



Iran's Need for Medical Tourism Development

Farhad Hemmati¹, Fatemeh Dabbaghi^{2*}, Ghahraman Mahmoudi³

¹Student of Ph.D. by Research, Hospital Administration Research Center, Sari Branch, Islamic Azad University, Sari, Iran

²Associate Professor, Hospital Administration Research Center, Islamic Azad University, Sari, Iran,

³Associate Professor, Hospital Administration Research Center, Islamic Azad University, Sari, Iran

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ABSTRACT

Diversity, high quality, and low price of medical services in Iran, and its geographic locations and situation in the region are among the factors that contribute to attracting medical tourism in Iran. This study aimed to examine the impact of medical tourism on the development of Iran. This applied study was conducted in 2017 with the statistical population of health tourists in a year. Considering the unlimited population, Cochran's sampling formula was used to select 384 subjects. For this purpose, Iran was divided into five regions, and sampling was performed using the multi-stage cluster random sampling method. The construct validity of the questionnaire was confirmed using confirmatory factor analysis, and its reliability was confirmed using Cronbach's alpha of greater than 0.7. Data were analyzed using factor analysis by SPSS 18 and LISREL 8.50, and the final model was developed using mathematical models. The model was validated using confirmatory factor analysis. Factor analysis showed that medical tourism has an impact on the development of Iran. The ratio of chi-square to degrees of freedom was less than 3. RMSEA was 0.09, and normed fit index (NFI), non-normed fit index (NFI), incremental fit index (IFI), and comparative fit index (CFI) were higher than 0.9. Iran can enjoy a comprehensive development by employing a systematic and comprehensive medical tourism and taking into account its capabilities.

Keywords: Development, Medical Tourism, Healthcare Services, Iran

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Corresponding author: Fatemeh Dabbaghi

e-mail ✉ alemi.mahmudi@iausari.ac.ir

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INTRODUCTION

The growing demand for health services is a global phenomenon related to economic development that produces a growing income and education. Changing demographics, especially the aging of population and the needs of the elderly for more medical services, along with epidemiological change, i.e. the increasing incidence of chronic diseases, have all increased the demand for more and better health services. Waiting time or increased cost of in-home health care along with the availability of cheaper options

in developing countries, have led to new health care consumers, or medical tourists who seek medical treatment abroad [1]. In Southeast Asia, the health sector is rapidly expanding, which can be attributed to the rapid growth of the private sector and especially medical tourism, which is emerging as a lucrative business opportunity. Countries invest on their popularity as a tourist destination by combining high-quality medical services at competitive prices with tourism packages. Some countries are creating a comparative advantage in providing their services based on the organizational structure of their healthcare system [2]. Traveling abroad gives patients the opportunity to access surgical methods that are not available or not affordable in their own country. Therefore, patients can

potentially save their lives and relieve their pain [3]. In addition, it is believed that the demand for treatment abroad can create pressure to improve domestic health systems as patients generally return to their home country and get used to high-quality care services [4]. Professional monitoring and activities associated with international medical quality evaluation will be the main subject of research and development of health systems, especially considering that the identified needs among international patients is the main areas of health services used by international patients and health tourists. These areas include cosmetic surgery, dentistry (general, restorative, cosmetic), cardiovascular (angioplasty, coronary artery bypass graft, transplant), orthopedic (joints and spine, sports medicine), cancer (high, as the last option), reproduction (fertility, women's health), weight loss (gastric bypass), imaging, testing, health screening and second assessment (new medical judgment) [5]. Due to its huge financial turnover, many private investors are willing to invest in this sector if the conditions are favorable. Increased investment by the private sector leads to economic development and job creation [6].

According to Nouri and Kargari, personnel behavior and social and communication security are, respectively, the most important factors for medical tourist attractions [7]. Goudarzi *et al.* reported that the development of medical tourism in Shiraz metropolis is statistically significantly related to the price of medical services and tourism, quality of health care and tourism, culture, resources, facilities and equipment of health care and tourism, and information technology. Differences were also observed among medical tourists of different provinces in terms of satisfaction with price, quality, culture, resources, facilities and equipment, and information and communication technology [8]. Morowati-Sharifabadi and Asadi-Ardekani stated that up to date information of hospital personnel and relevancy of doctors' expertise with their duties are the most fundamental factors in the development of health tourism and should be emphasized [10]. Delgoshahi *et al.* reported that Iran is facing challenges in fundamental and medical infrastructure, efficient government support, a comprehensive plan for the development of medical tourism, participation and intersectoral coordination in macro and micro levels, prestigious international health service providers, and integrated promotion and

marketing [10]. Therefore, the present research examines the impacts of medical tourism on the development of Iran.

MATERIALS AND METHODS

This applied descriptive analytical survey study was conducted in 2017 and aimed to develop a suitable model using hospital experts' comments through structural equation modeling.

The study population is the health tourists in Iran. Since the exact number of tourists that use health facilities is not available and considered unlimited, 384 subjects were selected as the study population using the Cochran's sampling formula. For this purpose, Iran was divided into five regions; with each region having 77 subjects selected using multi-stage random cluster sampling.

The questionnaire designed for this study consists of three parts. The first part includes demographic data of respondents, such as gender, age, and education. The second part includes the main items on health tourism. This questionnaire is adapted from the study by Cassidy (2014). The second part includes the main questions on development. This questionnaire is adapted from the study by Goudarzi *et al.*, [8]. A Likert-type scale was used for scoring the items from 1 (strongly disagree) to 5 (strongly agree). To assess the content validity of the research, which shows the consistency of the questionnaire with the objectives, after designing the initial model based on the literature, dimensions, components and parameters of the model, the present questionnaire was sent to 15 professors and university faculty members who did not belong to the statistical population. Ten of them reviewed and returned the questionnaire. Their comments were obtained to make necessary changes in questionnaire, and thus, it was assured that the questionnaire measures the desired traits and attributes. Then, experts' comments regarding technical and literary writing issues along with definitive and final comments of advisors were applied to the questionnaire, and the final questionnaire was distributed among the statistical sample. The construct validity will be tested by confirmatory factor analysis, where the test results confirm the construct validity. To determine the reliability of the questionnaire, before its complete distribution, 30 questionnaires were distributed among the

members of the sample. Moreover, after a week, the questionnaires were redistributed to them. An appropriate alpha coefficient of 0.75 was obtained. Using SPSS 18 and LISREL 8, different methods of descriptive and inferential statistics were used for data analysis and hypothesis testing.

RESULTS

According to the findings, 72% of tourists were male, 59% were in the age group of 31-40 years, and 53% had a bachelor's degree (Table 1).

Table 1: Frequency distribution, frequency percentage and cumulative percentage of respondents' demographic variables

Frequency Variables	Observed frequency	Observed percentage	Cumulative percentage
Gender Male	276	72	72
Age 31-40 years	228	59	97
Education Bachelor's degree	204	53	44

Considering the suitability of Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity sig, data were suitable for factor analysis. Based on these two tests, data are suitable for factor analysis when the KMO index is greater than 0.6 and close to 1, and Bartlett's test significance level is less than 0.05. If the value of this statistic is more than 0.7, the correlations are suitable for factor analysis. If it is between 0.5 and 0.69, it must be treated with caution, and if is less than 0.5, it is not suitable for factor analysis (Table 2).

Table 2: KMO index and Bartlett's sphericity test result

Index	Suitable value	Obtained value
KMO	>0.7	0.763
Bartlett's significance level	<0.05	0.000
Test result		Suitable

According to the LISREL output, the obtained fit index is suitable, and all the values and load factors are greater than 0.3, which is acceptable and desirable (Figure 1).

In the structural equation modeling, all the value and load factor are greater than 0.3, which is acceptable and desirable (Figure 2).

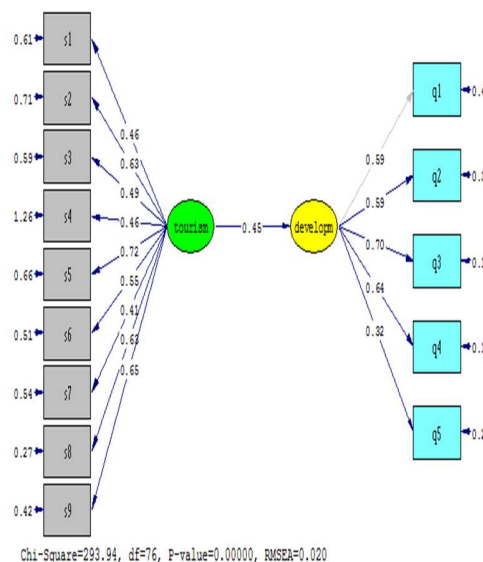


Figure 1: Standard factor loads of the structural model

Results of the above table shows that research model have suitable fit indices, and root mean square error of approximation, whose acceptable range is <0.5, is very good (0.090). Thus, according to all indices and considering the calculated fitness indices, it can be concluded that the research model has an appropriate goodness of fit (Table 3).

According to the t-test, all value of the t statistic, i.e., the significance of the correlations observed, is greater than 1.96, which is acceptable (Figure 2).

Table 3: Fit indices of the model

Fit index	χ^2/df	SRMR	RMSEA	GFI	AGFI	NFI	CFI	IFI
Fit index for the Research model	3.8	0.03	0.09	0.94	0.92	0.96	0.95	0.72
Acceptable range	1-5	>0.05	>0.5	>0.9	>0.9	>0.9	>0.9	0-1

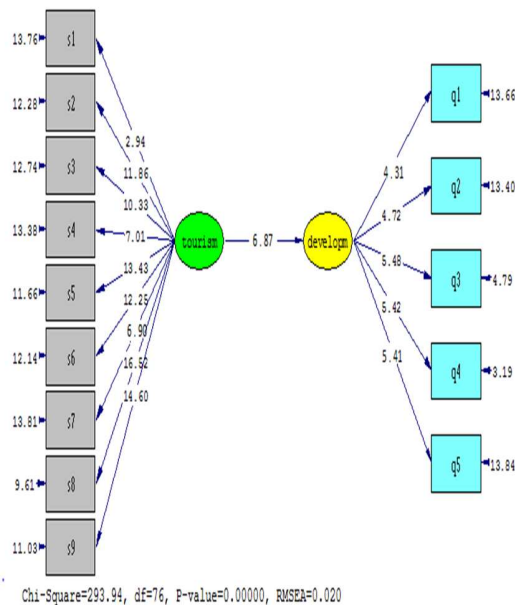


Figure 2: Load factor of the t-value statistic in the structural model

DISCUSSION AND CONCLUSION

It was first mentioned in the inferential statistics that according to the KMO index, sample size (number of respondents) is sufficient for analysis. Bartlett's test significance level also showed that the factor analysis is suitable for identifying the appropriate factor model structure. According to the figures corresponding to structural equation model, the influence factor, which includes the impact of medical tourism on the development of Iran, was confirmed similar to other relevant studies. LISREL outputs showed a suitable fit index value, and all values and load factors were acceptable and desirable. Therefore, items and dimensions related to the independent variables (medical tourism) and dependent variables (development) properly cover the variables and are valid. Results showed that the model has suitable fitting parameters. Impact of medical tourism on the development was presented based on the structural equation model.

Goudarzi *et al.*, reported significant relationships between the price of medical services and tourism; quality of health care and tourism; culture; health and tourism resources, facilities and equipment, and ICT development of medical tourism in Shiraz [8]. Morowati-Sharifabadi and Asadi-Ardekani stated that up to date hospital

personnel information and relevancy of doctors' expertise with their duties are the most fundamental factors in the development of health tourism and should be emphasized [9]. According to Delgoshaei *et al.*, Iran is facing challenges in fundamental and medical infrastructures, efficient government support, a comprehensive plan for the development of medical tourism, participation and intersectoral coordination in macro and micro levels, prestigious international health service providers, and integrated promotion and marketing [10]. Our findings are consistent with those of the aforementioned studies, and no study with inconsistent findings was found. In addition, the development of medical tourism model for development of Iran was presented.

According to the findings, Iran is a country with pleasant climate and has all four seasons simultaneously in different areas. Moreover, this country has a favorable situation both in the operating conditions and in demand owing to its historical, religious, natural and cultural attractions, modern and equipped medical centers together with expert and internationally-renowned human resources especially for the countries in the region, suitable environment for Muslim countries, significant number of Iranians living abroad who are willing to be treated in Iran, high demand of patients in the region for life-saving, cosmetic, and unique treatments. From the strategic and competitive aspect, the most important advantage of Iran is its low medical costs compared to global and regional scale. Regarding the affiliated and support industries, Iran's only advantage is the availability of numerous medical university departments, which can provide professionals human resources. Considering the operating conditions and desirable demand, Iran has several advantages to become a leading country in medical tourism in the region; however, it needs development in the strategic and competitive aspects. It also should strengthen its back-up and support industries. Therefore, policymakers and authorities should address medical tourism in nation-wide planning to achieve development.

Considering the capabilities and potential of tourism, in order to develop tourism in Iran, a serious and fundamental care should be given to health tourism and tourism therapy. Through greater and more effective investment and pursuing long-term and comprehensive plans in

this field, Iran should pave the way for tourism and tourism development to be able to achieve a significant share in this area. Therefore, in order to develop this industry, it is necessary to clarify the price of health services and tourism, improve the quality of health services and tourism, promote the culture of tourism, utilize medical and tourism facilities and equipment with high technology and global standards and implement information technology in medical and tourism areas to be able to use this industry in terms of job creation and value-making for Iran.

Each research faces a number of limitations. Limitations of the present study include the unwillingness of some respondents and the lack of the literature similar to the subject of this research.

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