



Developing Strategies and Designing its Map for Advancement of Medical Tourism Industry: Case Study of Shiraz

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ABSTRACT

Background: The medical tourism industry is a rapidly growing global market that has capabilities such as earning income and improving the quality of services. The purpose of this study was to utilize the capabilities of Shiraz city by developing a strategic plan.

Methods: This mixed-methods (qualitative and quantitative) research was conducted in 2019. The study population included all entities and key stakeholders involved in the medical tourism industry in Shiraz. A strategic plan was developed through focus groups and conventional content analysis and then the Decision Making Trial and Evaluation Laboratory (DEMATEL) technique was utilized to map it.

Results: The strategic plan of the medical tourism industry of Shiraz city was explained in the form of 63 strategies, 5 goals, and 18 objectives. Also, the medical tourism industry strategic map was illustrated.

Conclusion: Achieving common agreement of all policy-making and implementing institutions, empowering managers on various medical tourism industry dimensions, and developing operational plans required by each organization in charge of the medical tourism industry can be effective in better use of the capabilities of Shiraz in attracting medical tourists.

Key words: Strategic analysis, Medical tourism, DEMATEL technique, Strategic map, Shiraz

Citation

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Introduction

As a socioeconomic phenomenon, tourism has undergone a huge development over the past decade, and it has been introduced as one of the sectors benefiting the fastest economic growth in the world. Today, the volume of tourism business is equal to or even greater than exports of crude oil, food products, or automobiles industry (1). Following international income growth as well as job creation and infrastructure development in parallel with the expansion of the tourism industry, working in other specialized areas of tourism such as cultural tourism, adventure tourism, as well as health tourism has been of much interest in various countries (2). Accordingly, health tourism has been defined as a type of travel to maintain, improve, and ensure physical and mental health status, taking more than 24 hours and less than a year (3). In this regard, Marc Lautier (2014) has stated that trade in healthcare services has escalated significantly from 1997 to 2010 so that in 2010, 52.5 % of world trade has been associated with healthcare services amounted to \$11,766 million (4).

In general, there are three types of health tourism, including curative tourism, wellness tourism, and medical tourism (3). Thus, the bond between the healthcare industry and tourism has created one of the largest service industries called medical tourism in numerous countries. In this respect, medical tourism has been defined as traveling by people from their hometown and country to others to obtain medical care and treatment (5).

Among factors contributing to rising trends in medical tourism are high costs of healthcare services in industrialized countries, increased ease of international travels, favorable exchange rate in the world economy, rapid advances in medical technologies, internet access, inadequate insurance coverage for some healthcare services in countries of origin. Furthermore, confidentiality and observance of privacy in some healthcare services such as cosmetic and plastic surgery, infertility treatments, as well as more cost-effective international transport and

government support have increased the favor towards medical tourism (6–10).

The Medical Tourism Industry (MTI) is thus an ever-increasing global market providing substantial benefits to countries that have made the best use of their potentials and capabilities in this regard (11). This industry is so expanded that it had been earlier estimated to reach \$45.5-72 billion in 2017 (12). In a report released by Visa Business and Economic Insights analysis of Oxford Economics data, it has also been predicted that since 2015 and 10 years later, MTI will grow each year by 25 % so that about 3-4 % of the world's population will travel abroad to obtain healthcare services. Besides, it is expected that the market for medical travel can reach an astronomical income of \$3 trillion by 2025 (13).

In Asia, countries like Singapore, India, Thailand, and Malaysia have also been forerunners in attracting medical tourists (14–16). Moreover, income from medical tourism has led these countries to significantly publicize their healthcare services to all people around the world. According to the statistics released by the World Health Organization (WHO), about \$50 billion are being spent on the treatment of patients in the region in both European and American countries, and absorption of a percentage of this amount can have a significant impact on tourism economy in Asian countries (17).

As an Asian country located in the Middle East with advantages in medical tourism such as low healthcare costs, high-quality healthcare services, competent doctors, and numerous natural attractions, Iran intends to become the hub of meeting healthcare and medical needs in this region (18). According to Iran 2025 Outlook Document, this country is targeting 20 million foreign tourists in 2025 and thus earning \$15 billion (17). In this regard, the city of Shiraz, as the only metropolitan area in southern Iran endowed with its cultural and historical attractions, temperate climate, and a large number of public and private hospitals equipped with diagnostic and medical facilities as well as

qualified physicians, is known as the medical hub of southern Iran and also a potential destination for medical tourists (8, 18). However, evidence suggests that this megacity has not made the most of its full potentials and capabilities (18). The absence of strategic planning is possibly among the reasons for the inadequate use of such potentials and capabilities in this city. Therefore, given many benefits of the medical tourism industry, the present study was of utmost importance to formulate strategies for MTI development in the city of Shiraz to make it known as the owner of the largest tourism industry as soon as possible, especially in the domain of medical tourism in the Middle East. Moreover, the research design employed in this study and its results can be applied to other cities with similar conditions in Iran or other countries in the region.

Materials and Methods

With a mixed-method (qualitative and quantitative) research design using qualitative and quantitative approaches, this study was conducted in Shiraz, Iran, in 2019. The statistical population included all entities and key stakeholders involved in the MTI.

The main method adopted in this study to develop the MTI strategic plan in the city of Shiraz was the model presented by Fred David, (2009) including the following steps: 1-clarification of vision and mission statement, 2-evaluation of internal factors and their matrix formation, 3-evaluation of external factors and their matrix formation, 4-formation of strengths, weaknesses, opportunities, and threats (SWOT) matrix and selection of right strategy, 5-determination of strategic goals, and 6-formulation of appropriate strategies (19). Regarding the results of a previous study (18), the strategic status of the MTI for Shiraz had been analyzed. This industry was found to be located in the aggressive strategic area and strength and opportunity (SO) zone (Figure 1). The goals and objectives of the strategic plan for a period of 1 to 3 years in Shiraz were explained in the present

study using expert opinions. Next, strategies to develop this industry were delineated in subsequent meetings. Eventually, the strategic plan of the MTI for the city of Shiraz was illustrated. The details of the research steps were as follows.

Step one: Formulating strategic goals and objectives of MTI for the city of Shiraz

In this step, to develop goals, objectives, and strategies for the MTI in the city of Shiraz, a total of five two-hour meetings were held with a panel of experts and key stakeholders of the industry, including the Vice-Chancellor's Office for Pilgrims and Tourists of Fars Province (1 person), specialists of health services management (2 people), representatives from Shiraz University of Medical Sciences (2 people), representatives from Shiraz University (2 people), Cultural Heritage, Handicrafts, and Tourism Organization of Shiraz (1 person), Immigration and Passport Police Head Office (1 person), Shiraz City Council (1 person), the office of Ministry of Foreign Affairs in the city of Shiraz (1 person), Medical Council of the Islamic Republic of Iran in Shiraz (1 person), Shiraz Chamber of Guilds (1 person), and Shiraz International Airport (1 person). After each meeting, the data were transcribed, read several times, and sorted. In the following meetings, they were reviewed and ultimately approved by the panel of experts. In the beginning, the panel members formulated 5 strategic goals and 18 objectives according to the type of strategic area identified for the Shiraz MTI, in addition to considering the mission, vision, and values of this industry.

Step Two: Developing strategies for the MTI in the city of Shiraz

In the follow-up meetings, two or more strategies were outlined for each objective set in the previous step by the research team and panel of experts. The analysis of the data was done as conventional content analysis. After each meeting, the data were transcribed, read several times, and sorted; and in later meetings, they were reviewed and ultimately approved by the panel of experts. Finally, after repeated modifications and



revisions of the strategies discussed in all meetings, 63 strategies were formulated to attain the goals.

Step Three: Illustrating the strategic map of the MTI for the city of Shiraz

After setting goals and objectives as well as the strategies of the MTI in the city of Shiraz, the researchers illustrated the strategic map of this industry through the Decision-Making Trial and Evaluation Laboratory (DEMATEL) technique introduced by Fonetla and Gabus in 1971. This technique is based on decision-making methods with paired comparisons benefiting from expert judgments in terms of extraction of factors and their systematic structuring via principles of graph theory. It also presents a hierarchy of factors in the system along with mutual cause-and-effect relationships so that numerical scores can determine the effect size of the mentioned relationships. This technique is used to identify and assess mutual relationships between criteria and mapping network relations. Since an oriented graph can better represent relations between elements of a system, the DEMATEL technique is based on graphs that can divide factors into two groups of cause and effect and correspondingly illustrate their interface as an intelligible structural model (20).

The steps to implement the DEMATEL technique in this study were as follows:

1. Direct relation matrix formation (M): After identifying strategic objectives, they were inserted in a direct relation matrix. In this matrix, the objectives were listed in rows and columns, respectively. The intensity of objective relations

was then determined in pair, from row to column, using a 0-4 Likert-type scale.

2. Normalized direct relation matrix: At this point, all matrix entries were multiplied by the reverse sum of the largest column value.

3. Computation of full relation matrix: This matrix was calculated using the following formula to represent the identity matrix.

$$T = N \times (1 - N)^{-1}$$

4. Creation of causal diagram: The sum of elements of each row (D) for each factor indicated its influence on other system elements. The sum of elements of each column (R) for each factor represented the degree to which that factor had been affected by other system factors.

5. Calculation of indirect relation matrix: Matrix $(I-N)^{-1}$ and matrix N^2 were analyzed to calculate this matrix. Then, matrix N^2 was multiplied by the matrix $(I-N)^{-1}$ and an indirect effects matrix was obtained.

6. Calculation of relation threshold: Average values of matrix T were calculated to estimate the relation threshold value. Once the threshold value was determined, values of matrix T smaller than the threshold value were removed.

Finally, effective and affected objectives for each strategic objective in this industry were identified and analyzed.

It should be noted that ethical considerations such as confidentiality of experts' names, integrity, and objectivity as well as reporting of results anonymously, were observed in this study.

This study was approved by the ethics committee of Shiraz University of Medical Sciences, Shiraz, Iran (IR.SUMS.REC.1394.S7572).

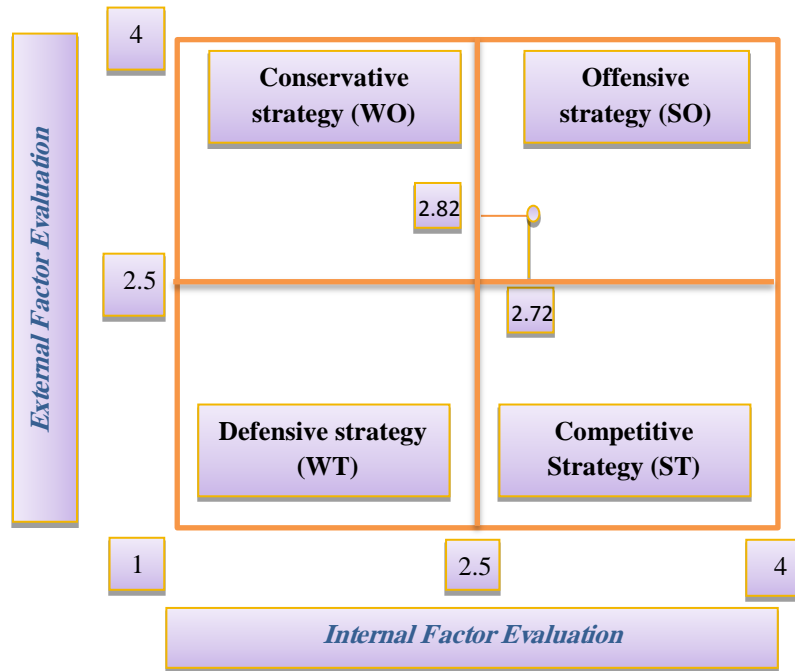


Figure 1. Shiraz Medical tourism strategies (18)

Results

Results of the panel of experts and then conventional content analysis of the data were explained in terms of 63 strategies embedded in 5 goals and 18 objectives (Table 1).

MTI strategic map of the city of Shiraz was illustrated in Figure 2. The objectives whose scores were lower than the threshold value have not been included. Moreover, different colors were used to indicate relationships between the objectives better. Accordingly, yellow, red, and bold black show poor, moderate, and strong links between the objectives.

To simplify the analysis of the factors in the strategic map of the MTI for Shiraz, the effect of these factors and the way they had been affected are presented in Table 2. Based on this, O12 (Achieving common agreement of all policy-making and implementing institutions on the selection of a specific institution as the main trustee of the field of medical tourism by the end

of 2020), O1 (Empowering managers on various MTI dimensions and capabilities by 30 % by the end of 2020) , and O15 (Developing operational plans required by each organization in charge of the MTI following agreed to the comprehensive strategic plan by the end of the year 2020) could have the most significant impact on other objectives and O8 (Increasing medical tourist attraction by 30 % from countries of origin by the end of 2021), O9 (Attracting medical tourists from at least two Central Asian states which are not currently as countries of origin by the end of 2022), O6 (Improving the quality of healthcare and tourism services by 50 % by the end of 2021), and O10 (Obtaining IPD certificates to increase range and diversity of healthcare services to medical tourists in at least three new areas (i.e., dentistry, infertility treatment, and neurosurgery by the end of 2022) had been highly affected by other objectives (Table 2).



Table 1. Goals, Objectives, and Strategies formulated to promote MTI in Shiraz

Goals (G)	Objectives (O)	Strategies (S)
<i>G₁: Improving human resource management in the medical tourism industry</i>	O ₁₋₁ : Empowering managers on various MTI dimensions and capabilities by 30 % by the end of 2020	S ₁₋₁₋₁ : Holding training workshops for managers in healthcare and tourism centers S ₂₋₁₋₁ : Organizing annual and periodic seminars and conferences in the MTI areas S ₃₋₁₋₁ : Paying scientific visits to successful and distinctive medical tourism centers in other countries S ₄₋₁₋₁ : Offering grants to some managers in healthcare and tourism centers to attend international seminars, conferences, or even training courses on the medical tourism industry S ₅₋₁₋₁ : Holding training courses in English or Arabic (as the official languages of countries of the region) for managers in healthcare and tourism centers dealing with medical tourists
	O ₂₋₁ : Empowering staff on various dimensions and capabilities of the MTI by 30 % by the end of 2020	S ₁₋₂₋₁ : Holding training workshops on the MTI for staff S ₂₋₂₋₁ : Holding workshops on communicative skills based on medical tourists' culture S ₃₋₁₋₁ : Holding training courses in English or Arabic (as the official languages of countries of the region) for staff dealing with medical tourists
	O ₁₋₂ : Increasing various information-giving and publicity mechanisms in countries of origin of medical tourists by 80 % by the end of 2021	S ₁₋₁₋₂ : Updating websites of healthcare and tourism centers and introducing their services in different languages S ₂₋₁₋₂ : Preparing pamphlets, brochures, and billboards and their distribution in countries of origin S ₃₋₁₋₂ : Making video clips about the introduction of healthcare and tourism services in the city of Shiraz S ₄₋₁₋₂ : Conducting surveys on medical tourists about how to get acquainted with given services in the city of Shiraz and then highlighting communication and information-giving paths
	O ₂₋₂ : Branding one or two distinctive and unique healthcare services in the city of Shiraz via focusing on the quality of healthcare services by the end of 2021	S ₁₋₂₋₂ : Attracting competent, experienced, and renowned doctors in Iran S ₂₋₂₋₂ : Standardizing spaces and equipment to provide healthcare services to medical tourists
<i>G₂: Improving and promoting internal processes in terms of attracting medical tourists</i>	O ₃₋₂ : Obligating formulation and declaration of healthcare tariffs for medical tourists in 50 % of International Patient Department (IPD)-licensed hospitals by the end of 2020	S ₁₋₃₋₂ : Displaying healthcare tariffs on hospital websites S ₂₋₃₋₂ : Providing an invoice to patients in their native language or English S ₃₋₃₋₂ : Installing tariffs in English and the native language of most foreign patients in the accounting departments
	O ₄₋₂ : Improving the quality of healthcare and tourism services by 50 % by the end of 2021	S ₁₋₄₋₂ : Providing clinical guidelines on current healthcare services offered to medical tourists S ₂₋₄₋₂ : Conducting clinical auditing of current healthcare services provided to medical tourists and evaluating their effectiveness S ₃₋₄₋₂ : Responding to medical tourists' complaints, finding their causes, and providing solutions to them S ₄₋₄₋₂ : Evaluating medical errors affecting medical tourists, finding their causes, and providing solutions to them S ₅₋₄₋₂ : Conducting surveys on medical tourists' levels of satisfaction with healthcare services and dealing with causes of their non-satisfaction



Goals (G)	Objectives (O)	Strategies (S)
<i>G₃: Increasing attraction of medical tourists</i>	O ₅₋₂ : Obtaining valid certificates for activity in the MTI at least by 20 % of healthcare centers by the end of 2022	<p>S₆₋₄₋₂: Checking hotels and accommodations to meet the standards of four- and five-star centers</p> <p>S₇₋₄₋₂: Improving the quality of food in hospitals and accommodations as well as providing a customized menu tailored to medical tourists' tastes in each country of origin</p> <p>S₈₋₄₋₂: Fitting quality of tourism services according to medical tourists' preferences</p> <p>S₁₋₅₋₂: Providing infrastructure and prerequisites for being included in the international accreditation process such as Joint Commission International (JCI), Accreditation Canada International (ACI), etc.</p> <p>S₂₋₅₋₂: Introducing reputable and internationally accredited consulting companies involved in obtaining international accreditation to healthcare centers and reaching an agreement with them to expedite their international accreditation</p> <p>S₃₋₅₋₂: Providing infrastructure and prerequisites for the establishment of IPD standards in healthcare centers</p> <p>S₁₋₁₋₃: Licensing doctors in the city of Shiraz in countries of origin</p> <p>S₂₋₁₋₃: Establishing patient-finding bases in clinics or hospitals in countries of origin</p> <p>S₃₋₁₋₃: Giving information through preparation and distribution of brochures, pamphlets, and advertising video clips about medical tourism potentials and capabilities in the city of Shiraz</p> <p>S₄₋₁₋₃: Providing suitable conditions for cooperation with domestic and foreign insurance companies to cover healthcare services of patients in countries of origin</p> <p>S₅₋₁₋₃: Facilitating and paving the way to sign contracts between healthcare centers in the city of Shiraz and active companies involved in the medical tourism industry</p> <p>S₆₋₁₋₃: Providing appropriate grounds for offering the right discounts to medical tourists in countries of origin</p> <p>S₇₋₁₋₃: Facilitating the issuance of medical treatment visas</p>
	O ₁₋₃ : Increasing medical tourist attraction by 30 % from countries of origin by the end of 2021	<p>S₁₋₂₋₃: Licensing doctors in the city of Shiraz in at least two Central Asian states which are not currently countries of origin of medical tourism</p> <p>S₂₋₂₋₃: Establishing patient-finding bases in at least two Central Asian states which are not currently countries of origin of medical tourism</p> <p>S₃₋₂₋₃: Giving information through preparation and distribution of brochures, pamphlets, and advertising video clips about medical tourism potentials and capabilities in the city of Shiraz in at least two Central Asian states which are not currently countries of origin of medical tourism</p> <p>S₄₋₂₋₃: Providing suitable conditions for cooperation with domestic and foreign insurance companies to cover healthcare services to foreign patients in at least two Central Asian states which are not currently countries of origin of medical tourism</p> <p>S₅₋₂₋₃: Facilitating and assisting in signing contracts between active companies in the MTI in at least two Central Asian states which are not currently countries of origin of medical tourism and healthcare centers in the city of Shiraz</p> <p>S₆₋₂₋₃: Providing appropriate grounds for offering the right discounts to medical tourists in at least two Central Asian</p>
	O ₂₋₃ : Attracting medical tourists from at least two Central Asian states which are not currently as countries of origin by the end of 2022	



Goals (G)	Objectives (O)	Strategies (S)
<p><i>G₄: Improving trusteeship and inter-sectorial coordination (public and private organizations) in medical tourism management across Shiraz Province</i></p>	<p>O₃₋₃: Obtaining IPD certificates to increase the range and diversity of healthcare services to medical tourists in at least three new areas (i.e., dentistry, infertility treatment, and neurosurgery) by the end of 2022</p>	<p>states which are not currently countries of origin of medical tourism S₇₋₂₋₃: Facilitating the issuance of medical treatment visas for at least two Central Asian states which are not currently countries of origin of medical tourism S₁₋₃₋₃: Giving information and introducing dentistry, infertility treatment, and neurosurgical services in the city of Shiraz using mass media and communication tools S₂₋₃₋₃: Equipping departments in current healthcare centers with dental, infertility treatment, and neurosurgical services to medical tourists</p>
	<p>O₄₋₃: Increasing range and diversity of tourism services provided to medical tourists at least in three new areas by the end of 2022</p>	<p>S₁₋₄₋₃: Providing suitable conditions for cooperation between tourism and travel services organizations in terms of provision of tourism services (i.e., historical, religious, natural, ethnic, health, adventure, etc.) along with healthcare services to patients S₂₋₄₋₃: Adding a set of tourism and cultural services to medical packages offered to medical tourists S₃₋₄₋₃: Introducing three new areas in health tourism and their integration into medical tourism</p>
	<p>O₁₋₄: Achieving common agreement of all policy-making and implementing institutions on the selection of a specific institution as the main trustee of the field of medical tourism by the end of 2020</p>	<p>S₁₋₁₋₄: Identification of key governmental and non-governmental institutions related to the field of medical tourism and formatting a committee consisting of representatives from all relevant institutions S₂₋₁₋₄: Establishment of an organization called Medical Tourism Management in the Deputy of Pilgrims and Tourism of Fars Province S₃₋₁₋₄: Introducing an organization as the main trustee of medical tourism and cooperation of other organizations with this organization in the field of medical tourism S₄₋₁₋₄: Developing clear and transparent laws, regulations, and rules in the fields related to medical tourism with the participation and agreement of the institutions related to this field.</p>
	<p>O₂₋₄: Creating a comprehensive medical tourist information registration system by the end of 2020 O₃₋₄: Improving the activity of at least 60 % of intermediaries in attracting medical tourists by the end of 2020 O₄₋₄: Developing operational plans required by each organization in charge of the MTI following agreed to the comprehensive strategic plan by the end of the year 2020</p>	<p>S₁₋₂₋₄: Preparing a Request For Proposal (RFP) to create a comprehensive medical tourism information registration system for contracting with private companies S₂₋₂₋₄: Designing or purchasing appropriate software for data recording S₁₋₃₋₄: Encouraging private companies active in the MTI to hire intermediaries S₂₋₃₋₄: Obligating foreign patient admission to healthcare centers only through medical treatment visas S₁₋₄₋₄: Obligating key stakeholders to provide operational planning S₂₋₄₋₄: Giving information and raising awareness of beneficiary entities on how to create operational planning</p>



Goals (G)	Objectives (O)	Strategies (S)
<i>G₅: Promoting the role of the Provincial Government's Office in the medical tourism industry</i>	O ₁₋₅ : Improving and increasing transport fleet by 30 % to all countries of origin by the end of 2021	S ₁₋₁₋₅ : Improving the quality of airport services S ₂₋₁₋₅ : Enhancing air and land transport in countries of origin S ₃₋₁₋₅ : Creating or expanding new lines of transport to countries of origin S ₄₋₁₋₅ : Promoting inter-city transport fleet for medical tourists
	O ₂₋₅ : Increasing licensing to private companies for activity in the MTI by 70 % by the end of 2021	S ₁₋₂₋₅ : Facilitating licensing for the establishment of medical tourism companies S ₂₋₂₋₅ : Providing facilities to private companies willing to operate in the medical tourism industry S ₃₋₂₋₅ : Facilitating the licensing process for private companies demanding the establishment of patient hotels
	O ₃₋₅ : Increasing admissions of international students from current countries of origin by 50 % by the end of 2021	S ₁₋₃₋₅ : Signing memorandum of understanding with different countries of origin S ₂₋₃₋₅ : Creating joint educational programs (cooperation between different universities in the world and countries of origin and Shiraz University of Medical Sciences)

Table 2. Effective and Affected MTI objectives in Shiraz

objectives	Affected objectives	Total	Effective objectives	Total
O1	O2, O3, O5, O6, O7, O8, O9, O10, O11, O13, O14, O15, O16, O17, O18,	15	O8, O12, O15	3
O2	O4, O5, O6, O7, O8, O9, O10	7	O1, O8, O12, O15	4
O3	O8, O9,	2	O1, O5, O8, O9, O10, O11, O12, O13, O15, O17	10
O4	O6, O8, O9, O10,	4	O2, O5, O6, O7, O8, O9, O10, O12, O13, O15, O17	11
O5	O3, O4, O6, O8, O9, O10, O11, O14	8	O1, O2, O8, O10, O13, O15	6
O6	O4, O7, O8, O9, O10, O11	6	O1, O2, O4, O5, O7, O8, O9, O10, O11, O12, O13, O15, O17	13
O7	O4, O6, O8, O9, O10, O11	6	O1, O2, O6, O8, O12, O13, O15	7
O8	O1, O2, O3, O4, O5, O6, O7, O8, O9, O10, O11, O14	12	O1, O2, O3, O4, O5, O6, O7, O8, O9, O10, O11, O12, O13, O14, O15, O16, O17, O18	18
O9	O3, O4, O6, O8, O9, O10, O11, O14	8	O1, O2, O3, O4, O5, O6, O7, O8, O9, O10, O11, O12, O13, O14, O15, O16, O17, O18	18
O10	O3, O4, O5, O6, O8, O9, O11	7	O1, O2, O4, O5, O6, O7, O8, O9, O11, O12, O13, O15, O17	13
O11	O3, O6, O8, O9, O10	5	O1, O5, O6, O7, O8, O9, O10, O12, O13, O15, O17	11
O12	O1, O2, O3, O4, O6, O7, O8, O9, O10, O11, O13, O14, O15, O16, O17, O18,	16	-	0
O13	O3, O4, O5, O6, O7, O8, O9, O10, O11, O14, O15,	11	O1, O12, O15	3
O14	O8, O9	2	O1, O5, O8, O9, O12, O13, O15, O17	8
O15	O1, O2, O3, O4, O5, O6, O7, O8, O9, O10, O11, O13, O14, O16, O17,	15	O1, O12, O13	3
O16	O8, O9	2	O1, O12, O15	3
O17	O3, O4, O6, O8, O9, O10, O11, O14	8	O1, O12, O15	3
O18	O8, O9	2	O1, O12	2

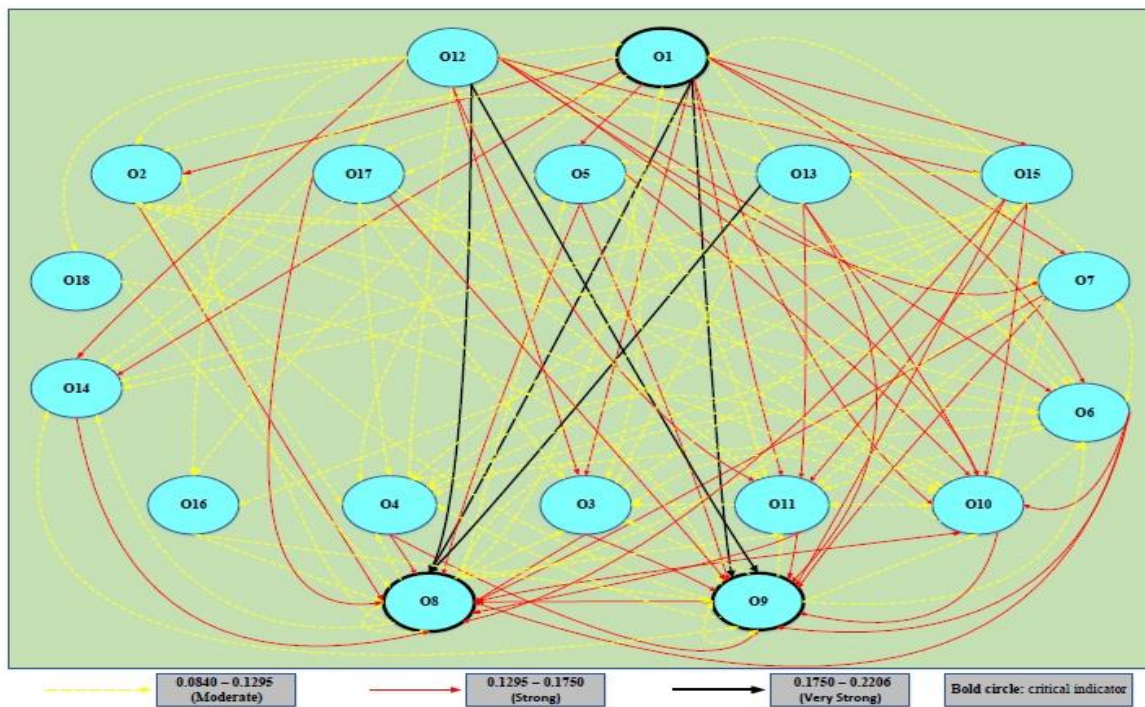


Figure 2. MTI strategic map of Shiraz

Discussion

In the era of globalization, people are paying for appropriate healthcare services abroad leading to the development of medical tourism to a great extent (21). With an aim to attracting these medical tourists due to the high quality of their services and reasonable costs, investors in developing countries have established five-star patient hotels with the presence of most doctors licensed in developed countries (22). In Iran, for the first time, medical tourism was considered by the Ministry of Health and Medical Education in 2003. However, at that time the employment of medical graduates in the tourism boom was taken into account. In 2004, after the merge of two organizations, i.e., Cultural Heritage Organization and Tourism Organization, the Policymaking Council of Health Tourism was born in the form of a new organization but no formal and acceptable mechanisms have been so far recognized in this area (11). Hence, the existence of comprehensive strategic planning and the presence of an entity responsible for policy-making for this industry seems essential.

The findings of the present study revealed that among the mentioned 18 objectives, O12, O1, and O15 had the most significant impact on other objectives. This meant that if authorities could focus on these objectives, they could more easily achieve other ones, leading to meeting other objectives and ultimately attracting medical tourists. This industry is managed by several decision-making organizations that have encountered challenges on supervision over medical tourism domains. Consequently, these multiple organizations can cause problems such as a lack of effective coordination between stakeholders of the MTI in Shiraz city.

According to the vision of Iran's tourism industry, the fulfillment of cultural, geographical, and historical requirements of the country and the development of the tourism industry concerning cultural and historical conditions are among the ideal objectives. As a result, paying attention to tourism is one of the most basic pillars of the country's development. However, no tasks have been so far delineated for medical tourism and this industry has not been a priority. The main difference between successful cities in other



countries and those in Iran, specifically Shiraz, may be due to the main trustee of the medical tourism industry, which is administered by ministries (such as tourism or health) in most countries. While in Iran, this industry is under the supervision of the Cultural Heritage, Handicrafts, and Tourism Organization (23).

In their study, Izadi et al. (24) also found that poor coordination between medical tourism organizations was the most important challenge to health tourism in Iran. Moreover, Delgoshai (25), Jabbari (3), and Rutherford (26) concluded that inter-sectoral coordination in the MTI was of utmost importance. Additionally, all sectors involved in this industry including the health sector, tourism sector, private sector, Ministry of Foreign Affairs, Immigration and Passport Police Head Office, insurance companies, and the like needed to act coordinately. In various studies, lack of success in medical tourism had been also attributed to the lack of a specific trustee and effective inter-sectoral coordination (27). Mahdavi et al. (28) in their study showed that one of the main factors in the development of the MTI is the relationship between different sectors including the Ministry of Health and Medical Education, Cultural Heritage, Handicrafts, and Tourism Organization, Ministry of Foreign Affairs, Chamber of Commerce, private institutions transmission, airports, hotels, hospitals, etc.

However, the MTI in Shiraz is facing challenges in terms of competent managers who are aware of medical tourism concepts and markets. Since there is no academic discipline in this area in Iran, it was suggested that managers receive necessary training before taking up positions or at least receive training on the job to work better in this industry, to learn about techniques for attracting medical tourists, to take basic measures in this regard, and to make the most of medical tourism potential and capabilities in the city of Shiraz. According to Maraqa (29), training through workshops and the exchange of experiences of successful individuals and organizations could be effective in achieving the desired goals and objectives. In this regard, Danial et al. (30) in his research entitled "Training

for Medical Tourism in Iran," demonstrated that training the staff (physicians and nurses) on how to deal with medical tourists, how to attract them, and apply the teachings were among factors influencing choices of patients for traveling to the country to obtain medical treatment. Given that training and improvement are inevitable for all organizations, holding training courses can benefit all stakeholders (31). Presently, concerning accelerated changes and increasing competition, organizations are correspondingly making efforts to achieve results and survive. Therefore, suitable instructional design is of utmost importance for these two purposes because training improves organizational performance and excellence. For this reason, a suitable instructional design is needed to fulfill this critical issue. In other words, instructional design can play an essential role as a scientific territory presenting training situations to achieve learning in a way that it has been considered as the heart of any training effort (32).

Ayeleke (33), in his research investigating systematic training of managers, also reiterated that training of managers using multiple techniques appropriate to the subject in question could enhance their performance and competence, leading to appropriate decision-making, and finally result in organizational effectiveness and progress.

Another important and influential goal affecting the MTI in the city of Shiraz was "Developing operational plans required by each organization in charge of MTI following the agreed comprehensive strategic plan by the end of the year 2020" to operationalize the strategic plan and to specify annual plans in each company, department, or organization to achieve their strategic goals. Perhaps, one of the reasons for the lack of a strategic plan as well as an operational one for the MTI in Iran, and consequently in the city of Shiraz, was inadequate government support and lack of information among managers. Although a strategic and operational plan can lead to constant efforts for booming this industry, Iran is unfortunately deprived of such a plan and cannot make the best use of its potentials and capabilities.



One of the managerial challenges to the MTI in Shiraz is the lack of a comprehensive, complete, and targeted plan and the absence of continuous and systematic operational plans along with sporadic activities in this area. Therefore, no strategic plans had been designed in this respect, or the existing ones were limited with no complete consideration of the capabilities of the MTI in Shiraz. In the study by Abouhashem Abadi(34), it had been suggested that formulating a comprehensive and coordinated plan could develop the medical tourism industry. In this regard, Fani Khiavi (35) added that due to high potentials and capabilities in Ardabil Province in the domain of health and medical tourism, comprehensive planning was needed for the province to have a proper place in terms of the MTI in Iran. In the study by Izadi et al. (24), inappropriate planning had been also considered as the most important health and medical tourism challenge in Iran.

In the present study, the strategic map of the MTI was drawn via the DEMATEL technique as a multiple-criteria analysis tool used to determine mutual cause-and-effect relationships between different criteria. This technique identified important factors affecting other ones and also draws a strategic map by creating a logical picture of the relationships (36). Using this technique in the present study, objectives that had the greatest impact on others and those that needed to be invested in more by the officials depending on the limited resources at their disposal to achieve their desired result sooner and at a lower cost have been identified. Given the lack of a special trustee for the MTI in Shiraz as well as the absence of a well-formulated plan in this area up to now, the present strategic plan and map could show the authorities the right way to achieve goals and objectives. Therefore all the responsible organizations could move in one direction and not waste the resources.

Conclusion

Illustrating the strategic map of the MTI for the city of Shiraz could help identify relationships

between strategic goals and objectives and shed light on the ones that had affected other goals and objectives. Due to resource constraints, there was a need to make the best use of such resources to achieve more effective goals and objectives, pave the grounds for the fulfillment of other ones, attract maximum medical tourists, and create higher chances of employment and more income.

Some limitations of this study were dispersion of expert panel members, multiple responsibilities, and high working levels of each one, which made it difficult and slow to coordinate and bring the panel members together. These limitations were largely overcome with repeated follow-up by the researchers along with suitable interactions with the Department of Medical Tourism and the President of Shiraz University of Medical Sciences.

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Conflict of interests

There was no conflict of interests.

Authors' contributions

Rahimi Zarchi MK, Fazelzadeh O, Hatam N, Jabbari AR and Shafaghat T designed research; Rahimi Zarchi MK and Shafaghat T conducted research; All authors analyzed data; and Rahimi Zarchi MK and Shafaghat T wrote manuscript. All authors read and approved the final manuscript.

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