



## Factors Affecting Development of Medical Tourism Industry in West Azerbaijan Province of Iran

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### Abstract

**Background:** The market of medical tourism is considered as a revenue and competitive industry throughout the world, it is also regarded as a novel field of the advanced tourism. Therefore, most of the developing countries have focused on the medical tourism industry and they are planning for implementing it. In 2016, the present research was conducted with the main objective of designing a model for medical tourism development in West Azerbaijan province of Iran.

**Methods:** This study is a cross-sectional study. The statistical population consisted of 40 interviewees who were selected via targeted sampling. The scholar-made questionnaire and studies of the Ricafort and Kazemi were employed as the tools of collecting data. The PLS software was utilized for analyzing data.

**Results:** The results showed that two main factors, including hospital selection with an impact factor of 0.143 and West Azerbaijan province selection with impact factor of 0.466 had both direct and significant impact on development of medical tourism. The impact factor of all approaches on development of medical tourism was obtained positive and significant ( $P \leq 0.001$ ).

**Conclusions:** For development of medical tourism industry in West Azerbaijan province, attention to elements such as the appropriate conditions to attract medical tourism, according to political, legal, and regional economic development is effective.

**Keywords:** Tourism, Health tourism, Medical tourism.

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Medical tourism market, as a novel area of tourism, has been discussed as revenue and a competitive industry in the world.<sup>7</sup> In terms of macroeconomics, the utilization of economic advantages of Iran has attracted great attentions by governments.<sup>8</sup> It has been estimated that each medical tourists brings foreign exchange flow three times more than a non-medical tourist.<sup>9</sup> An increasing competition has been initiated among developing Asian countries to attract medical tourists.<sup>10,11</sup> Referring to the World tourism Organization, Iran's rank is 66 among 188 countries in terms of foreign tourism income in 2012, which is foreseen to raise to 61 in 2020.<sup>12,13</sup> According to the latest data published by WHO, this type of tourism has an annual growth rate of 33% of which 60% has been reported from France, Italy, Germany, Turkey and Hungary.<sup>14</sup> Presently, considering active outstanding specialized and fellowship medical centers especially in Northwest of Tabriz and Orumieh, the region's share is negligible. Nevertheless, because of different potentials available in West Azerbaijan province regions especially in the field of tourist attraction, medical tourist attraction does not presently look desirable.

Numerous studies indicate that quality, cost, and quick access to the services are of the determinant factors in medical tourism.<sup>15,16,17</sup> Given these factors and the strategic geographic location of the region, a brilliant long background of traditional Iranian medicine, proficient, and reputable doctors in different disciplines and also inexpensiveness of the healthcare services can totally convert the region into a treatment zone for the country.

The geographic location of the region (neighboring with the Nakhchivan Republic, Azerbaijan Republic, Turkey, and Iraq) can lead to attraction of thousands of tourist-patients to the healthcare centers. Diagnostic and treatment centers along with advanced hospitals, equipped with upgraded modern technologies, proficient doctors, and specialized experienced treatment teams, providing specialized surgical operations as well as cardiovascular specialist, neurologist, heart transplant specialist, nephrologists, bone marrow specialist, reconstructive surgery and cosmetic dermatology, dentistry services and advanced paraclinical diagnostic services conformed to the newest quality standards of the world and also lower relative costs in comparison with developed countries have paved convenient way to establish and develop medical tourism in this region.<sup>18,19</sup>

Tourism and visual attractions of the region are the other factors for the patients. Meanwhile, given the common religious attitudes and ethnicities of the neighboring countries and short distance of traveling, lower traveling and transportation

## Introduction

Tourism has drawn considerable attention since many years and centuries ago by human communities and has had a continuous dynamism owing to ecosocial needs.<sup>1</sup> At present, tourism industry is one of the biggest service industries in the world. Tourism, as an income and entrepreneurship source at a national level, can be concerned as a strategy for economic development.<sup>2</sup> Today, tourism is considerably taken into account in the socioeconomic development of countries for which economists have called it an "invisible export."<sup>3</sup> Health tourism and its subgroups are considered to be a different field of tourism for its potential competitive advantages. Health tourism means travel from one's home to another place organized to maintain, improve and re-access to the mental and physical health of the travelers.<sup>4</sup> Health tourism includes medical, and preventive tourism.<sup>5,6</sup> Reference to the study title, the present study will highlight medical tourism.

costs are incurred by the patients, which is inherently an outstanding advantage.

A number of 200–300 health tourists travel to Iran per year upon which 200–500 million dollars can be earned for the country. Meanwhile, neighboring with Turkey, Nakhchivan Republic and Iraq, West Azerbaijan has hosted about 2200 health tourists during the past year (2015), and provided healthcare services to those who were mostly referred to the private hospitals, i.e., Taking account these sufficient potentials, West Azerbaijan province can bring a considerable income for the province and the country by adequate investment on medical tourism. Having concerned undesired conditions of medical tourism in West Azerbaijan province and lack of meeting the mentioned goals, this study was conducted to design a practical model for organizing medical tourism which could lead to develop the industry within the region aiming as an inflection point in tourism industry of the country and Iran can increase its share in this market.

## Materials and Methods

The present study was conducted to provide a model for development of medical tourism industry in West Azerbaijan province in 2016. The study is descriptive-analytical in terms of purpose and applicable in terms of results. Given the assumptions and approaches in medical tourism industry, in this study, the authors were seeking to apply the assumptions for a new location (West Azerbaijan province) and provide the proposed model.

The statistical population of the study included 40 interviewees selected via targeted sampling method. The population contained healthcare centers experts of the province towns, directors of cultural heritage, handicrafts and tourism organizations of the province towns, deputy officials and experts of general organization of cultural heritage, handicrafts and tourism of the province, assistant of healthcare, and expert of health tourism of healthcare deputy of the province, experienced professors in the field of tourism, healthcare centers experts acting in medical tourism, clerks of travel agencies and medical tourism experts of specialized companies. The questionnaires were developed from expert participants who answered voluntarily, and incompletely collected questionnaires were not used for data analysis.

Smith and Forgeen's studies were used for the theoretical fundamentals of the study.<sup>20</sup> According to Smith and Forgeen, a model is been provided for the patient decision making to seek the healthcare services out of their home country. A group of factors affecting the selection of the destination country were determined and the other factors provided affecting the selection of an appropriate health care center. They discussed that particular properties of a country such as economic, political conditions, and legal terms affected the selection of the country, while factors like costs, hospital budget allocation, quality of healthcare services and staff training would influence selection of a good healthcare center. In this study, general status of medical tourist attraction and cultural conditions or public infrastructures added to the factors affecting the destination country and inter-ward relations, technology and communication and also advertising were then added to the factors determining the hospital selection.

To develop a theoretical framework of library studies and the Internet were used. In this section, the study authors could collect the required data for the concepts, models and the relevant theories via references like literature, journals, information banks such as SID, Iran Medex, ProQuest, PubMed, Science Direct.<sup>21-23</sup> In addition, documentaries available in related organizations like Medical Science University of Orumieh, healthcare networks of the towns, general organization of cultural heritage and tourism and the subordinated offices in towns were also used.

The second phase was to prepare a questionnaire. The questionnaire was designed author-oriented and study of Rikafort and Kazemi was also referred.<sup>24,25</sup> In the first part of the questionnaire, the items were related to personal information of experts (age, gender, education, work experience correspondent to medical tourism, type of work experience, work place) and the second part of the questionnaire included 67 items of which 29 were for measuring the factors affecting hospital selection in the province, 25 items related to measurement of factors affecting the selection of Azerbaijan province, and 13 items were assigned to measure medical tourism development.

The study questionnaire context validity was confirmed via perspectives of experts, consultant professors after some modifications. The structure validity conducted through factor analysis.

In order to assess and measure the questionnaire stability, 10 participants were chosen randomly in a pilot approach and the questionnaires were distributed among them. Alpha-Chronbach coefficient was used to analyze data after completion of the questionnaire. Alpha-Chronbach coefficient was obtained 0.916 and 0.907 for the hospital and province questionnaire, respectively. The obtained results verified the high stability of the questionnaires. The data collected were analyzed using descriptive and inferential statistics. First, descriptive, using descriptive statistics such as frequency distribution tables and charts, demographic characteristics of subjects were evaluated. Then in the inferential statistical tests related to exploratory factor analysis (principal component analysis) to determine the components of this model (with SPSS), and to model structural equation modeling techniques were used by the smart PLS software.

## Results

The study results revealed that most participant male experts (75%), among age groups were aged 35–39 (28%) and had an M.S. educational degree (45%). Most individuals had a work experience of 10–14 years related to medical tourism (42.5%) and had been working in executive (40%) or staff (40%) posts. A great number of participants worked at different departments of treatment deputy of healthcare network of the province (40%).

In present study, all the items had the factor load over 0.5. Values of, AVE and Alpha-Chronbach coefficient of each variable of the study are shown in table.1. The results support the sufficient validity of the variables.

**Table 1. Assessment of variable validity of selecting hospitals of west Azerbaijan province**

	$\rho C$	AVE	$\alpha$
Inter-wards relations	0.98	0.91	0.98
Care quality	0.92	0.76	0.89
Budget allocation	0.94	0.89	0.88
Costs	0.98	0.97	0.97
Healthcare staff training	0.91	0.59	0.88
Technology	0.87	0.55	0.84
Advertising	0.78	0.55	0.76
Legal terms	0.95	0.8	0.94
Economic conditions	0.99	0.99	0.99
Political conditions	0.92	0.65	0.91
Cultural conditions	0.89	0.53	0.85
General conditions of tourist attraction	0.93	0.52	0.92
Public infrastructure	0.96	0.93	0.92
Tourism development	0.86	0.53	0.8

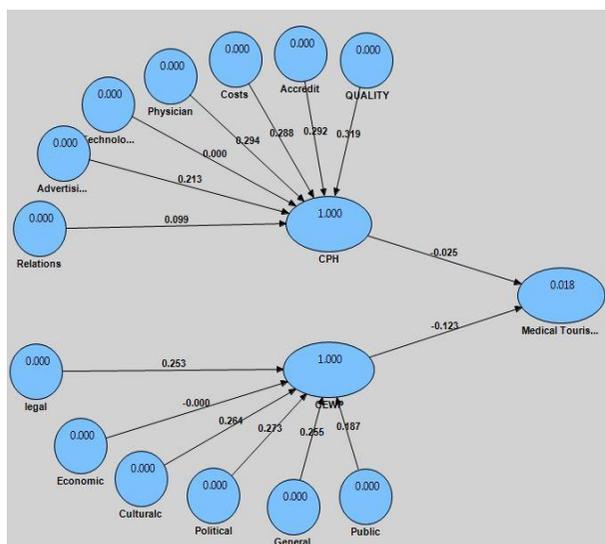
The results obtained from exploratory factor analysis of selecting hospital variable of West Azerbaijan province by the principal components (KMO=0.87, Bartlet=7168.90, P<0.01) suggested the appropriate sufficiency of the data and fitness of the proposed model, such that it was indicated that after Varimax rotation 7 factors had a special validity >1 and the variance cover percent common between the items for these 7 factors verified 81.453% of the total variance of the variables. In brief, seven components defined by exploratory factor analysis on 29 items and elimination of q17 and q20. According to the study title, the first factor named interward relations (5 items), second item called care quality (6 items), the third item called advertising (6 items), the fourth factor called medical personnel training (4 items), the fifth factor called costs (2 items), the sixth factor called technology and communication (2 items) and the seventh factor called budget allocation (2 items).

Exploratory factor analysis for variable of west Azerbaijan selection in principal component approach (KMO=0.84, Bartlett's=5961.90, P<0.01), support sufficiency of data and fitness of the proposed factor model, meanwhile, it was

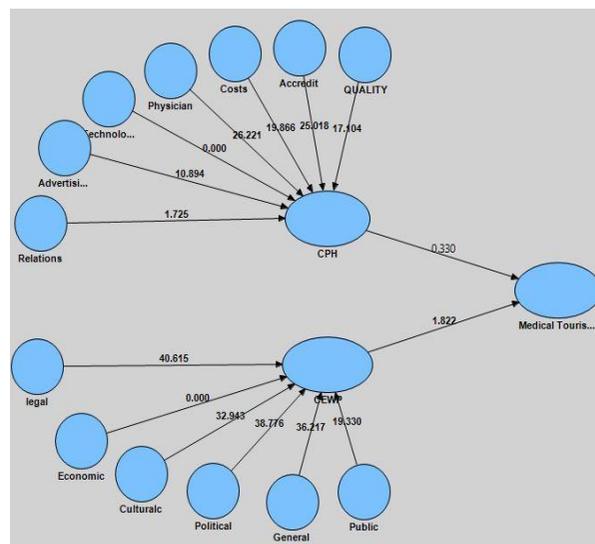
indicated after Varimax rotation that 6 factors had a special validity>1 and the variance cover percentage common between the items for these 7 factors verified 79.92% of the total variables variance. In brief, having conducted the exploratory factor analysis on 25 items of the questionnaire and elimination of items p1, p6, p14, six components were identified and referring to the title, the first factor called public infrastructure (5 items), the second factor called general conditions to attract the tourists (6 items), the third factor called legal terms (4 items), the fourth factor called political conditions (3 items), the fifth factor called economic conditions (2 items) and the sixth factor called cultural conditions (2 items).

The obtained results showed that in the field of medical tourism 31.5% of the changes was occurred by variations of two variables of the hospital and West Azerbaijan province selection prediction. The results also suggest that all the approach coefficients effectiveness on medical tourism was positive and significant (P≤0.01) (table 2). in addition, two main components of the hospital selection (effectiveness coefficient=0.14) and West Azerbaijan province selection (effectiveness coefficient 0.47) directly and significantly affected the tourism development in the province and it was revealed that a factor like technology (0.25) had the most effective direct impact on hospital selection among factors affecting hospital selection ad general conditions of tourist attraction (0.26) was the most effective factor on West Azerbaijan province selection among those affecting the selection of West Azerbaijan province selection.

The PLS software obtained results reflects that all the study hypothesizes confirmed (Figure 2) and also in the study conducted for the tested model, GOF was obtained 0.63 which showed effectiveness coefficient of all approaches on medical tourism development was significant and positive. (Table 3)



**Figure 1. Measurement of the general model and the hypothesis results under standard norms**



**Figure 2. Measurement of general model and hypothesis results under significant norms**

**Table 2. According to the PLS software and hypothesis test results**

Hypothesis	Standard	Significance	Result
Curing quality has a positive significant effect on medical tourism development	0.17	6.46	Confirm
Budget allocation has a positive significant effect on medical tourism development	0.19	8.13	Confirm
Costs have a positive significant effect on medical tourism development	0.21	11.31	Confirm
Healthcare staff training has a positive significant effect on medical tourism development	0.24	10.63	Confirm
Technology and communication has a positive significant effect on medical tourism development	0.25	12.41	Confirm
Advertising has a positive significant effect on medical tourism development	0.23	10.45	Confirm
Inter-ward relations has a positive significant effect on medical tourism development	0.2	8.25	Confirm
Legal terms has a positive significant effect on medical tourism development	0.22	12.98	Confirm
Economic conditions has a positive significant effect on medical tourism development	0.2	12.82	Confirm
Cultural conditions has a positive significant effect on medical tourism development	0.21	12.11	Confirm
Political conditions has a positive significant effect on medical tourism development	0.24	14.06	Confirm
General conditions of tourist attraction has a positive significant effect on medical tourism development	0.26	14.92	Confirm
Public infrastructure has a positive significant effect on medical tourism development	0.21	10.06	Confirm

**Table 3. GOF Index– estimation of Redundancy and share**

	Share index	Redundancy index	GOF index
Factors determining selection of the hospitals in the province	0.426555	0.322575	
Factors determining selection of west Azerbaijan province	0.384674	0.167885	0.63
Medical tourism development	0.776477	0.066798	

## Discussion

The results showed that the impact factor of all direction on the development of medical tourism in West Azerbaijan province was positive and significant ( $P \geq 0.001$ ). Furthermore, two main components; hospital selection (effectiveness coefficient=0.14) and West Azerbaijan province selection (effectiveness coefficient=0.47) directly and significantly affected the province medical tourism development, while as, technology (0.25) was the most effective factor amongst those affecting hospital selection and general conditions of tourist attraction (0.26) was the most effective factor for selecting West Azerbaijan province amongst those influencing the province as medical tourism destination.

The project results also reflects that staff training, service quality, budget allocation to the hospitals, costs of the provided services, inter-ward relations, technology and advertising strongly influence medical tourism which is in accordance with the results of Nasiripour, Izadi<sup>18,26</sup> supporting the operation of high-tech medical equipment conformed to international standards, and also inexpensiveness of healthcare services (competitiveness) against other countries and clarifying the requested costs for the foreign patients. Moreover skill, proficiency, and personnel training are of the most important elements for foreign patient's attraction whilst leading to medical tourism development.

At the present study, advertising, as an effective factor in selecting hospital had a significant positive relation with the province tourism industry development which supported the results of Monika and Ayoubian.<sup>27,28</sup> It means that out of border media advertising for the country capabilities and potentials in the field of healthcare services, doctors, technology, and service quality could result in tourist attraction. Moreover, there was only a significant relation between media advertising and health tourist attraction amongst the informative mechanism variables and other variables as well as brochures, Instruction guides, television programs, and electronic approaches had no effective role in health tourism attraction<sup>29</sup> which is in accordance with the present study results.

In this study the quality of healthcare services had a positive and significant effect on medical tourism development such that influencing factors like reputable doctors, high – tech equipment, rapid and outstanding care services, lower waiting time, good behavior of treatment teams and access to the interpreters during the reception process, hospitalization and further initiations for treatment, had an outstanding impact on health tourism development within the province which conform to the findings of Nasiripour et.al study<sup>30</sup> which pointed out that doctors, nurse and healthcare services staff should have international work experience, take relevant training courses and speak English. Furthermore, having significant relation between high-tech equipment and tourism development in the province, hospitals can play an important role in tourist attraction from neighboring countries via high tech modern standard devices in an international class, the results of which were confirmed by Nasiripour and Kazemi.<sup>24,30</sup> Besides, the study of Davy Rajarat results revealed that the curative service quality had a positive impact on tourists satisfaction<sup>31</sup> which was in accordance with the present study results.

The study results of Elinora Sernikowit also showed that the most effective factors on health tourist attraction in Lithuania included rapid and outstanding services, high tech equipment and lower costs for healthcare services. A comparison of analyzing medical tourists' expectations between Lithuania and Thailand also suggested that Lithuania had the most attractive medical tourism. While Thailand is mostly selected by tourists for its strong constructive advertising,<sup>32</sup> high quality services and inexpensiveness influenced the recommendation for tourists attraction toward Lithuania which also supported the present study results.

According to the international journal of medical tourism, fam, Jones et.al, the key elements for attraction of medical tourists included service high quality, lower costs and missing of waiting list.<sup>33,34,35</sup> In addition, in the studies conducted by Khodayari, Masoudi Asl et.al, and Lajouski, it was also confirmed that capability to attract medical tourists at the international market class, depended upon the guaranteed

service quality and achieve to the international standards as well as JCI<sup>36,37,38</sup> which conformed to the present study results.

In this study the cost of provided services had a positive significant impact on medical tourism development which supports the study results of Nasiriour et.al. In which high medical service costs cause seeking for treatment at developing or less developed countries.<sup>26</sup> Jabbari study results suggest that treatment intervention costs are lower in Iran than that in other neighboring countries; however there is no insurance services for medical tourism in Iran.<sup>39</sup>

In a study conducted by Shalbfafian, a number of factors has been asserted for tourist attraction in Iran; like legislative facilities for medical visa issuance, supervision of ministry of health, budget allocation to healthcare centers, defined healthcare services tariffs, accessibility to recreation centers beside healthcare centers, training courses for staff, direct services of health and tourism department and informative internet portals.<sup>40</sup> Nasiripour et.al study findings also revealed that improvement of healthcare services through modern technologies and information advances have already come over the traditional limits like physical, regional, economical and chronologic<sup>24</sup> which support the present study results.

The study results also indicated that regulations and laws, political, cultural, economical and tourist attraction general conditions in addition to the public infrastructure status played an effective role on medical tourism development which was in accordance with the study of Izadi et.al suggesting that Iran owns proper natural, historical, religious and cultural opportunities with modern healthcare centers and qualified staff, and a world class reputation.<sup>18</sup> In this study, West Azerbaijan province is considered as a potential region for medical tourist attraction due to its religious, cultural, political and traditional custom potentials. Gonzales expresses in his study that feasibility of legal terms to ensure the consumer rights retention and also high quality healthcare services are considered as the vital factors for medical tourism development.<sup>41</sup>

Porter et.al pointed out the necessity of establishment of a particular insurance system for medical tourists in health tourism development of Filipina.<sup>42</sup>

In a study conducted by Kazemi titled: "tourism attraction strategies" the author stresses elements like collaboration between sections in macro and operational levels, human resource development, public and health infrastructure development, international credit achieving for healthcare centers in tourism and health section and finally effective advertising, for tourism industry development in Iran<sup>24</sup> which is in accordance with the results of this study.

In the study of Shalbfafian, the author categorizes the strategies of medical tourism development into executive-administrative, legal, political, promotional approaches. In this study, legal terms, political, economical, cultural, tourist attraction and public infrastructure status are cited as the key factors of province selection for tourist industry development.<sup>40</sup>

In the study of Sadrmomtaz and Aqarahimi, development strategies of medical tourism industry in Iran were discussed. In this study a significant relation between Iran tourism

development and the effective indices of development could be observed. Moreover, the most effective factors on tourism industry development in managers' points of view were public infrastructure development, human resource, informative systems, marketing and product development strategies, respectively<sup>43</sup> which was also in accordance with the current study results.

A study conducted by Harasheh, titled "Natural medical tourism in Jordan: the potentials of development" suggests that the biggest barriers on the way of this industry development are the new establishing and missing of a specified marketing strategy and also lack of the officials' attentions to the value of health tourism influences.<sup>44</sup> Thereby, regarding to Harasheh, Rahmani and Tourani obtained results, tourism industry development goals can be achieved through public infrastructure and marketing development.<sup>44,45,46</sup>

Ari Rawagan study results also reflect that Kuala Lumpur travel attitudes play an important role on tourist satisfaction. Also, there is a relationship between the travel and tourism features and tourist satisfaction. Correct understanding of the destination country, marketing developers can plan for their market part and their effective strategies. Further, this will enable them to act for development of new products, services and particular strategies for different groups<sup>47</sup> which is in addition conformed to the present study findings.

Rokni et.al study results showed that hospitals providing services to tourists in Shiraz receipt at least 15-50 patients monthly and common religious and cultural attitudes or Iranian doctors reputation could have played a vital role on medical tourist attraction<sup>48</sup> which was also in accordance with the present findings.

The study results of Abdollah Savar revealed that competitive and quality advantages of healthcare services were two influencing factors on medical tourist attraction to Malaysia. Therefore, Malaysia needs successful medical / healthcare advertising for tourist attraction.<sup>49</sup> This study could provide an approach to develop medical tourism in Malaysia which also supported the present study results.

Paying more attention to the above mentioned findings obtained from data analysis section, considerable subjects prioritized in professional experts points of view without desired status include the following:

- 1- Missing of suitable conditions for medical tourist attraction to the province, in general.
- 2- Regional conflicts in some origin countries
- 3- Political critics in neighboring countries like Iraq, Turkey and its impacts on this province
- 4- Failure of integrated informative management systems
- 5- Unknown costs of services, particularly in private sector hospitals
- 6- Insufficient fluency in foreign languages (especially medical staff of the hospitals)

7- Weak function of public hospitals in the field of medical tourism in the province

8- Insufficient marketing organizations or their weakness

9- Inefficiency of inter- ward relations or suitable coordination between them in relevant institutions

10- Deficiency of proper budget allocation to the hospitals

11- Inefficient quantity and quality of tourism services in some hospitals of the province

Having considered the proposed model which includes effective factors on province selection as well as improvement of regulations, economic, political, general conditions of tourist attraction and public infrastructure and also hospital selection variables as well as budget allocation, cost reduction, healthcare staff training, technology and communication, advertising and inter-ward relations, the model can be used in codifying constructive strategies. Therefore, positive affecting factors on the province tourism development could be counted as: establishment of an efficient system for general tourist attraction, attention to political, legal terms and economical status of the region and West Azerbaijan province may provide the best healthcare services to the patients from neighboring countries seeking for health and life quality utilizing modern advanced hospitals with proficient staff.

According to the present study findings, in order to increase West Azerbaijan province share in medical tourism development, the following suggestions are proposed: For development of medical tourism industry in West Azerbaijan province, attention to elements such as the appropriate conditions to attract medical tourism, according to political, legal and tourism regional economic development is effective.

## Conflict of Interest

The authors declared that they have no conflict of interest.

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