



## Designing a Model for the Management of Health Tourism Development in Fars Province, Iran

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### Abstract

**Introduction:** Health tourism as a basic parameter has an undeniable role in achieving sustainable growth and development and has been given special attention in developed countries, while in developing countries such as Iran, less attention has been paid to this issue. This study aimed at designing a management model for the development of health tourism in Fars Province, Iran.

**Methods:** 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 have traveled to Fars province to receive health services. All participants were selected by the purposive sampling method within a survey design from medical tourism centers, wellness tourism centers, and curative tourism centers in Shiraz City of the province. After informed consent was obtained, the required quantitative data were collected using a survey method and a questionnaire.

The questionnaire used had 6 sections including: (1) structural management; (2) behavioral management; (3) environmental management; (4) protective management; (5) development and improvement management; and (6) development of health tourism, which had 34 items and each item was scored based on a five-point Likert scale (from 1=very low to 5=very high). Data analysis was performed with SPSS-20 and Smart-PLS software.

**Results:** In this study at first, validity and reliability analyses using SEM for Cronbach's alpha and composite reliability (CR) of subscales and total score of the questionnaire revealed an moderate to excellent level of internal consistency ( $\alpha=0.62$  to  $0.91$  and  $CR=0.68$  to  $0.98$ ), respectively. The findings indicated that independent variables of model explain 0.921% of health tourism management variations in this sample. With regards to the path coefficients between latent constructs of the model, three structural (0.315), behavioral (0.459), environmental (0.234) factors have a significant effect on health tourism management in this study ( $T<1.96$  and  $2.58$ ).

**Conclusion:** Managers and officials of Fars province are expected to use the management model presented in this study to develop health tourism and focus on the pillars of sustainable development of this model such as structural, behavioral, environmental, protective and development factors for attracting foreign tourists and promoting health tourism in Fars province.

**Keywords:** Management model, Development, Health tourism



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### Introduction

The field of tourism has a very wide scope, and one of the most important subsets of it is health tourism that effective attention to it leads to development. Today because of its competitive advantages and disadvantages, it received a lot of attention and has become one of the fastest growing segments of the world tourism industry (1). There are different definitions for health tourism. As an example,

it is an organized trip from one's environment to another to maintain, improve, and restore one's physical and mental health (2). It includes a variety of sub-topics such as natural tourism, preventive care, medical and clinical treatments, traditional medicine, energy therapy, yoga, meditation and tourism (1). In another definition of the World Tourism Organization (WTO), health tourism is the use of services that improve or enhance a person's

health and morale (with mineral water, healthy weather, or medical interventions) and are performed outside of the individual's place of residence (3). Generally, attracting health tourists is one of the basic parameters that has an undeniable role in achieving sustainable growth and development in societies and has received special attention in developed countries; While in developing countries, less attention has been paid to this issue and no proper investment has been made in this field (1). This neglect has led developing countries to lose large amounts of capital from not attracting health tourists who travel to other countries for reasons such as lack of insurance coverage, staggering costs of health care, or lack of specialized facilities in the country of origin (4).

At the macro level, governments are interested in the economic benefits of health tourism industry (5). So that, every year millions of people around the world travel to other countries to receive better and cheaper health, treatment and prevention services (6). Since the average income from medical tourism is more than 3 times that of ordinary tourism, in recent years there has been increasing competition between different countries especially developing Asian countries to attract health tourists (7). According to the report of Medical Tourism Association (MTA), 6 million people travel for medical treatment from one country to another, and if you add in those who travel a distance within a country it exceeds 10 million a year. Also, according to this report more than 10 million people traveled to Asia in 2015 to receive health care (8). Asian countries such as India, Singapore, Philippines, Malaysia and the United Arab Emirates have many programs to attract health tourists and have been able to great success (8-11). Currently, there is a competition on what countries will benefit from this growing global industry.

The phenomenon of the industry is the amount of resources countries around the world are putting into attracting the medical tourist by offering high quality, low cost, and specialized care with concierge and hospitality benefits. Medical Tourism is an important part of a growing interest of health care providers in other countries around the world willing to attract and accommodate medical travelers. As a result there has been a growing concern for the creation of professional standards designed to protect the quality and safety of patient care and the types of business opportunities that are available in this new industry (12).

Iran has a competitive advantage and high potential in attracting health tourists for various reasons and has been one of the active centers of health tourism

in Asia and the Middle East (5). In Iran, according to what is seen in government documents and policies, achieving the goals set in the Fourth Development Plan of the country and the vision document as a legal obligation, show the importance of health tourism planning and development (13). According to these documents, Iran in the horizon of 1400 should be one of the main hubs of health tourism in the region, and through it provide significant foreign exchange earnings (5).

This is while there is a big gap between the documents and perspectives and the reality of Iranian health tourism. What is obvious is the low ranking of Iran in the tourism industry, especially health tourism. According to the report of the World Economic Forum in 2017, Iran is ranked 93<sup>rd</sup> out of 136 member countries in the ranking of countries in achieving tourism indicators. Also, according to this report, in 2015, Iran was ranked eighth in the Middle East (14). In fact, our country is facing serious challenges and issues in attracting health tourists, some of which are: the lack of a written medical tourism program, inefficiency of the government in supporting health tourism, worn-out medical infrastructure, non-standard costs of hospitals, little cooperation at the macro and operational levels, lack of professional human resources in the health sector, lack of coherent and effective marketing in the field of health tourism, the lack of health tourism registration and response systems to dissatisfied tourists (14). In such a situation that there is a big gap between the current and desired status of health tourism in Iran and due to the weaknesses in this industry that lead the country to lose many benefits, identifying and prioritizing the factors affecting the management of health tourism development by emphasizing the key criteria influencing sustainable development and presenting the model of health tourism management are among the ways to progress (15). So that the results of extensive studies emphasize on infrastructure (16-18), promotion and advertising (19), internal regulations and policies (20), ecological and physical protection (21), ecological, social, physical, functional and economic development and improvement (21), identifying and evaluating structural, behavioral and environmental factors (15).

According to the results of previous research, it can be said that the first step in the management and development of health tourism is to recognize the capabilities, bottlenecks, capabilities and tourist attractions of the desired location according to the principles of sustainable development (22). Locating areas prone to health tourism by considering

some criteria such as: Natural landscape (natural landscapes, mineral springs and vegetation); Topography (height, slope and slope direction); Climate (air quality and dust, humidity, wind intensity and temperature); Economic capabilities (access to a suitable workforce, tourist attraction and having a local investor); Therapeutic capabilities (proximity to the blood transfusion organization, access to the emergency room, proximity to specialized hospitals and specialized medical staff); and Physical capabilities (access to airports and railways, drinking water, electricity and gas); affects choosing the best place to develop health tourism (23). In addition, some experts including Gearing using a survey of tourists stated that the level of infrastructure development (consisting of roads, water, electricity, security services, health services, communications, and public transportation) are determinant factors in the entry of tourists including health tourists to any region (24). Also, according that, informing, identifying and communicating with health tourism destinations including medical tourism, nature health tourism and health tourism are done primarily through health tourism websites, so the development of technology and the creation of health tourism facilitator websites play an effective role in the development of health tourism destinations (25). At present, such websites are not only responsible for sharing health information, but also play an important role in the optimal selection of health care providers (26). On the other hand, in order to develop health tourism as one of the new areas of modern tourism, there is a vital need to create a favorable attitude towards the destination. For this purpose, the principles of social marketing can be used to develop the desired image of the destination in the minds of health tourists. So that by using social marketing tools, and creating a positive belief in the destination of health tourism, the ground for the desire to travel for medical treatment can be promoted (27). In this regard Dryglas and Salamaga. showed that social, demographic, behavioral and psychological factors are effective in identifying the motivation of health tourism trips, and this allows local governments and active companies to better understand how to evaluate the services, infrastructure and attractions of health tourism resorts such as spas and provide an appropriate management model for the development and attraction of health tourists (28). Savaşan et al. showed that health tourism education needs to consider a four-factor model consisting of education, infrastructure, government policies and value-added actions. According to them, four proposed factors

can lead to the development of health tourism, and these factors predict the success of health tourism to an acceptable extent (29). The results of Ormond and Solianti research showed that the motivations of medical travelers are influenced by infrastructure preparations and measures, social, economic and political situation, access to medical professionals, appropriate equipment and facilities in the destination countries. In addition, the results of this study showed that for the development of health tourism industry, managers should rationalize the costs of treatment, accommodation and transportation, as well as the conditions of stay and social care networks in accordance with international standards (30). In addition, Khazaei and his colleagues in their studies divided the factors influencing the design of health tourism development and management model into 7 factors, which are: (1) investment in infrastructure; (2) urban management facilitators; (3) human factor; (4) information technology; (5) natural factor; (6) the cultural heritage; (7) medical service (31). Also, Harandi and Mirzaeian Khamseh., using qualitative research method and relying on symbolic interpretive philosophy showed that the factors affecting the attraction of health tourists in Iran are composed of five main categories, which are: (1) quality and value creation of treatment; (2) health advertising; (3) special value of urban brand; (4) Islamic treatment services; and (5) infrastructure and tourist attractions (14). The results of Azizi and Zahedi research showed that high costs, limited publicity, strict rules and regulations, medical needs of the local community and lack of manpower are the most important obstacles to the development of health tourism, respectively. In addition, the results of this study showed that based on these barriers, measures can be taken to remove barriers in this industry and ultimately better management and development of health tourism (5).

In general, according to precedent of existing research, identification of factors affecting the design of health tourism development management model has led to achieving sustainable development in developing countries such as Iran and is doubly important. However, most studies on health tourism in Iran focus on the importance of performance and health tourism systems; so that they have developed the health tourism industry in the framework of supply chain management and have paid less attention to the need to design a sustainable management model and the factors affecting it in this industry (32). Therefore, in this study, the lack of studies in the literature related to the factors affecting

the design of health tourism management model by considering the principles and criteria of sustainable design in this industry is considered as a significant shortcoming. The development of health tourism has been considered in this study. In addition, most studies on health tourism have focused solely on the economic and political aspects, health system strengths and weaknesses, and problems (5, 16, 33-35). While this study seeks 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. Also, since health tourism is one of the new areas of tourism that is known as an important part of profitable and competitive industries in the world, conducting indigenous research in this area to design a development management model of health tourism is essential for researchers and professionals. Therefore, the main subject of this study is “designing a health tourism development management model in Fars province”.

## Methods

This study was performed by descriptive-correlation method which is a type of applied research in terms of quiddity and purpose (36). The required sample size was estimated according to the objectives, type and method of study and using previous studies with an effect size of  $E.S=20\%$ , power 80% and 95% confidence, 100 foreign tourists; which were selected as a research sample considering the possible loss of 120 people. Sample size has been determined with regards to the research design with robust statistic for SEM (37, 38). All participants were selected by the purposive sampling method within a survey design from medical tourism centers, wellness tourism centers, and curative tourism centers in Shiraz City. The purposive sampling often begins with a defined objective in mind and the sample is thus selected to include suitable individuals and rule out those who do not fit the criteria (39-41). Therefore, two questioner fluent in English and Arabic language by referring to the Tourism Organization and health centers licensed to health tourism at the time of the study began to sample the clients, and with the initial examination if the selected person was not included in the sample for any reason, the next person replaced him.

After informed consent was obtained, apart from the demographic questionnaire, to collect data a researcher-made questionnaire containing 6 dimensions: (1) structural management; (2) behavioral management; (3) environmental management; (4) protective management; (5) development and

improvement management; and (6) development of health tourism was used. The questionnaire had 34 items that each item was answered based on a five-point Likert scale (from 1=very low to 5=very high). Also, a higher score on each factor of the scale meant better performance and greater efficiency of that factor. Measurement scale questions were extracted by studying previous research and polling interviews of 20 experts (10 faculty members and 10 activists in the field of health tourism), and identification of questionnaire subscales and peer-checking was done by an expert team. The initial questionnaire was made in Persian, and translated into English and Arabic language.

In this study, the reliability of the instrument was measured using the partial least squares (PLS) method and using the two criteria of cronbach's alpha and composite reliability ( $\alpha=0.62$  to  $0.91$ ;  $CR=0.68$  to  $0.98$ ). In addition, the convergent validity of health tourism management questionnaire with using the average variance extracted (AVE), is reported  $0.44$  to  $0.91$ . To calculate divergent validity Fornell and Larker index were used (42), which is at an acceptable level and the amount of AVE for each structure is more than the common variance between that structure and other structures in the model. Statistical analysis of research data was performed using SPSS-20 and Smart-PLS software.

## Results

In this study, the mean age and standard deviation for participants were  $34.57$  ( $1.496$ ). The tourists sample consisted of men ( $N=69$ ,  $57.5\%$ ) and women ( $N=51$ ,  $42.5\%$ ). The participants sample consisted the citizens of European countries ( $N=2$ ,  $1.7\%$ ), African countries ( $N=7$ ,  $5.8\%$ ), East Asian countries ( $N=4$ ,  $3.3\%$ ) and Middle East countries ( $N=107$ ,  $89.2\%$ ).

First, considering the linear scattering distribution between the variables and using the One-Sample T test, the normal distribution of the identified factors was calculated. The results of this study showed that all the identified factors (structural, behavioral, environmental, conservation, development and improvement) had a significant normal distribution (Table 1).

In this study, using heuristic factor analysis, the variables or the strategies explaining the development of health tourism were reduced to a smaller number of latent variable or hidden dimensions, and then the correlation of these components was analyzed. According to Howitt and Cramer., there is insufficient agreement on the number of participants and the sample size required to use exploratory factor

**Table 1:** One-sample t-test to calculate the normal distribution of factors affecting the management model of health tourism development

Factors		N	Mean	Std.D	T	Df	Sig
Structural	Attractions	120	3.908	0.5940	72.073	119	0.000
	Infrastructures	120	4.39	0.639	75.286	119	0.000
	Products and Services	120	4.11	0.646	69.715	119	0.000
	Sources	120	3.92	0.681	63.015	119	0.000
	Advertising	120	3.83	0.599	70.129	119	0.000
	Research	120	4.12	0.769	58.644	119	0.000
	Supervision	120	4.27	0.695	67.258	119	0.000
Behavioral	Expectations	120	4.13	0.755	59.957	119	0.000
	Motivation and needs	120	4.33	0.747	63.462	119	0.000
	Mutual actions	120	4.38	0.723	66.330	119	0.000
Environmental	Economic environment	120	4.18	0.830	55.216	119	0.000
	Legal environment	120	4.38	0.636	75.363	119	0.000
	Socio-cultural environment	120	4.09	0.635	70.580	119	0.000
	Political environment	120	3.99	0.692	63.185	119	0.000
	Physical-geographical environment	120	4.23	0.667	69.400	119	0.000
Protective	Ecological	120	3.83	0.640	65.664	119	0.000
	Framework	120	4.38	0.649	73.844	119	0.000
	Operational	120	4.08	0.624	71.546	119	0.000
Development and Improvement	Ecological	120	3.88	0.676	62.936	119	0.000
	Social	120	3.88	0.582	73.039	119	0.000
	Framework	120	4.20	0.751	61.225	119	0.000
	Functional	120	4.33	0.676	70.121	119	0.000
	Economical	120	4.14	0.770	58.906	119	0.000
Health Tourism Management	Cross-Border Trade / E-Health Services	120	4.34	0.750	63.388	119	0.000
	Consumption Abroad	120	4.35	0.729	65.336	119	0.000
	Trade Via Commercial Presence	120	4.23	0.814	56.831	119	0.000
	Temporary Movement of local people towards development	120	4.38	0.649	73.844	119	0.000
	Infrastructures	120	4.08	0.624	71.546	119	0.000
	Service delivery	120	3.88	0.582	73.039	119	0.000
	Advertising	120	4.20	0.751	61.225	119	0.000
	Service delivery	120	4.14	0.770	58.906	119	0.000
	Advertising	120	4.34	0.750	63.388	119	0.000

analysis, however, it has been suggested in various sources that factor analysis should not be less than about 50 participants and it is necessary to select at least 10 participants for each variable (43); which is expected according to the sample size selected in this study, Agent analysis has good sample volume quality. The results of this study showed that there was the highest positive correlation between conservation factors and development and improvement with structural factors. Also, a strong positive correlation was observed between protective factors and environmental factors and between development and improvement factors with environmental and protective factors (Table 2).

The results of calculating the percentage of variance explained by each of the vertically rotated factors showed that the first factor, “structural factors”, has the highest level of explanatory power of 70.835% of the variance (Table 3). After identifying the

first factor or the “structural factor” as the best factor explaining the variance of the model, this factor was rotated vertically and the factor loads of 5 variables on this factor were calculated as the matrix of rotated components, which showed the highest factor load was related to structural factors (0.948), development and improvement factors (0.901), protective agents (0.876), environmental factors (0.826), and behavioral factors (0.619) respectively. Therefore, since all 5 variables had a factor load greater than 0.5 on the factor, they have a good value in the model (Table 3).

Reliability and validity of the measures and structural equation model (SEM) were determined using Smart PLS software (44, 45). According to Kline (2011), the basic assumptions for running of SEM met in this study (46, 47). In this study, first, reliability analyses using SEM for Cronbach’s alpha and composite reliability (CR) of research structures revealed a moderate to excellent level of internal

**Table 2:** Correlation matrix between factors

Factors	1	2	3	4	5
Structural	1				
Behavioral	0.431	1			
Environmental	0.735	0.348	1		
Protective	0.846	0.371	0.711	1	
Development and improvement	0.864	0.613	0.628	0.654	1

**Table 3:** Total Variance Explained and Component Matrix

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Component 1
	Total	Variance	Cumulative	Total	Variance	Cumulative	
Structural	3.542	70.835	70.835	3.542	70.835	70.835	0.948
Behavioral	0.789	15.778	86.613				0.901
Environmental	0.345	6.910	93.523				0.876
Protective	0.274	5.474	98.997				0.826
Development and improvement	0.050	1.003	100.000				0.619

**Table 4:** Cronbach's alpha and Composite Reliability of research model structures

Factors	Cronbach's alpha	Composite Reliability	AVE
Structural	0.62	0.75	0.44
Behavioral	0.64	0.68	0.62
Environmental	0.66	0.69	0.72
Protective	0.91	0.98	0.91
Development and improvement	0.60	0.76	0.76
Health tourism management	0.89	0.92	0.86

consistency ( $\alpha=0.62$  to  $0.91$  and  $CR=0.68$  to  $0.98$ ) (Table 4). Second, results showed that the Average Variance Extracted (AVE) for measures of structural, behavioral, environmental, protective, development and improvement, and health tourism management were  $0.44$ ,  $0.62$ ,  $0.72$ ,  $0.91$ ,  $0.76$ , and  $0.86$  respectively (Table 4). In addition, the AVE squared matrix and correlation coefficient between measures of research structures (Discriminant Validity) were also satisfactory.

The SEM was used to examine the direct and indirect effects of structural, behavioral, environmental, protective, development and improvement as independent variables in the explanation of health tourism management indicators as dependent variables in this sample. Thus, the effect of each of the factors on health tourism management indicators were computed using SEM with Smart-PLS. Results indicated that independent variables of model explain  $0.921\%$  of health tourism management variations in this sample (Figure 1). With regards to the path coefficients between latent constructs of the model, structural, behavioral, environmental, and development and improvement factors have positive relationships with health tourism management ( $0.315$ ,  $0.459$ ,  $0.234$ ,  $0.177$ , respectively). whilst protective

factor have negative path coefficient with health tourism management in this study ( $-0.054$ ) (Figure 1). Results for the significance of path coefficients and factor loads showed that the T-value of path lines between structural, behavioral, and environmental factors as dependent component of model and health tourism management is higher than  $1.96$  or  $2.58$ . Therefore, Three structural, behavioral, and environmental factors have significant effects on health tourism management in this sample (Figure 2). Whiles, the results showed that protective, development and improvement factors did not have significant effects on health tourism management in this study ( $T < 1.96$ ). Finally, evaluation of the structural model quality with respect to root-mean-square error (RMSE), Standardized root mean square residual (SRMR), Unweighted Least Squares (d-U LS), Chi-Square and normed fit index (NFI) showed that this structural equation model is fitted for predictive roles of structural, behavioral, and environmental factors on health tourism management (Table 5).

### Discussion

In the present study, results of the SEM calculation to investigate the direct and indirect effects of for structural, behavioral, environmental, protective,

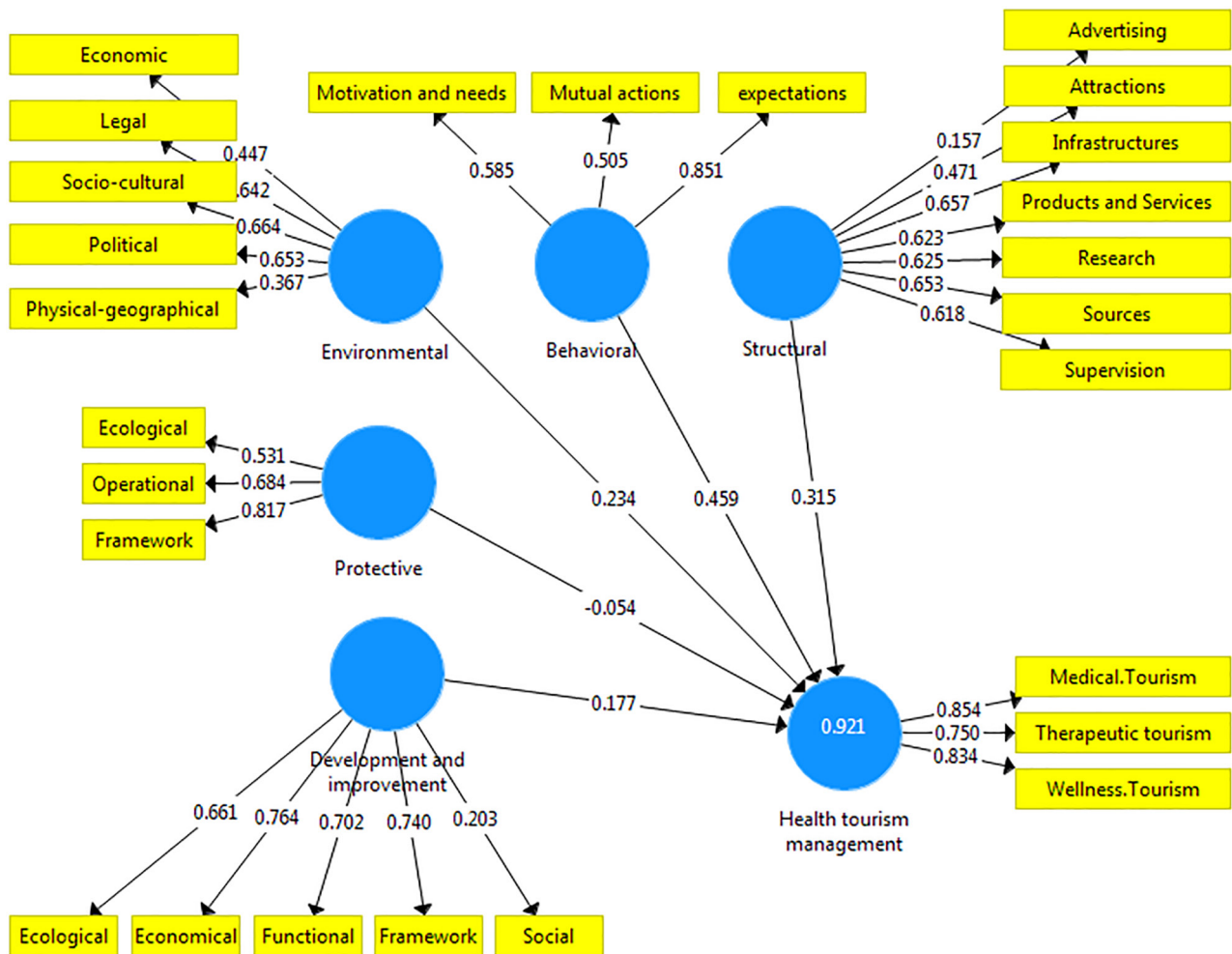


Figure 1: Results of the analysis of path coefficients, explained variance, factor loads and indirect effect of observed variables

Table 5: Model fit index

Indices	Standard of fit	Estimated model
RMSE	Less than 0.05: good fit Between 0.05 to 0.08: acceptable fit Between 0.08 to 0.1: moderate fit More than 0.1 :weak fit	0.054
SRMR	Nearby values to zero are better	0.068
d_ ULS	Variation range between -1 to +1	0.849
Chi-Square	$\chi^2 > 0.05$	14.281
NFI	>0.9	1.129

development and improvement factors, as independent variables in explaining both manifest and latent variations of health tourism management, as dependent variable, showed that independent variables (structural, behavioral, environmental, protective, development and improvement factors) explain 0.921% of health tourism management variations. Overall, this results support the main hypothesis and show the direct and indirect predictive roles of structural, behavioral, environmental, protective, development and improvement factors

on health tourism management. These results are consistent to the predictions and basic assumptions about the role of these variables on the management of health tourism development (14, 21, 28, 30, 48-50). In line with the results of this research and the existing theoretical foundations regarding the development of health tourism, research results of Kharazmi et al. showed that cultural factors had a favorable status and a high impact on the perspective of foreign tourists and managers. According to the results of their research, government support in providing visa and

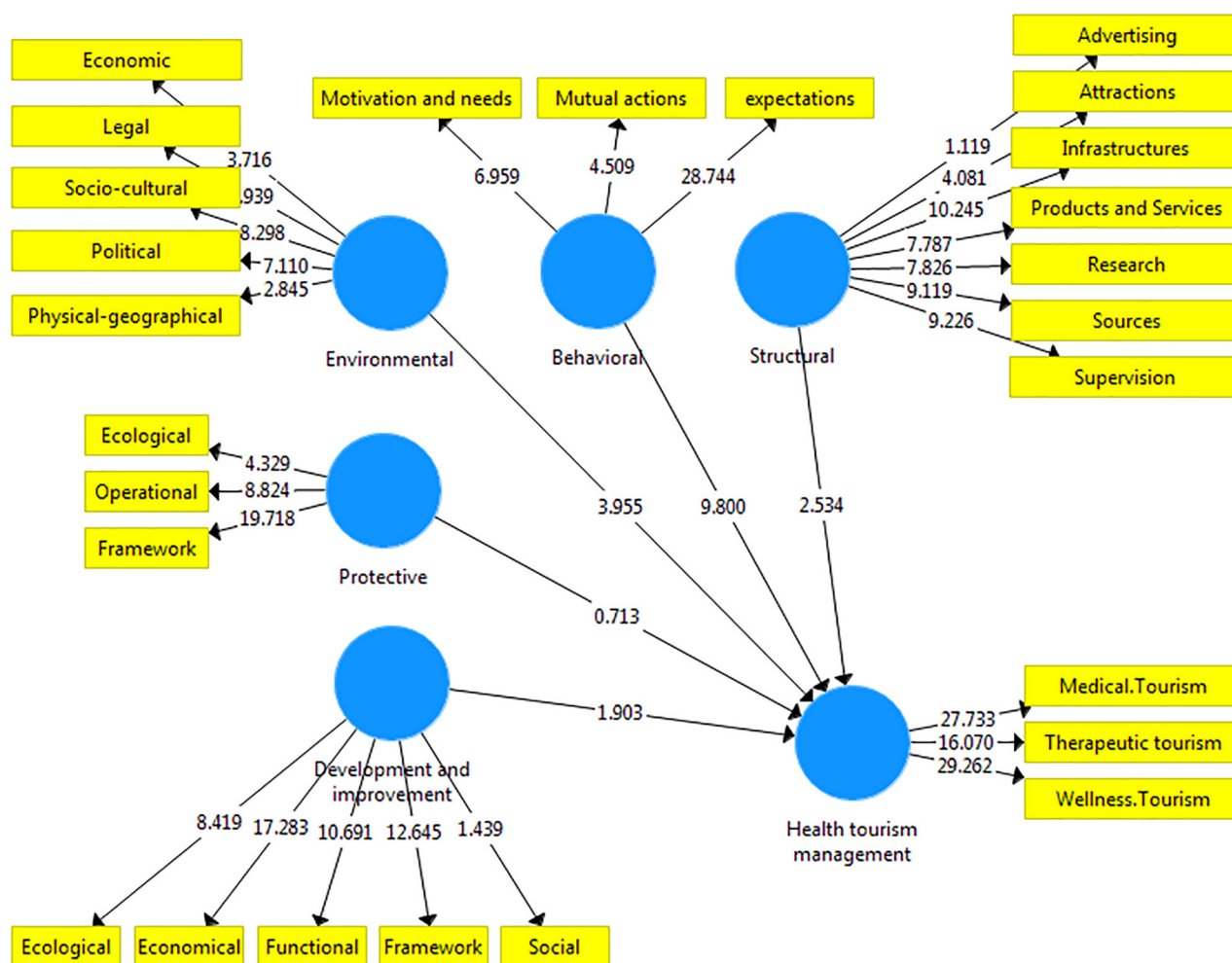


Figure 2: Significance computing of path coefficients and factor loads

accommodation services to tourists was identified as influencing factors in destination selection (51).

Results showed that three structural, behavioral, and environmental factors have a significant positive path coefficient with health tourism management. Furthermore, results indicated that except for advertising components, factor loadings and the indirect effect of observed variables (structural, behavioral, and environmental factors) on health tourism management were significant. These findings are congruent with previous literature which supported the long-lasting effects of structural, behavioral, and environmental factors on health tourism management. For example, the results of Abdolkhoda et al. study showed that hospital websites can be a good and effective tool to attract health tourists; According to them, the realization of this important issue requires following the structural and content criteria in their design. So, given that the websites of the evaluated hospitals are in a relatively good condition in terms of structure, but their status is evaluated unfavorable in terms of content, it is

necessary for hospitals to redesign their websites in terms of content in order to establish their position in the marketing of the medical tourism industry (52).

Dryglas and Salamaga. showed that attention to social, demographic, behavioral and psychological factors in identifying the motivation of health tourism travelers are the most important factors affecting the development of health tourism (28). Also, The results of Savaşan et al. survey showed that education, infrastructure, government policies and value-added actions are four factors influencing the development of health tourism in leading and developing countries (29); Which these results are consistent with the results of this study and predictions of health tourism management. Generally, the results of extensive studies and available literature show that planning and investing the development of structural, behavioral, environmental factors will enhance the capacity of health tourism in target areas (29, 30, 49).

The results showed that in the first step, behavioral factors (including expectations, motivation and needs, and social interactions), are the best effective priority



for designing a management model for health tourism development in Fars province. Consistent with these results, the results of Dryglas and Salamaga research showed that paying attention to the behavioral and psychological factors related to the motivation of health tourism travelers allows local governments to better develop health tourism (28). The results showed, in the second step that structural factors (including attractions, infrastructure, products and services, resources, advertising, research and monitoring) are the best effective priority was to design a health tourism development management model in Fars province. Delgoshaee et al. stated that the development of infrastructure is one of the most important factors affecting the development of health tourism, which predicts the return of health tourists, and is consistent with the results of this study (53). The results of the present study showed that in the third step, environmental factors (including economic, legal, socio-cultural, political and physical-geographical environment) has an important impact on the development of health tourism. These findings are congruent with previous literature which supported the long-lasting effects of environmental factors on health tourism management (15, 53). In explaining this finding, it can be said that with providing a managerial model of health tourism development with emphasis on sustainable design principles and criteria and considering structural, behavioral, and environmental factors, it can significantly promote the development of health tourism in Fars province. Therefore, managers and officials in the province by using the above management model can identify the threats for health tourism and remove existing barriers, and by developing health tourism opportunities in Fars province in accordance with world standards take advantage of the benefits of this industry such as job creation.

The results of this study indicated that protective factors have significantly negative path coefficient with health tourism management. This results shows that factor loadings and the indirect effect of observed variables were significant for three factors ecological, framework, and operational. In other words, these three factors have significantly negative path coefficient with health tourism management. These findings are inconsistent to the literature which affirmed the role of protective factors such as ecological, framework, and operational factors on the health tourism management (29, 30, 49, 54). Furthermore, the results of this study showed that development and improvement factors do not have a significant path coefficient with health tourism

management. This finding contradicts the previous literature on health tourism management (14, 21, 28, 30, 48-50). This discrepancy may be due to differences in the measurement scales and cultural differences in the target sample.

At the end, the structural model was well-fitted and valid for all components of the management model presented for health tourism development in Fars province. Explaining this finding, it can be said that managers and authorities of Fars province using the key structures of health tourism development management model in this study and identifying the hidden and obvious effects of the structures of this model can solve the problems facing the health tourism industry, and make use of the province's environmental potentials and provide the opportunity to improve the quality of health tourism services in the province. Overall, managers and relevant authorities of the province can utilize the managerial model presented in this research for health tourism development and attract foreign tourists and promote health tourism in Fars province.

#### *Limitations*

First, the present study has limitations because it only used a single self-reporting scale for the measurement of health tourism management. Second, this was a clinical sample rather than a community representative sample. Thereby, without normative data on Iran's tourism potentials, it cannot generalize the results to a larger population. Third, this was a cross-sectional study. Perhaps personal biases could be affecting the response of health tourists.

#### *Conclusions*

According to the results of this study, it is expected that experts and policy makers in the field of health tourism be informed about health tourism so that they can make appropriate decisions in their programs that will help to remove the restrictions on the travel of health tourists in Fars province. The results of the present study inform high-level decision makers where and how to focus their efforts and resources in order to have the maximum impact on the management of health tourism development at the local and national levels. Therefore, First, it is suggested that more investment be made on the development and improvement of health tourism places in terms of structure, behavior and environment. Second, using the management model presented in this study, the officials should close the gap between the current situation and the favorable situation of health tourism in Fars province. Third,

future studies should examine structural equation models for direct and indirect effects of sustainable development factors such as structural, behavioral, environmental factors and similar ones on health tourism management with multiple measures and qualitative methods in different types of tourists with diverse cultural backgrounds. Fourth, it would expect that next studies use others measures of sustainable development factors to explore the direct and indirect effects of these variables in health tourism management.

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### Ethical Considerations

This research was approved by the Ethics Committee of the Islamic Azad University, Shiraz Branch (ethics code No. IR.IAU.SHIRAZ.REC.1398.034).

**Conflict of Interest:** None declared.

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