

# Assessment of the impact of tourism attractions with an emphasis on economic and environmental sustainable: A case study in Isfahan

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## Abstract

**Background:** Tourism is an industry whose development requires knowledge and enough understanding of the issues and factors affecting the economy, culture, and environment. This study aimed to identify the impact of tourist attractions in the county of Tiran and Karvan, Isfahan, to increase the economic, cultural, and environmental benefits of tourism development; it would be possible to minimize its negative impacts.

**Methods:** This is a descriptive-analytic study that was conducted using a standard questionnaire in 2013. In this study, 400 tourists, 400 native people, and 50 experts in tourist places in the country of Tiran and Karvan, Isfahan, were included using a randomized sampling method. Data were analyzed using SPSS version 20.

**Results:** The region's most potential tourist attractions are suitable natural attractions and recreational attractions, and the climate of the region with an average temperature of 5 °C. The tourists' satisfaction rate with the tourism facilities and equipment of the county was at a low level. The role of tourism is effective in creating jobs and increasing the income of residents of the region.

**Conclusion:** The creation of employment grounds including increasing the income level of indigenous families, organizations related to tourism activities, and institutionalization of the culture of environmental protection are the most important economic, socio-cultural, and environmental impacts of tourism in this area. The most important factor in the weaknesses in the lack of development of country tourism was the lack of management and planning.

**Keywords:** Conservation of natural resources, Tourism, Surveys and questionnaires, Tiran and Karvan, Iran

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## Introduction

Tourism is a powerful force for economic change in developed and developing countries. The role of tourism in the economic development of cities and the acquisition of multiple benefits in each region is globally well-known (1). Tourism development, especially in the least-developed countries, is an effective factor in dealing with the poor and involves increasing the incomes of various sectors, reducing unemployment and economic prosperity, and, as a result, improving the quality of life of people and increasing social welfare. Studies show that the income derived from tourism activities has

been effective in regulating the balance of payments of many countries, especially the least developed countries, which are usually related to a product (2). Sustainable tourism provides logical methods for exploiting natural and human resources and prevents damage to resources (3). Sustainable development is the management and protection of the natural resources base and directing to technological and institutional changes so that the fulfillment of the needs of present and future generations of the people is constantly provided and guaranteed. The main topic of sustainable tourism is the negative effects of tourism on the environment that can be reduced by



controlling external factors (4). What has addressed the issue of sustainable tourism has been the needs that citizens and urbanists face today, including apartment life, urban disaster and urban sprawl, the expansion of second homes, spacing around the city and rural areas, the use of natural benefits, the creation of employment grounds, the creation of income and the return of value added to rural areas and around cities, the creation and design of attractive spaces emphasizing changes and developments in the communities and individuals, and the needs of the present age (5). The economic effects of tourism globally affect more than other important sectors, including automotive, mining, and chemical (6). In 2023, the Travel and Tourism sector contributed 9.1% to the global GDP; indicating an increase of 23.2% from 2022 and only 4.1% below the 2019 level (7). In 2013, the economic contribution of global tourism was nearly \$7 trillion (8). Growth in the tourism economy in Asia, Pacific, Europe, and the Americas has grown considerably in 2011 and 2012 (9). In 2012, about 232.9 million international tourist passengers were reported (10). The direct contribution of tourism to South East Asian GDP is expected to increase from more than \$94 billion in 2011 to \$173 billion in 2022 (6-8). The tourism industry in Iran also has a high potential for development. According to the World Tourism Organization report, among other countries, Iran is ranked among the first 10 in terms of archaeological and historical attractions, and among the world's first five countries in terms of natural attractions (11). Tourist attractions are a key element in each region. In addition to natural and man-made attractions, what is effective in improving locations due to international competition increasingly in attracting visitors is to spend on the infrastructure of the tourism system such as accommodation, transportation, and sub-services (12). How sustainable tourism development can change the environment. How sustainable tourism development can change the environment without harm Several researchers have explored the study of socio-cultural effects methods related to tourism on the environment and tourism economics of the United Kingdom and France, and believe that identification of the consequences of tourism development is essential to prevent damage to the environment (13). Some researchers focus on the environmental impacts of tourism. Reports have shown that in various regions of the world, tourism has had negative impacts on the region's environment, up to 80%. Tourism development depends on access to land for the construction of accommodation and services for tourists, and tourism has caused a change in the use of produced agricultural lands worldwide by 0.5% (14,15). Some studies have shown that tourism has not been able to play an effective role in the stable economic situation of the local people, however, it has had a greater impact on other aspects, including social and environmental

issues (16). With scientific and specialized management, the tourism industry can be a driving factor of economic growth and employment in Iran (17). Isfahan Province is one of the main areas of tourism in Iran. The county of Tiran and Karvan in the west of Isfahan province has a great and significant potential and capacity in this field (18). This county due to its various attractions is a suitable hospital for the development of the tourism industry. So, if you have a proper and principled planning for tourism development in this region, this industry can be a driving force for the dynamics of the region's economy by maintaining a sustainable environment. In this regard, the identification of tourism potentials and attractiveness and their role in the economy and environment and determining the most important factors of the lack of development of this type of tourism is an inevitable necessity of the objectives of this study.

### Materials and Methods

This is a descriptive-analytic study that was conducted using a standard questionnaire in 2013. In this study, 400 tourists, 400 native people, and 50 experts in tourist places in the country of Tiran and Karvan were included using a random sampling method. The questionnaire is of open and closed type and the Likert scale was used to prioritize and score the answers. It has validity and reliability, and Cronbach's alpha of experts, tourists, and local residents was 0.8 and 0.82, respectively. The questionnaire included the views of the respondents about the potential of suitable natural and recreational attractions and the climate of the region, the way people deal with tourists, the tourists' views about the situation and the level of environmental relaxation, the talents necessary for investment and satisfaction from the security of the region and the existence of handmade industry. Also, the effects of tourism flourishing in creating the diversification of economic activities, the welfare and quality of life of the indigenous people of the county, the reduction of unemployment and the creation of employment, the improvement of infrastructure and accommodation facilities, the expansion of service occupations, the negative effects on the environment, the increase of local community awareness regarding the protection of the environment, the negative effect on the area's wildlife, the debris of rubbish and the increase of insects and rodents and the transmission of diseases, degradation of vegetation, and the occurrence of environmental health problems were questioned. Chi-square and t-test were used to analyze the data.

### Results

The results of the study showed that there are a total of 48 tourist attractions in the county of Tiran and Karvan that can be visited by tourists, of these, 56% belonged to natural attractions, and 36% were related to the historical-

cultural attractions, and the rest of the human-made attractions (Table 1). The results of the study showed that a total of respondents reported that the most potential has been suitable natural and recreational attractions and the climate of the region with a mean of 5, and the manner of dealing with people, the calm environment, and the necessary talents for investment with an average of 4.6, and the least potential security of the region and the existence of manual industries with an average of 4.5. The satisfaction rate of tourists in the region using t-test (2.01), shows that the level of satisfaction with the tourism facilities and equipment of the county is low. The study showed that the tourism boom has caused the diversification of the county's economic activities, increased the welfare and quality of life of the indigenous people, reduced unemployment and created employment, improved infrastructures and facilities, expanded service occupations, and expanded accommodation facilities such as hotels and lodging house. The study showed that tourism prosperity could have negative effects on the environment. Tourism also has increased the awareness of the local community about environmental protection, causing water contamination, negative effects on the wildlife of the region, debris and breeding carriers and carrier rodents and reservoir rodents' diseases, degradation of vegetation, and environmental health problems. Table 2 shows the results of the Chi-squared

test, and the opinion of experts, tourists, and local people.

**Discussion**

The results of the study indicate that local residents, tourists, and experts are satisfied with the opportunities created in the field of tourism in this region, including employment creation, increased welfare and income. However, due to the lack of infrastructure and amenities, they are less satisfied. According to the respondents of our study, the tourist attractions of the region have completely attracted them and satisfied them. The results of the present study are consistent with those of other studies (16,17). The desire for sightseeing and travel has increased with the expansion of urban centers and the growth of the urbanization phenomenon. Satisfaction of tourists and how to provide services to them are the most important priorities of this industry which by proper and efficient management, it will improve the economic situation of the indigenous people and create new businesses. On the other hand, by providing adequate income, the status of tourist attractions can be catered for and thereby become sustainable (19-21). But one of the disadvantages of tourism is the increase in the production of solid municipal waste, which is one of the most important environmental issues in Iran and imposes significant costs on urban management. Our study showed that the tourism boom could have negative impacts on the environment, also tourism has increased the awareness of the local community about environmental protection, causes water pollution, negative impacts on the region's wildlife, debris and insect breeding, carrier and reservoir of rodents' diseases, and degradation of vegetation and environmental health problems. Garbage can cause many problems in the spread of infectious diseases. Because it

**Table 1.** Frequency distribution of tourist attractions of Tiran and Karvan County according to type

Attractions	Frequency	Percent
Natural	30	56
Historical-cultural	11	36
Man-made	7	8

**Table 2.** Frequency distribution of tourist attractions, its potentials and negative effects in Tiran and Karvan county, and the chi-square test results

Groups Measurable Questions	Tourists and Local Residents		Experts	
	Avg	Chi-squared Test	Avg	Chi-squared Test
There is a relationship between tourism and the prosperity of economic development.	4.09	0.00	4	0.006
The tourism boom has increased the welfare and quality of life of the indigenous people of the city.	4.1	0.00	4.08	0.006
Tourism has reduced unemployment and increased employment the city.	4	0.00	4.08	0.006
Tourism has improved infrastructure and facilities in the city.	3.5	0.00	3.9	0.006
The tourism boom in the region has led to the expansion of service occupations.	4.2	0.00	4.4	0.01
Tourism in the area has expanded to include accommodation facilities such as hotels, hotels, etc.	4.5	0.00	4.8	0.00
The tourism boom has increased local awareness about environmental protection.	3.56	0.00	3.1	0.001
The tourist boom in the region has caused water pollution.	3.23	0.00	3.9	0.006
The tourism boom in the region has had a negative effect on the region's wildlife.	3.4	0.00	3.24	0.001
The tourism boom in the region has caused an increase in waste and the proliferation of more insects and rodents as vector and reservoir of diseases..	4.55	0.00	3.94	0.002
The tourism boom in the region has caused vegetation to degrade.	3.78	0.00	3.99	0.001
The tourism boom in the region has caused environmental health problems.	3.6	0.00	3.37	0.00

is a good source of nutrition for carriers of diseases, they are involved in the process of producing waste to preserve the burial of all kinds of animals used as food sources (22). Garbage is one of the most important substances that, if not collected correctly and timely, catch arthropods and vectors insects, and is a good source of nutrition that can be used for the propagation of mice and sandflies (23). Garbage can also cause an increase in house flies. Apart from arthropods, garbage can also attract important animals such as mice, which alone can cause the spread of various zoonotic diseases or direct damage (22). All of this is due to the production of waste and the lack of proper management that results from an increase in the arrival of the tourist population. One of the important challenges of waste management is the quantitative and qualitative seasonal changes in tourist areas. These seasonal changes are mainly due to changes in the tourist population, followed by the amount of waste generated, which causes many problems in the process of municipal solid waste management. These seasonal variations have been more seen particularly in the tourist destinations of Iran. For this purpose, various studies have been conducted to determine the status of waste management in different parts of the world, including in Europe (24,25), Ukraine (26), and Istanbul in Turkey, and also, in Iran such as the Coastal area of Gilan province (27) and coastal areas of Mazandaran province (28).

### Conclusion

Tourism attractions in the county of Tiran and Karvan, one of the western cities of Isfahan province, can be effective in boosting economic prosperity. Indigenous people welcome this industry, but they believe that damage to the environment may occur if not properly managed, so accurate and regular planning can increase the income level of the people while minimizing the damage to the environment. To increase the tourism coefficient of the county, Tiran and Karvan county, it is essential to address integrated management matters and coherent planning. Providing equipment and infrastructure facilities, planning, management, and investment in the development of tourism in Tiran and Karvan can increase the level of welfare of the people. It can be concluded that local residents, tourists, and experts are satisfied with the opportunities created in the field of tourism in this region, including employment creation, as well as increased welfare and income. Although tourists are less satisfied with the lack of infrastructure and amenities of the region, they are satisfied with the tourist attractions of the region. The results of the present study are consistent with those of other studies. Employing experts and providing facilities and tourism services in this area can make this industry flourish.

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### Authors' contributions

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### Competing interests

The authors declare that they have no competing interests.

### Ethical issues

The data presented in this manuscript are original and collected during the entire period of study. No data have been published or never will be published again.

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