (d+)	Distance from ideal negative (d-)	final score (cl)	rank
Market research and analysis	0.012	0.008	0.3995	7
Attention to educational and research aspects	0.010	0.011	0.5439	2

Promotion of tourist destination	0.009	0.013	0.5791	1
Tourism marketing strategies	0.011	0.010	0.4743	5
Media and marketing campaigns	0.010	0.012	0.5313	3
Identifying the needs of the market and competitors	0.010	0.010	0.5081	4
Develop marketing plans	0.012	0.008	0.4039	6

**The results of the TOPSIS method, the components of the results:**

**Formation of the decision matrix:**

The first step in the TOPSIS method is to form a decision matrix. The decision matrix in this section is a row matrix, a column whose rows are made up of 7 components of the results and the columns are made up of 40 experts, each cell evaluating each criterion from the point of view of each expert based on a range of 1 to 5 (1 = very little importance, 2= low importance, 3= medium importance, 4= high importance, 5= very high importance) which are given in table 28.

Table 28: TOPSIS decision matrix

	person 1	person 2	person 3	....	person 38	person 39	person 40
Wide demand of patients	5	3	4	....	5	5	4
Achieving patient satisfaction	5	3	4	....	5	4	4
punctuality	5	3	4	....	4	4	5
Gaining a distinctive tourism experience	4	4	4	....	5	4	4
Increasing awareness of services	5	4	4	....	5	4	4
Increasing the probability of patients returning	5	3	3	....	5	4	4
Attracting patients	4	4	4	....	5	4	4

**Normalize the decision matrix:**

The decision matrix of Table 28 is normalized using the equation 3-3-1. In other words, for normalization, each row must be divided by the root of the sum of squares of the rows of each column. The normalized decision matrix is given in Table 29.

Table 29: TOPSIS normal matrix

	person 1	person 2	person 3	....	person 38	person 39	person 40
Wide demand of patients	0.399	0.327	0.390	....	0.388	0.455	0.364
Achieving patient satisfaction	0.399	0.327	0.390	....	0.388	0.364	0.364
punctuality	0.399	0.327	0.390	....	0.310	0.364	0.455
Gaining a distinctive tourism experience	0.319	0.436	0.390	....	0.388	0.364	0.364
Increasing awareness of services	0.399	0.436	0.390	....	0.388	0.364	0.364
Increasing the probability of patients returning	0.399	0.327	0.293	....	0.388	0.364	0.364
Attracting patients	0.319	0.436	0.390	....	0.388	0.364	0.364

**Weighted normal matrix:**

In this step, the weighted normal matrix is obtained. In this section, the weight of the importance of the experts is considered equal, so the weight of each expert is equal to 0.025, which is multiplied by the normal matrix. The results are given in Table 30.



Table 30: TOPSIS weighted matrix

	person 1	person 2	person 3	...	person 38	person 39	person 40
wide demand of patients	0.010	0.008	0.010	...	0.010	0.011	0.009
achieving patient satisfaction	0.010	0.008	0.010	...	0.010	0.009	0.009
punctuality	0.010	0.008	0.010	...	0.008	0.009	0.011
gaining a distinctive tourism experience	0.008	0.011	0.010	...	0.010	0.009	0.009
increasing awareness of services	0.010	0.011	0.010	...	0.010	0.009	0.009
increasing the probability of patients returning	0.010	0.008	0.007	...	0.010	0.009	0.009
attracting patients	0.008	0.011	0.010	...	0.010	0.009	0.009

**Determination of positive and negative ideals:**

In this step, positive and negative ideals are calculated. The positive ideal is equal to the largest area of each criterion column and the negative ideal is equal to the smallest area of each criterion column in the weighted matrix. Positive and negative ideals are given in Table 31.

Table 31: Topsis ideals

	person 1	person 2	person 3	....	person 38	person 39	person 40
Positive ideal	0.010	0.011	0.010	....	0.010	0.011	0.011
Negative ideal	0.008	0.008	0.007	....	0.008	0.009	0.009

**Calculation of the distance of the options from the positive and negative ideal:**

In this step, the distance of the options from the positive ideal (d+) and the negative ideal (d-) is calculated through relations 2 and 3 (second and third columns of Table 32).

**Calculation of similarity index (CCI) and ranking of options:**

Using equation 4-4, we calculate the similarity index of each option and rank the options based on that (third column of Table 32). Based on this, the widespread demand of patients has won the first rank. Achieving patient satisfaction ranked second and increasing awareness of services ranked third.

Table 32: Ranking of outcome components

Criterion	distance from positive ideal (d+)	Distance from ideal negative (d-)	final score (cl)	rank
wide demand of patients	0.008	0.015	0.6575	1
achieving patient satisfaction	0.011	0.012	0.5389	2
punctuality	0.014	0.009	0.4045	7
gaining a distinctive tourism experience	0.013	0.012	0.4798	4
increasing awareness of services	0.011	0.011	0.4871	3
increasing the probability of patients returning	0.012	0.009	0.4167	6

attracting patients	0.012	0.009	0.4330	5
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**The results of the fuzzy TOPSIS method of all components:**

It is done in a similar way to TOPSIS steps for 44 components, the final ranking is given in sorted form in Table 33. According to this, among 44 components, modern medical equipment has won the first rank. Diversity in treatments and examinations has won the second rank and good reputation has won the third rank.

Table 33: Ranking of all components

Criterion	distance from positive ideal (d+)	Distance from ideal negative (d-)	final score (cl)	rank
Modern medical equipment	0.003	0.010	0.7429	1
Diversity in treatments and examinations	0.003	0.009	0.7362	2
good reputation	0.004	0.010	0.7334	3
Wide demand of patients	0.004	0.010	0.7224	4
High quality medical services	0.004	0.009	0.7200	5
Specialist treatment staff	0.004	0.009	0.7108	6
Compliance with ethics and behavior	0.004	0.009	0.6866	7
Promotion of tourist destination	0.004	0.009	0.6834	8
Identifying the needs of the market and competitors	0.004	0.009	0.6703	9
Achieving patient satisfaction	0.005	0.009	0.6428	10
Communication with patients	0.005	0.008	0.6426	11
Proper infrastructure	0.005	0.009	0.6426	12
Security and social stability	0.005	0.008	0.6414	13
Attention to educational and research aspects	0.005	0.008	0.6393	14
Government support	0.005	0.009	0.6389	15
Increasing awareness of services	0.005	0.008	0.6316	16
Media and marketing campaigns	0.005	0.008	0.6299	17
Tourism marketing strategies	0.005	0.008	0.6282	18
Proportion of price with type of service	0.005	0.008	0.6254	19
Gaining a distinctive tourism experience	0.005	0.009	0.6190	20
Digitization	0.005	0.008	0.6075	21
Communication and information technology	0.005	0.008	0.5990	22
Develop marketing plans	0.005	0.008	0.5950	23
Future destination investments	0.005	0.007	0.5783	24
punctuality	0.006	0.008	0.5766	25
Support and assistance services	0.006	0.008	0.5737	26
Visual appeal	0.006	0.008	0.5681	27
Market research and analysis	0.006	0.007	0.5679	28
Attracting patients	0.005	0.007	0.5654	29
Increasing the probability of patients returning	0.006	0.007	0.5624	30
Health care	0.006	0.007	0.5555	31
destination culture	0.006	0.008	0.5456	32

Criterion	distance from positive ideal (d+)	Distance from ideal negative (d-)	final score (cl)	rank
Strengthening collaborations and partnerships	0.006	0.007	0.5380	33
Social links	0.006	0.007	0.5241	34
Competitive advantage in the destination	0.006	0.007	0.5228	35
Creating human relationships	0.006	0.007	0.5211	36
Location of health institutions	0.006	0.007	0.5162	37
Providing a positive atmosphere	0.006	0.007	0.5161	38
Organizational management	0.006	0.006	0.5110	39
Recreational activities systems	0.007	0.007	0.5071	40
Challenges facing hospitals	0.006	0.006	0.5052	41
Spiritual and religious aspects	0.007	0.006	0.4815	42
The decision of tourists	0.007	0.005	0.4260	43
Contract with pharmaceutical companies	0.008	0.005	0.4049	44

### Conclusion:

This research was conducted to design a medical tourism marketing model to spread positive messages in Iraqi hospitals with the approach of recommendation systems. The research results are expressed in two parts, qualitative and quantitative. In the qualitative part, the results showed that the design of the medical tourism marketing model includes six dimensions including causal conditions (15 categories). Main phenomenon: (5 categories); background characteristics (5 categories); Intervening conditions (5 categories); strategies (7 categories); Consequences (7 categories). Three categories, in order of importance in medical tourism marketing, took advanced positions, which are (modern equipment), (variety of drugs and inspection) and (good reputation).

Modern medical equipment plays an important role in the development and provision of health services in medical tourism. Modern medical equipment in terms of importance in the Topsis algorithm analysis has been ranked first with a distance from the positive ideal (d+) (0.003) and with a distance from the negative ideal (d-) (0.010) and with the final score (cl) (0.7429) because modern medical equipment plays a role in improving the quality of health care provided to patients in tourist medical centers. For example, modern technologies in diagnosis and treatment, such as robotic surgery, laser therapy, and magnetic resonance imaging can be used to improve treatment outcomes and reduce complications. Modern medical equipment also increases the length of stay of patients in medical tourism destinations. For example, if medical facilities are equipped with the latest medical technology, treatment can be provided more efficiently and quickly, reducing the need for lengthy and expensive procedures, thereby allowing patients to stay longer at the destination. Modern medical equipment also facilitates access to advanced treatments that may not be available in the patient's home country. These treatments can be in areas such as organ transplantation, cell therapy, radiotherapy, etc., and give patients opportunities to receive advanced and effective medical care. Finally, modern medical equipment helps build patients' trust in medical facilities in medical tourism destinations. When patients are confident in the quality and technology used in a medical facility, they feel more comfortable and confident in receiving appropriate healthcare.

The diversity factor in treatments and examinations in terms of importance in medical tourism marketing in the Topsis algorithm analysis ranked second with a distance from the positive

ideal (d+) (0.003) and with a distance from the negative ideal (d-) (0.009) and with a final score (cl) (0.7362) because diversity in treatments and examinations is considered very important to meet the needs and preferences of potential patients. People have different health and treatment needs, so offering a wide range of services can meet different needs. Some patients may prefer natural and alternative therapies, while others require surgery or conventional treatments. By offering a wide range of treatments and examinations, a medical destination can attract a diverse group of patients and meet their needs. Diversity in treatments and examinations can also help a medical destination compare to its competitors. When a place offers a unique and diverse set of services, it has the marketing power to set it apart from the rest. This variety of services may be a competitive advantage that makes patients choose a treatment destination over other locations that offer fewer options. It also helps to attract new target groups by providing a wide range of treatments and examinations. The medical destination can target and attract new target groups. It may have the potential to attract patients from different countries and cultures seeking specific treatments or specialized diagnostic tests. Treatment may target specific age groups such as the elderly, young athletes, or pregnant mothers. Diversity in treatments and examinations can help expand the customer base and target new categories. Finally, it helps promote the reputation of the medical destination. When a medical destination has a good reputation for offering a wide range of treatments and examinations, this increases its credibility. Reputation as a comprehensive and specialized treatment destination. Patients are confident in its ability to provide the necessary care and treatment thanks to its variety of services.

The category of good reputation plays an important role in the development and provision of health services in medical tourism. In terms of importance in the analysis of the Topsis algorithm, it ranks third with a distance from the positive ideal (d+) (0.004) with a distance of from the negative ideal (d-) (0.010) and with the final score (cl) (0.7334) because a good reputation helps to build trust between consumers and service providers in the field of medical tourism. When a treatment destination has an excellent reputation, patients have confidence in the healthcare delivery and the quality of services provided. They may have a proven track record of providing effective treatments and providing comfort and personal care. Also, patients often rely on recommendations and reviews when choosing a treatment destination. A good reputation helps create a positive impression of the destination and increases the chances of attracting more potential patients. When a destination has a good reputation, new patients are assured of receiving high-quality care. A good reputation also plays an important role in achieving a competitive advantage. If a medical destination has an excellent reputation, it may be more attractive to potential patients and attract new customers. A medical destination may be more recommended and recognized in the market because of its good reputation. Finally, when a medical destination has a good reputation, patients tend to share their positive experiences with others. They may spread positive information through social media, forums, and medical societies, leading to increased awareness and interest in the treatment destination and customer growth.

This study can serve as a road map for policymakers in the field of medical tourism as well as a starting source for researchers in this academic field. In addition, this may help policymakers identify a path to achieve the goals set in the strategic action plan for medical tourism in Iraq. This study is an effective reference for politicians who adopt medical tourism policy in Iraq. This study was conducted in Iraq. However, its results will seriously contribute to the field of medical tourism in two practical and theoretical dimensions. The results showed that many factors influence the choice of medical tourist destination, especially modern medical equipment, diversity in treatments and examinations, good reputation, wide demand of patients, and other factors.

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