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## ORIGINAL RESEARCH PAPER

### Ranking the Factors Influencing the Development of Health Tourism in Iranian Cities Using the Fuzzy Analytic Network Process

Poyan Razazan<sup>1</sup>, Haleh Hosseinpour<sup>2\*</sup>, Arash Vahid<sup>3</sup>

*1 Department of Urban Planning, Ki.C., Islamic Azad University, Kish, Iran*

*2 \*Department of Urban Planning, Pardis Branch, Islamic Azad University, Pardis, Iran*

*3 Department of Urban Planning, WT.C., Islamic Azad University, Tehran, Iran*

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#### ABSTRACT

Health tourism, as an emerging and strategic domain of the tourism industry, possesses significant potential for economic development, job creation, and the enhancement of urban branding. This study aims to identify and prioritize the factors influencing the development of health tourism in Iran by employing the Fuzzy Analytic Network Process FANP. The statistical population consists of operators, entrepreneurs, experts, planners, and practitioners in the field of health tourism; data were collected through questionnaires and in-depth interviews. The analysis reveals that the development of health tourism is a multidimensional process in which institutional management and policymaking play a central and guiding role. Economic, infrastructural, and technological support factors act as complementary components that, through their interactions, ensure the industry's sustainability and competitiveness. The findings emphasize the necessity of adopting a systemic and data-driven approach, strengthening economic and urban infrastructures, enhancing human resource training, and utilizing advanced technologies to achieve sustainable health tourism development. Beyond managerial and policy implications, the results provide a foundation for comparative studies and future research in the field of multi-criteria decision-making.

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\*Corresponding Author:

Email: [Halehhosseinpour@iau.ir](mailto:Halehhosseinpour@iau.ir)

Phone: 009876281010

ORCID: <https://orcid.org/0009-0000-7873-3835>

## INTRODUCTION

In recent decades, tourism has emerged as one of the largest and most dynamic industries worldwide, playing a prominent role in the economic, social, and cultural development of countries. One of the strategic and emerging branches of this industry is health tourism, which combines two key domains: tourism and healthcare services (Ren & Ma, 2021). This form of tourism is oriented toward receiving medical, therapeutic, rehabilitative, or cosmetic services in a setting different from individuals' permanent residence, and has become one of the most important tools for generating revenue, creating employment, and enhancing the international competitive position of countries. According to international reports, health tourism generates billions of dollars annually for countries such as India, Thailand, Malaysia, and Turkey, and plays a decisive role in attracting foreign investment, developing urban infrastructure, and improving the quality of public services (Wojewnik et al., 2019). Therefore, a scientific and systematic examination of the factors influencing the development of this industry is an undeniable necessity for achieving sustainable economic growth.

In Iran, despite significant potential in terms of specialized human resources, cost-effective medical care, well-equipped hospitals and healthcare centers, as well as diverse historical, cultural, and natural attractions, there exists a favorable environment for the development of health tourism. Large and historical cities in the country, with advanced medical facilities, prominent physicians, reputable medical universities, and adequate accommodation options, serve as key health tourism destinations (Najari et al., 2021). However, the lack of comprehensive planning, weak institutional coordination, insufficient international marketing, and poor integration among sectors related to healthcare, transportation, accommodation, and tourism have prevented Iran from achieving its rightful position in the global health tourism market. Consequently, identifying the key factors influ-

encing the development of this industry from economic and managerial perspectives is crucial for charting a pathway for future growth.

Development. This type of tourism not only generates employment and foreign exchange earnings, but also strengthens the economic foundations of cities by fostering linkages among different sectors such as transportation, hospitality, handicrafts, financial services, and information technology (Nouhaila et al., 2024). Moreover, the development of this sector facilitates the improvement of healthcare infrastructure and urban public services, and, through the enhancement of international standards in health services, contributes to improving citizens' quality of life (Kirdar & Sezer 2016). In addition, health tourism serves as an effective tool for cultural diplomacy and the expansion of international interactions, as attracting foreign patients promotes scientific, cultural, and technological exchanges between countries (Büyükožkan et al., 2021). From this perspective, the development of this industry can be an effective step toward achieving sustainable development goals and enhancing the economic and social standing of Iranian cities.

Despite Iran's considerable potential in health tourism, numerous structural and managerial challenges have hindered the full utilization of these capacities. Some countries, by employing multi-criteria decision-making (MCDM) models and network analysis, have been able to identify and prioritize the key factors influencing health tourism development, thereby enabling more precise policymaking aimed at economic growth and competitive advantage. Consequently, the application of advanced decision-making models, such as the Fuzzy Analytic Network Process (FANP), provides an efficient approach for evaluating and ranking the factors that drive the development of health tourism in Iranian cities. The Fuzzy Analytic Network Process (FANP), by integrating the features of multi-criteria decision-making (MCDM) and fuzzy logic, enables the analysis of complex and reciprocal relationships among influential factors. In the present

study, this model is employed to identify and rank the factors affecting health tourism development in Iranian cities, with a focus on Tehran and Shiraz. This approach allows researchers to examine both the direct and indirect effects of each factor on health tourism development, taking into account the interactions among criteria. Considering the multifaceted nature of this industry, which encompasses economic, social, infrastructural, cultural, managerial, and policy dimensions, FANP serves as a suitable tool for the networked and dynamic analysis of complex relationships among these factors (Guru et al., 2023). The application of this model provides a comprehensive view of the relative importance of each component in the development process and supports high-level decision-making at urban and national levels. Therefore, the present study utilizes the Fuzzy Analytic Network Process to identify, analyze, and prioritize the key determinants influencing the development of the health tourism industry in Iranian cities.

## **MATERIALS AND METHODS**

### *Urban Economic Development*

Urban economic development refers to a set of processes and structural changes that lead to improvements in the standard of living, increased income and productivity, creation of employment opportunities, and enhancement of economic infrastructure within a city. This concept goes beyond mere economic growth and encompasses qualitative changes in the economic structure, diversification of economic activities, enhancement of human and institutional capacities, and improvements in social equity and access to services. Urban economic development aims to utilize local resources in a manner that increases public welfare while ensuring the economic, social, and environmental sustainability of the city (Couch, 2017). A precise understanding of urban economic development requires attention to multiple factors, including the role of local governments, labor market interactions, investment

in technology and education, and the improvement of transportation and communication infrastructure. Furthermore, economic development should occur alongside the enhancement of citizens' quality of life, reduction of poverty and inequality, and environmental preservation. Therefore, urban economic development is a multifaceted process that necessitates comprehensive planning, community participation, and intelligent policymaking to sustainably and equitably strengthen the economic capacities of cities (Changizi et al., 2020).

### *Urban Development and Tourism*

Urban development and tourism are closely interrelated, and each can have significant impacts on the other. Tourism can serve as a driver for urban development, as it increases the demand for improved infrastructure such as hotels, restaurants, shopping centers, transportation systems, and green spaces. This demand stimulates urban investment and enhances the quality of services and infrastructure, benefiting both tourists and local residents. Consequently, tourism development can lead to economic prosperity and increased employment opportunities in urban areas.

Conversely, inadequate or poorly planned urban development can have adverse effects on tourism. Overpopulation, heavy traffic, air and environmental pollution, reduced open spaces, and the degradation of natural and cultural attractions may discourage tourists. Therefore, for sustainable tourism development, urban planning should aim to preserve the environment, local culture, and identity, ensuring both the quality of life for residents and the sustainability of tourism attractions (Jakulin, 2017).

### *Tourism and Its Economic Impacts*

Tourism is a multisectoral phenomenon that inherently requires inter-sectoral collaboration, as numerous stakeholders have varying interests in the tourism planning process. Only through information sharing and joint decision-making

among all stakeholders can tourism develop with minimal negative impacts (Madani, 2023). Tourism serves as a significant source of revenue for many countries and regions. The presence of tourists increases the sales of local services and products, thereby boosting businesses such as hotels, restaurants, retail shops, and tour operators. These revenues can support the development of local infrastructure, including roads, airports, and service centers, while also increasing employment opportunities in related sectors. Moreover, tourism can contribute to national income growth and poverty reduction in tourist regions. However, excessive dependence on tourism may render a region's economy vulnerable to seasonal fluctuations and global conditions. Additionally, the generated income may be unequally distributed, benefiting only a small portion of the population (Figueiredo et al., 2024).

#### *Health and Medical Tourism*

Health tourism occurs when individuals travel to another country for medical treatment. This sector has experienced rapid growth since the COVID-19 pandemic, and the global health tourism market is projected to expand by 15–25% annually over the next decade. Health tourism is often associated with individuals from less-developed countries with weaker healthcare systems, who travel to more advanced countries to receive high-quality medical care. Patients may also choose destinations that specialize in the type of treatment they require (Erkanli et al., 2024). Health tourism is considered one of the ten key sectors of the broader health economy, encompassing industries that aim to empower individuals to incorporate healthy behaviors, activities, and lifestyle habits into their daily lives. In contrast, medical tourism is primarily reactive, involving individuals suffering from illness who are motivated to travel to receive high-quality treatment at lower costs. Nevertheless, the above discussion indicates that health tourism functions as a subset within the broader umbrella of health tourism, which also includes medical

tourism (GWI, 2018).

#### *Significant Economic Impacts of Health Tourism*

As a profitable and strategic segment of the tourism industry, health tourism exerts extensive economic impacts on host countries and cities. By attracting foreign patients and providing medical, accommodation, food, and transportation services, this sector represents a significant source of revenue and foreign exchange earnings. The generated income is not limited to healthcare centers alone; other sectors such as hotels, restaurants, retail stores, and ancillary services also benefit. Furthermore, the development of health tourism creates direct and indirect employment opportunities for doctors, nurses, technicians, service staff, and stakeholders in related industries. Increased employment and household income contribute to poverty reduction and economic empowerment of regions with healthcare capacities, ultimately enhancing public welfare (Ariakyan et al., 2022).

#### *Literature Review*

Azar and Saeidi (2023) examined the feasibility of health tourism capacities in Maragheh city, with an emphasis on sustainable urban development. The key components, including social factors, economic diversification, environmental sustainability, and quality of life enhancement, were identified as the most influential factors in promoting medical tourism. Conversely, the least influential factors in medical tourism included terminal facilities, erosion of local culture, vibrancy, and cultural cohesion (Azar & Saeidi, 2023).

Teymouri and Ghanezhadeh (2020) investigated the determinants of brand equity of healthcare services in Tabriz city and its impact on health tourists' loyalty. The study showed that satisfaction had the greatest effect, followed by perceived value and then perceived destination quality, in determining the likelihood of tourists' return, particularly in the health tourism sector (Teymouri & Ghanezhadeh, 2020). Mohammadi

and Khaledi (2019) analyzed the factors affecting foreign health tourists' satisfaction, with a case study of tourists from the Kurdistan Region of Iraq. The findings revealed that weak transportation infrastructure, inadequate accommodation and recreational services, substandard medical care and hospital facilities, poor information dissemination, insufficient training, and the inefficient performance of governmental agencies were negative factors reducing tourist satisfaction. In contrast, the lower cost of medical treatment in Iran compared to other countries was identified as the most significant positive factor (Mohammadi & Khaledi, 2019). Figueiredo et al. (2024) conducted a study titled "Perspectives on Sustainable Development in Health Tourism: A Systematic Literature Review." They identified five thematic areas in sustainable health tourism development: (1) sustainable tourism stakeholders, (2) impact of COVID-19, (3) health tourism, (4) challenges and opportunities, and (5) sustainability values (Figueiredo et al., 2024). Nilashi et al. (2019) conducted a study titled "Factors Affecting the Adoption of Medical Tourism in Malaysia: DEMATEL-TOPSIS Fuzzy Approach." The study findings were: (1) from managers' perspective, technical and human factors are more important than organizational and environmental factors in decision-making for adopting medical hotels in Malaysia, (2) the human factor is significantly influenced by technological, organizational, and environmental factors (net receiver), and medical technology and efficient information systems are more important for technological readiness, (3) infrastructure and financial performance are considered more important by tourism and health managers for medical tourism adoption, (4) government investment and policies have the greatest influence on the environmental factor in this sector (Nilashi et al., 2019).

#### *Methodology*

The present study adopts an applied, descriptive-analytical approach, aiming to identify, analyze, and prioritize the factors affecting health

tourism development in Iranian cities using the Fuzzy Analytic Network Process (FANP) model. The statistical population consists of operators, entrepreneurs, specialists, planners, and practitioners active in the health tourism sector, including university professors, physicians, business owners, and experts from relevant ministries such as the Ministry of Cultural Heritage, Tourism and Handicrafts and the Ministry of Health, Treatment, and Medical Education. Data collection was conducted using two instruments: a specialized questionnaire and in-depth interviews. A total of 50 questionnaires were distributed among health tourism experts, and 10 in-depth interviews were conducted with specialists, entrepreneurs, urban managers, and planners to ensure comprehensive and reliable data for analysis. Sampling was performed using a probabilistic, multi-stage method to accurately represent different groups within the study population. In the data analysis phase, responses from questionnaires and interviews were first analyzed using SPSS to perform statistical tests (e.g., Spearman and Pearson correlations) to identify relationships among variables and key indicators affecting health tourism development. Subsequently, the Fuzzy Analytic Network Process (FANP) was employed to prioritize and determine the final weights of criteria. This model, which combines fuzzy logic and the Analytic Network Process (ANP), enables the examination of mutual and bidirectional relationships among criteria under uncertainty. In this approach, criteria and sub-criteria were first identified and structured into a network model, followed by fuzzy pairwise comparisons to calculate the relative weight of each factor. The data were entered into Super Decision software for the final network analysis, and the priority ranking of factors affecting health tourism development was extracted. Ultimately, the results provide a scientific basis for developing practical strategies to enhance the position of health tourism in the selected cities of Tehran and Shiraz.

## DISCUSSION AND FINDINGS

To rank and prioritize the main and sub-factors, the Fuzzy Analytic Network Process (FANP) was employed. Prior to conducting this analysis, to

facilitate the use of Super Decision software and to perform pairwise comparisons of the factors, the variables were coded as shown in Tab. 1.

Table 1: Coding of Factors in ANP Software

Code	Sub-Factor	Code	Main Factor
V11	Quality and Credibility of Healthcare Services	v1	Intra-urban and Infrastructure Factors
V12	Accessibility and Welfare Infrastructure		
V13	Urban Safety and Security		
V21	Coordination and Governance	v2	Managerial, Institutional, and Policy Factors
V22	Government Role and Support		
V23	Private Sector Role and Investment		
V31	Technology and Innovation	v3	Supporting and Enabling Factors
V32	Education and Human Resources		
V33	Marketing and Branding		
V41	Revenue Generation and Foreign Exchange Earnings	v4	Economic Factors and Development Outcomes
V42	Employment Creation and Industry Development		
V43	Integration with Other Capacities (Competitive Advantage)		

Step 1 – Constructing the Research Network Diagram: In this step, the problem is decomposed into levels of criteria, and if applicable, sub-criteria and alternatives, and the relationships among them are determined. A critical point in this stage is the existence of interrelationships between the criteria. These relationships can be identified through several methods, such as consulting experts to determine the interconnections among criteria. The network diagram of this study was constructed using Super Decision software and is presented in Fig. 1.

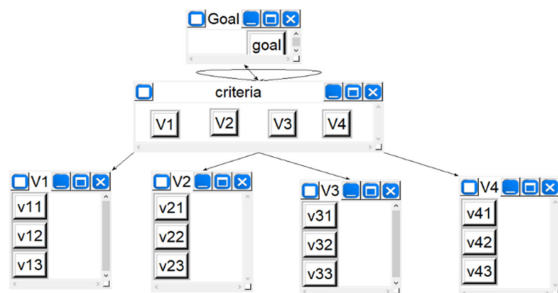


Figure 1: Research Network Diagram

Step 2 – Constructing Pairwise Comparison Matrices: In this step, the elements at each level are compared pairwise with respect to their related elements at the upper level, and pairwise comparison matrices are constructed. Additionally, pairwise comparisons of the internal relationships must also be conducted. These pairwise comparisons are performed for all experts, and subsequently, the results are aggregated using the geometric mean to form a composite matrix, which is then entered into Super Decision software. Figure 2 presents some examples of the pairwise comparisons.

Before starting Step 3, due to the limitations of Super Decision software, it was mandatory to aggregate all experts' pairwise comparisons using the geometric mean. Subsequently, the data were denazified using the centroid method and Equation 1 to convert the fuzzy values into crisp scores.

	v21	v22	v23
v21	(1,1,1)	(0.25,0.333,0.5)	(4,3,2)
v22	(4,3,2)	(1,1,1)	(6,5,4)
v23	(0.25,0.333,0.5)	(0.166,0.25)	(1,1,1)

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V22	(0.25,0.333,0.5)	(1,1,1)	(4,3,2)
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V23	(0.25,0.333,0.5)	(0.166,0.25)	(1,1,1)

Figure 2: Sample Fuzzy Pairwise Comparisons of Research Factors

Figure 4: Sample Defuzzified Pairwise Comparisons of Research Factors

$$df_{ij} = \frac{[(u_{ij} - l_{ij}) + (m_{ij} - l_{ij})]}{3} + l_{ij} - 1$$

Figure 3: Some Defuzzified Pairwise Comparisons

Step 3 Constructing the Initial Supermatrix: Using the weights obtained from the pairwise comparisons, the initial supermatrix is constructed. The initial supermatrix represents the weights derived from the pairwise comparisons in Step 2. The output of the initial supermatrix in the Super Decision software for the present study is reported in Tab. 2.

Table 2: Initial Supermatrix (Unweighted)

		Criteria				
		V1	V2	V3	V4	goal
Criteria	v1	0	0.278955	0.095338	0.258285	0.57104
	v2	0.222518	0	0.249856	0.104729	0.240601
	v3	0.126834	0.071927	0	0	0.1237
	v4	0.650648	0.649118	0.654807	0	0.064659
Goal	goal	1	0	0	0	0
V1	v11	0.626696	0	0	0	0
V2	v12	0.279688	0	0	0	0
	v13	0.093616	0	0	0	0
	v21	0	0.104729	0	0	0
V3	v22	0	0.258285	0	0	0
	v23	0	0.636986	0	0	0
	v31	0	0	0.636986	0	0
V4	v32	0	0	0.258285	0	0
	v33	0	0	0.104729	0	0
	v41	0	0	0	0.258285	0
	v42	0	0	0	0.636986	0
	v43	0	0	0	0.104729	0

Table 3: Weighted Supermatrix

Criteria						
		V1	V2	V3	V4	goal
Criteria	v1	0	0.172949	0.071661	0.211986	0.57104
	v2	0.050303	0	0.187806	0.522802	0.240601
	v3	0.028672	0.044594	0	0.085956	0.1237
	v4	0.412749	0.402445	0.492191	0	0.064659
Goal	goal	0.226357	0	0	0	0
V1	v11	0.626696	0	0	0	0
V2	v12	0.101021	0	0	0	0
	v13	0.033813	0	0	0	0
	v21	0	0.039798	0	0	0
V3	v22	0	0.098151	0	0	0
	v23	0	0.242062	0	0	0
	v31	0	0	0.15819	0	0
V4	v32	0	0	0.064143	0	0
	v33	0	0	0.026009	0	0
	v41	0	0	0	0.046299	0
	v42	0	0	0	0.114184	0
	v43	0	0	0	0.018773	0

Step 5 – Constructing the Limit (Converged) Supermatrix: The weighted supermatrix must be raised to an infinite power until each row converges to a single value. This value represents

the final weight of the corresponding criterion, sub-criterion, or alternative. The output of the limit supermatrix for the predecessors and successors is presented in Tab. 4.

Table 4: Limit (Converged) Supermatrix

Criteria						
		V1	V2	V3	V4	goal
Criteria	V1	0.18739	0.18739	0.18739	0.18739	0.18739
	V2	0.197538	0.197538	0.197538	0.197538	0.197538
	V3	0.058924	0.058924	0.058924	0.058924	0.058924
	V4	0.192736	0.192736	0.192736	0.192736	0.192736
goal	goal	0.104383	0.104383	0.104383	0.104383	0.104383
V1	V11	0.057245	0.057245	0.057245	0.057245	0.057245
	V12	0.025548	0.025548	0.025548	0.025548	0.025548
	V13	0.008551	0.008551	0.008551	0.008551	0.008551
V2	V21	0.01061	0.01061	0.01061	0.01061	0.01061
	V22	0.026167	0.026166	0.026166	0.026166	0.026166
	V23	0.064532	0.064532	0.064532	0.064532	0.064532

V3	V31	0.01258	0.01258	0.01258	0.01258	0.01258
	V32	0.005101	0.005101	0.005101	0.005101	0.005101
	V33	0.002068	0.002068	0.002068	0.002068	0.002068
V4	V41	0.012043	0.012043	0.012043	0.012043	0.012043
	V42	0.029701	0.029701	0.029701	0.029701	0.029701
	V43	0.004883	0.004883	0.004883	0.004883	0.004883

Finally, after computing the limit (converged) supermatrix, the final weights of each factor can be obtained through normalization. These weights for the main and sub-criteria of the study are presented in Tab5 and 6, respectively.

**Table 5:** Weights of Main Criteria and Their Ranking Relative to the Research Objective

Main Criteria	Symbol	Weight	Rank
Intra-Urban and Infrastructure Factors	V1	0.29437	3
Managerial, Institutional, and Policy Factors	V2	0.31031	1
Supporting and Enabling Factors	V3	0.09256	4
Economic Factors and Development Outcomes	V4	0.30276	2

As shown in the table above, the main criterion Managerial, Institutional, and Policy Factors ranks first with a weight of 0.310. Economic Factors and Development Outcomes and Intra-Urban and Infrastructure Factors are ranked second and third with weights of 0.302 and 0.294, respectively. Finally, Supporting and Enabling Factors hold the last position with a weight of 0.092.

**Table 6:** Weights of Sub-Criteria and Their Ranking

Main Criteria	Sub-Criteria	Symbol	Weight	Rank
Intra-Urban and Infrastructure Factors	Quality and Credibility of Healthcare Services	V11	0.6267	1
	Accessibility and Welfare Infrastructure	V12	0.27969	2
	Security and Urban Environment	V13	0.09361	3
Managerial, Institutional, and Policy Factors	Coordination and Governance	V21	0.10473	3
	Government Role and Support	V22	0.25828	2
	Private Sector Role and Investment	V23	0.63699	1
Supporting and Enabling Factors	Technology and Innovation	V31	0.63699	1
	Education and Human Resources	V32	0.25829	2
	Marketing and Branding	V33	0.10471	3
Economic Factors and Development Outcomes	Revenue Generation and Foreign Exchange	V41	0.25828	2
	Employment and Industrial Development	V42	0.63699	1
	Integration with Other Capacities (Competitive Advantage)	V43	0.10472	3

Based on the results presented in Tab. 6, among the sub-criteria of Intra-Urban and Infrastructure Factors, the sub-criteria Quality and Credibility of Healthcare Services rank first with a weight of 0.626. Within the sub-criteria of Managerial, Institutional, and Policy Factors, Private Sector Role and Investment rank first with a weight of 0.636. Among the sub-criteria of Supporting and Enabling Factors, Technology and Innovation hold the first rank with a weight of 0.636. Finally, within the sub-criteria of Economic Factors and Development Outcomes, Employment and Industrial Development rank first with a weight of 0.636. These findings are further illustrated in Bar Charts 1 and 2.

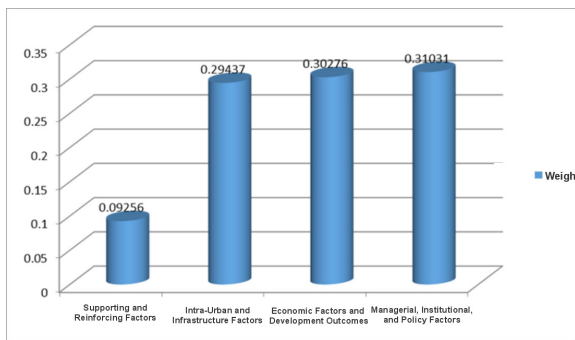


Figure 5: Weights and Rankings of the Main Criteria of the Study

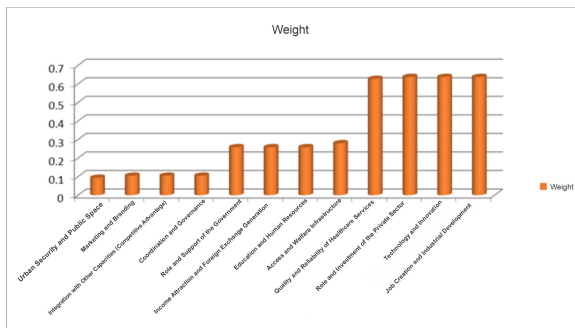


Figure 6: Weights and Rankings of the Sub-Criteria of the Study

## RESULTS AND CONCLUSION

The results obtained from the Fuzzy ANP analysis indicate that the development of health tourism is a multidimensional and systematic

process, whose success depends on the level of interaction and synergy among a set of key factors. Among these, managerial, institutional, and policy-making factors play a central and guiding role, while other economic, infrastructural, and technological factors are influenced by this managerial framework. An efficient management structure, facilitating regulations, supportive policies, and strategic planning can provide a solid foundation for the formation and sustainability of this industry. Conversely, the absence of effective governance and a coordinated institutional framework can lead to instability and reduced competitiveness in health tourism. Accordingly, smart, data-driven, and cross-sectoral governance should be considered the backbone of health tourism development to ensure that policies and decisions in this domain are implemented coherently and efficiently.

Furthermore, the findings suggest that economic factors and developmental outcomes act as driving forces in the sustainability of health tourism. Creating direct and indirect employment, attracting foreign investments, generating foreign currency, and strengthening complementary industries are among the prominent impacts of expanding this sector. The study demonstrates that health tourism is not merely a service activity; rather, it should be regarded as an economic strategy and a driver of sustainable growth. By establishing linkages between the healthcare system, tourism, and urban economy, this industry can diversify income sources, enhance regional competitiveness, and reduce the economy's dependence on less stable sectors. Therefore, the development of economic infrastructure, support for private sector investors, and the provision of a platform for international collaboration are considered vital prerequisites for achieving sustainable growth in this sector.

Furthermore, the position of intra-urban and infrastructural factors as the third most important component in the network analysis highlights the fundamental role of urban en-

vironment quality in attracting health tourists. The presence of standard infrastructure in transportation, accommodation, healthcare services, and urban safety constitutes a critical pillar for the success of this industry. Although the weight of this factor is lower compared to managerial and economic factors, it serves as a prerequisite for the effective functioning of other components. Cities that fail to provide a favorable environment, well-equipped medical facilities, and easy accessibility for international patients fall behind in global competition within this sector. Consequently, development policies should focus on linking managerial structural reforms with investments in urban infrastructure to simultaneously improve service quality and enhance the attractiveness of medical destinations.

Finally, the results indicate that supporting and reinforcing factors, such as advanced technologies, specialized human resource training, and smart marketing, although ranked last, play an indispensable role in the sustainability and innovation of this industry. Utilizing information technology, digitalizing healthcare services, expanding targeted international marketing, and enhancing the professional knowledge of staff can lead to increased efficiency, improved service quality, and expanded global markets. Overall, the FANP analysis underscores the necessity of a systemic and network-based approach to health tourism development an approach in which no single factor is decisive, and sustainable success is achieved only when intelligent management, dynamic economy, efficient infrastructure, and technological support interact and synergize continuously.

Based on the study findings, the development of health tourism in Iran requires a comprehensive, cross-sectoral, and forward-looking approach to enhance the position of cities in the regional and international competitive market. It is recommended that managers, through coordination among the Ministry of Health, Ministry of Cultural Heritage, and the

private sector, develop a national roadmap for health tourism and prioritize strengthening infrastructure, human resource training, and the adoption of advanced technologies. From a research perspective, integrating FANP with other multi-criteria decision-making methods and conducting comparative studies with successful countries can improve analytical accuracy. The main limitation of the study was limited access to comprehensive data and coordinating interviews with specialists, which can be mitigated in future research through increased sample sizes and the use of international datasets.

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