# Ranking Tourism Attractions Based on Potential to Attract Tourists by Using Numerical Taxonomy Model (Case: City of Khoy)

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**Abstract:** Today, tourism industry is counted as one of the largest and most diverse industries in the world so that it is a major source of foreign exchange earnings, employment, creating social justice, cultural growth, welfare increase, and a field for private sector growth and a tool for infrastructure development. Having diverse natural and human tourism attractions, city of Khoy is one of the main destinations of tourists in Iran and Western Azerbaijnan province that attract many tourists annually. Given high tourism potential and diversity of attractions, it is important and inevitable to prioritize and identify tourism prone areas in this region. Thus, attractive tourism areas in this city have been prioritized in this research with descriptive-analytical method and by using numerical Taxonomy model. According to the results, Shams Tabrizi Tower in the city of Khoy has the greatest potential to attract tourists in the city. In contrast, despite Badlan waterfall and protected area of Marakan are pure natural attractions of city of Khoy with potential tourism power, in terms of attracting tourists, but lack of facilities, services and available infrastructure, and risk of natural hazards in these areas resulted in relative failure of these areas in attracting tourists.
**Keywords:** ranking, tourism attractions, city of Khoy, numerical Taxonomy
**JEL Classification:** R00, J83, L33, J17

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## 1- Introduction

Over the past half century, tourism activities have become widespread, and the number of passengers traveling with different motives is increasing every year. According to World Tourism Organization estimate, the total world tourists in the 1950s were approximately 25 million people and in 2000 it was about 700 million, which will reach 1.6 billion by 2020. These figures represent an increase of 7% over a 50-year period from 1950 to 2000, so, according to statistics and reports, the tourism industry is now becoming the largest and most profitable industry in the world accounting for 11 percent of gross domestic product, 10 percent of employment, 5 percent of exports, and 5 percent of global investment (Ghasemi et.al, 2016). The significant growth of tourism in the last 50 years indicates the economic and social significance of this phenomenon. Growing and accelerating tourism has caused many scholars call the 21st century as the tourism century (Imani et. al, 2015).

In this regard, the development of the tourism industry for developing countries, which face a series of problems of high unemployment, currency restraint and single-product economy, is of great importance (Khaksari & Abbasi, 2013). Iran, as a developing country with rich environmental resources and enjoying the historical-civilizational and cultural backbone, has a special ability to develop its tourism industry, but in terms of flourishing, this function has not been able to attract much attention (Mousavi et.al, 2015). According to the latest figures from Iran's Cultural Heritage and Tourism Organization in 2010, only 3,121,281 tourists arrived in the country and ranked 133th among 185 countries (Cultural Heritage and Tourism

Organization, 2011). However, according to the prospectus on Horizon 1404, tourist attraction in Iran should be 1.5% and its income grew by 2% and would attract 20 million tourists with a revenue of about $ 25 billion (Noori et.al, 2012). On the other hand, given that Iran is one of the countries with a single-product economy, relying heavily on revenues from crude oil exports, these conditions have caused macroeconomic variables follow the global price rises over time. Therefore, the liberation of oil is possible by increased export of industrial goods, agricultural products and planning for the development of activities such as tourism industry (Khaksari & Abbasi, 2013).

One of the major issues in tourism planning is to determine the status of this industry in a region and to identify different areas of natural, historical and biological aspects in different parts of a land (Jamrozy, 2007). Accordingly, in tourism planning, attempts to identify tourism areas, introducing prestigious tourist areas, assessing tourism areas, assessing prone areas of investment, striving for sustainable development of tourist areas and focusing on specific activities in these areas are considered. According to this approach, on the one hand, the susceptible areas should be identified and on the other hand, in the planning of tourism development, strategies and regulations should be set up that would respond to the needs of tourists and be consistent with sustainable development (Nelson & Botterill, 2002).

One of the areas that has many tourist attractions in the West Azerbaijan province and plays an important role in the development of the tourism industry is Khoy city. Due to its environmental situation and the existence of natural resources, human resources, historical and religious attractions, this city has the

potential and abundance of tourism development, which can be formulated through appropriate policies. The tourism industry is considered as the first effective step in poverty alleviation and economic development of the region. Also, since ranking or leveling is a method for measuring the development of regions and also determines the spatial, economic, social and cultural differences of the regions in terms of development, in this way, the process of formation of polar development of specific regions and finally, in developing planning, areas needing and less developed are determined (Taghvayi et.al, 2011); therefore, in this study, in order to identify inequalities between the regions, to strengthen the infrastructure, pay more attention to planners, make better use of tourists' time and better management of tourism attractions, using numerical taxonomy to rank the tourist areas of Khoy city have been addressed.

## 2- Literature Review
### a) Foreign Researches

The history of research in the field of tourism as a field of science dates back to almost two hundred years ago. The first book on tourism was "Tourism Guide." Since then, studies in the field of tourism have been divided into three main sections: first, studies of the recognition and introduction of places of interest, the second studies examine tourism and its impact, and finally, studies that argue the secondary tourism disciplines technically.

Williams (2000) concluded that all research in the field of tourism is limited to intra-regional description and analysis. He believes that with the importation of goods and economic relations, there are grounds for tourism growth. Tourism

development can also be used to change the patterns of migration, balance of money, optimal use of land and economic development.

McKercher (1993) explores the principles of sustainable tourism, including sustainable use of resources, reducing energy consumption and avoiding waste, preserving diversity, the tourism industry and planning, supporting the local economic system, participation of local communities, consulting with stakeholders and the public, crew education, tourism marketing, and ongoing research on tourism development.

Tyrväinen et. al, (2014) explored the intentions of tourists in northern Lapland, Finland, for the purpose of environmental preferences and tourist accommodation. In a survey of 1054 domestic and foreign tourists, respondents emphasized the relationship between residence and nature, green infrastructure, easy access to their place of residence and environmental quality in their destination selection.

Huang & Peng (2012) in a study with fuzzy model and TOPSIS, assessed the competition in the tourism industry in 9 countries in Southeast Asia. The study was conducted in 2009 using six criteria (availability of attraction, proper transportation, reasonable price, security, market for products, natural landscapes) and 15 subcategories that were scored by experts in different sectors. The results indicated that in the ranking of 9 countries, according to the mentioned criteria, China, Japan, Hong Kong, Malaysia, Thailand, Singapore, Taiwan, Korea and the Philippines ranked the best.

Mohamad & Jamil (2012) investigated and prioritized tourism priority based on the motivation of tourists in Malaysia, using TOPSIS and fuzzy methods. The results of this study showed that visiting

friends, relatives, and relaxation are two important factors in choosing the destination. In addition, meeting new people, relaxing, treating, familiarizing with new cultures, enjoying life and shopping at night are other important factors in choosing the destination of tourists.

Zhang et al., (2011) ranked 16 cities in the Yangtze River Delta, aiming to improve the competition for attracting tourists. This experimental study was carried out in two steps. In the first stage, 35 indicators were identified and entropy was determined. In the second step, TOPSIS method was used for ranking. The results showed that TOPSIS and entropy models are effective methods for evaluating and rating tourism destination attraction.

Yüksel et al., (2005) examined the centralized and decentralized tourist office in Turkey, evaluating the decentralization of the central government, as well as its potential capabilities and its advantages and disadvantages, using a general framework. Ultimately, they warn against decentralized measures and unquestionable acceptance of these policies.

Hong et al., (2006) examined the role of classification, emotional image and constraints in shaping the selection model. In this research, it was assumed that individuals classified travel destinations into similar groups, and the emotional image of these groups was used in the selection process. Originally, similar destinations were classified by the MDS[1] method, and then a native polynomial Logit model was used to determine the intention to visit a given destination. Emotional pictures of travel destinations and individual limitations are the variables

that affect this process. The dependent variables are intention to visit eight national parks in South Korea. The results showed that the concept of classification and sequential process in the choice of destination are influential. The classification of travel destinations in similar groups simplifies the process of selecting decision makers, which requires less effort to select a location. In addition, the emotional factor of the area in question, which is ignored in most researches, was also considered in this research and the results showed that this factor plays an important role in choosing the destination of the trip.

### b) Iranian Researches

Ghanbari et al., (2012) identified and prioritized tourism attractions of Ravansar city based on the potential of attracting tourists. They also determined the tourist attractions of the city and offered solutions to enhance the strengths and eliminate the obstacles and problems of seventh tourist attraction of the studied area.

Hadadiniya (2008) identified four areas of natural tourism in Khatam city, and concluded that the zone in Khwansar has the highest priority and an area in the west of Herat,has the least priority.

Shamaei & Moosivand (2011) focused on the level of the cities of Isfahan province in a research in terms of tourism infrastructure and concluded that the cities of Isfahan and Kashan, respectively, have the most importance in attracting tourists.

Soltani & Shahnooshi (2012) prioritized tourism attractions in the city of Mashhad, from the viewpoint of domestic tourists, and concluded that tourists from the holy city of Mashhad did not have a proper connection with the created new attractions.

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1- Multi-Dimensional Scaling

Nasrollahi et.al., (2014) evaluated and ranked the 16 provinces of Iran for a variety of tourist attractions and some indicators of economic growth. The results of their research indicate that Fars, Tehran, and Khorasan Razavi Provinces have the highest rankings in terms of tourism attractions. Human-made attractions have affected economic growth indices more than natural and historical attractions.

Amanpour et al., (2013) conducted a research entitled "Ranking of the cities of Khuzestan in terms of tourism indicators", using TOPSIS model. The results of this study showed that Khuzestan province, with hundreds of historical, cultural and religious attractions and the presence of war zones has great potential for development and investment in this industry. Ranking of cities indicates that the cities of Ahvaz, Dezful and Shooshtar have the highest rank.

Hajinejad (2013) conducted a study titled "Ranking of Attraction Rates and Infrastructure of Tourism in Mazandaran Province Centers" using a Strategic Factor Analysis Approach. The purpose of this study was to determine the level of tourism based on some of the factors affecting the attraction of urban tourism using TOPSIS model. The results indicated that the city of Sari is ranked first in terms of attraction and infrastructure.

Kalantari and Malek (2014) investigated the spatial analysis and leveling of tourism attractions and communication infrastructure and networks in the Iranian desert areas. The results of this study showed that tourism attractions are somewhat balanced due to the equilibrium width and the location of the middle point center near the geographical center of Khore and Biabanak. In addition, the study of the pattern of communication infrastructure and spatial distribution of tourist attraction showed that with the decrease of the area of the rating zones of communication infrastructure, the amount of tourism attractions is reduced.

## 3- Theoretical Framework
### City Tourism

Since the 1970s, cities have shrunk in their economic activity, creating new ways and means of earning income and jobs. This decline required the need for activities for the physical reconstruction of abandoned and remote areas. As tourism declined in cities, tourism was growing and it was imperative to consider whether tourism could play a role in the physical and economic recovery of cities. Accordingly, during the 1980s, policies for the development of tourism in the cities of North America and Western Europe were used widely. Urban tourism, especially in less developed countries, is an effective factor in coping with poverty, and it increases the income of different sectors, reducing unemployment and economic prosperity, and, consequently, improving the quality of life of people and increasing social welfare (Kazemi, 2007). Figure 1 shows the city tourism strategy.
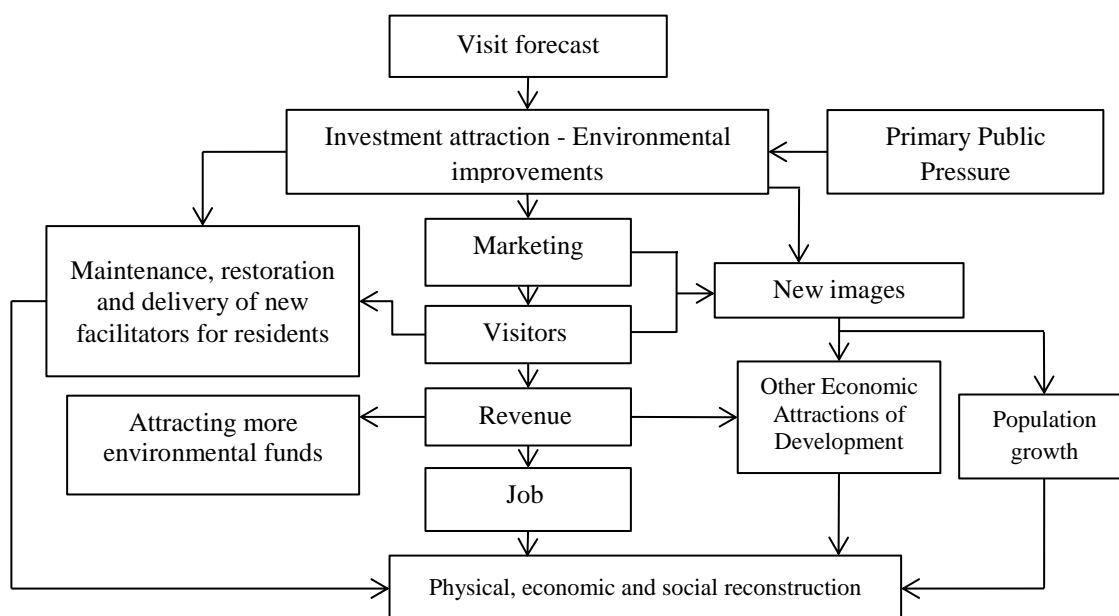
**Fig1. City Tourism Strategy**
Reference: (Ahmadi & Akbari, 2008)

Urban tourism is a new approach to understanding tourism. Some authors have presented various combinations of tourism that are ultimately linked to the form of the tourism system, because a basic concept in tourism planning is that tourism should be considered as a systemic combination of supply and demand factors that are mutually related to each other. Tourism, like any other multi-dimensional topic, is a system. As a result of this attribute and the fact that each system consists of components, tourism also has elements and components that combine each other and create the whole. Each system's correct understanding of system components needs to recognize its elements and whole. Accordingly, the tourism system consists of the following elements:

- Attractions and tourist activities
- Residential centers
- Facilities and transportation services
- Organizational elements

- Other infrastructure
- Other tourist facilities and services (Shamaei & Moosavand, 2012).

***Sustainable Tourism Development***

Sustainable tourism development is a process that is associated with improving the quality of life of hosts, meeting the demand of visitors and protecting natural and human resources. Some scholars define sustainable tourism as an approach that requires a function for and long-term quality life of both natural and human resources (Moshiri & Seyed Abousaeidi, 2010). Sustainable tourism needs to prevent the degradation of the social, cultural and ecological systems of the host society, and indigenous residents must benefit from it. To achieve sustainable tourism, this paradigm requires a combination of policy perspective, planning, management, and social learning processes (Ghadami, 2011). Table 1 presents the areas, goals and strategies for sustainable development with a tourism approach.

**Table1. Areas, goals and strategies for sustainable development with a tourism approach**

| Area | Goal | Strategy |
|---|---|---|
| Economic | Economic dynamics of the area | Raising the income level of the residents and lowering the burden, creating job opportunities, boosting local businesses, using local labor force in the administration of tourist centers |
| Social | Strengthening social life in context | Establishing social monitoring, creating leisure-time uses, eliminating social heterogeneity, attracting public participation |
| Cultural | Reviving the cultural identity of the area and relying on it in tourism planning | Revival of old behavioral norms, the implementation of ancient physical values, the identification of historical cultural values of texture to tourists |
| Physical | Creating a favorable environment for residents and tourists | Convergence of functions, elimination of incompatible uses, environmental and sanitary measures (waste disposal and surface water), the continuity of the organization of the ancient space, the definition of the pedestrian network, the limitation of the road traffic, the construction of parking |

**Reference: (Rafieyan et al., 2010)**

### 4- Research Method

This research was conducted to prioritize the tourism attractions of Khoy city and its method is descriptive-analytical and in terms of purpose, is applied. To collect the required data, documentary studies as well as field studies, observation and questionnaire were used. Researcher-made questionnaire was used with closed questions in the form five-point Likert scale. To determine the weight of the research indices, the researchers asked 30 experts' opinion and by numerical taxonomy, the final weight of the four parameters of the research was calculated and they were used in order to prioritize tourism attraction of the city.

There are a number of different quantitative methods and techniques for measuring and rating tourist attractions that are used in organizing and evaluating information depending on the availability of information and local planning skills, including taxonomic, factor, cluster analysis, and neural networks. In this research, numerical taxonomy has been used to identify and rank tourist attractions in Khoy City in terms of tourism attraction. Numerical taxonomy is a method for ranking and comparison that is able to prioritize the chosen options by combining a number of indices related to the criterion examined.

### 5- Research Findings

At the beginning of the discussion, it is necessary to explain the process of numerical taxonomy. The numerical taxonomic analysis technique consists of the following steps:

1- Forming the table of the primary information matrix based on the indices used, so that the names of the points or regions studied in a column and the values of the indicators used are written in the opposite column.

2- Different indices may have different scales, therefore, it is necessary to abandon the indices used in the scale, and to eliminate the interdependence of the indicators, and standardization can be used for this. In this research, the method of dividing the deviation of values from mean to standard deviation is used to standardize the data.

3- Calculating of distances between divisions: The difference or distance of each region is calculated relative to the other areas for each of the indicators.

4- Calculating the distance of each section (area) from the other part based on the sum of the indices used: the

numbers obtained can reach two and are horizontally collected and then taken from them. The values obtained show the distance between each section of the next section. This matrix is symmetric and its diameter is zero.

5- Determining the shortest distance: In this matrix, each element represents the distance or difference between the two parts (areas) that these regions are marked in rows and columns. In each row, the smallest value represents the shortest distance.

6- Specifying homogeneous segments: To achieve homogeneous sections, the upper limit (D +) and the lower limit (D-) for the shortest intervals are obtained from the following equation:

Formula (1): $D\pm=\bar{d}\pm2sd$

In the above relation, $\pm D$, the upper and lower limit, $\bar{d}$ is the mean of the shortest distance, and SD represents the shortest distance from the standard deviation. The points that their shortest distances are between the two upper and lower limits are homogeneous, and the points that their shortest distance from other points are not between the two upper limits are considered as heterogeneous segments.

7- Calculating the combined distance of each region from the ideal region: The largest value in each of the columns of the second stage matrix as the ideal value is selected and the combined distance of each region of the ideal region is calculated using the formula below and is indicated by the symbol $C_{io}$ indicating the distance between area i and the ideal part.

Formula (2): $C_{io}=\sqrt{(\sum (y_i-y_o)^2}$

In the above equation, $C_{io}$ is the combined distance of each part of the ideal segment, $y_i$ is the values in the standard matrix, and $y_o$ represents the ideal value of each column in the standard matrix.

8- Calculating of the degree of development of sectors (regions): At this stage, the relative level of development of each section is calculated by the following formula:

Formula (3): $F_i = \dfrac{C_{io}}{C_o}$

In the above equation, $F_i$ is the developmental level of each section, $C_{io}$ is the combined spacing of each part of the ideal segment and $C_o$ is the mean of $C_{io}$ plus twice the standard deviation of the same column as obtained from the equation:

Formula (4): $C_o = \overline{C_{io}} + 2S_{io}$

$\overline{C_{io}}$ is the mean of the $C_{io}$ column, and $S_{io}$ is the standard deviation of $C_{io}$. Fi is the output of Taxonomy method. The value of Fi is always between zero and one, and the closer to the one, indicating the backwardness of the region and closer to zero, indicates the development of the region, according to which the state of development can be determined (table2).

**Table2. Status of each region in terms of attractiveness of tourism**

| Row | Rating | Development status |
|-----|--------|--------------------|
| 1 | $0 < Fi \le 0.5$ | Relatively developed |
| 2 | $0.5 < Fi \le 0.7$ | Developing |
| 3 | $0.7 < Fi$ | Underdeveloped |

**Reference: (Momeni & Saber, 2010)**

### *Introducing Indexes*

In this research, four effective tourism indicators have been used to prioritize tourism attraction centers in Khoy. In Table 3, the studied indices in the research are described, along with the components and their calculation method.

**Table3. Used indexes in the research and related description**

| Indexes | Introduction of Indices |
|---|---|
| Infrastructure and facilities | In this research, the more attractive of the tourism destination in terms of facilities and infrastructure (electricity, drinking water, telephone, parking, etc.), the higher the score, and vice versa. |
| Facilities and welfare services | One of the important parameters for tourists is the availability of facilities and amenities in the tourism destination. In this research, the more attractive the destination in terms of facilities and services (health centers, hotels, hospitality, stores, etc.), the more score and the less access to facilities and welfare services, the less score is allocated. |
| Access | The ease of access to tourist sites is another parameter that tourists want. In this study, the extent to which accessibility (in terms of road quality criteria, distance from the city center and location relative to other attractions, etc.) is better, the location of the case, more points and; the more difficult access, the fewer score for attraction is considered. |
| No natural hazards | Naturally, as much as natural hazards (flood, earthquakes, landslides, etc.) are less in tourist attractions, the more points and with the increase of natural hazards, the point of attractiveness of tourism is reduced. |

### *The Scope of the Research*

Khoy is located in a relatively large plain, in the West Azarbaijan province, and after Urmia, it is the second city of West Azerbaijani province. The city is limited from the north to Macau and Chaldoran, from the south to Salmas, from the east to Marand and from the west to Turkey (Fig1). Khoy city with an area of 6000 Sq. Km is the largest city in the province and according to the 2006 census; it has a population of 360,509 people. In 2006, the city had 182818 inhabitants (Hakimi et.al., 2011).
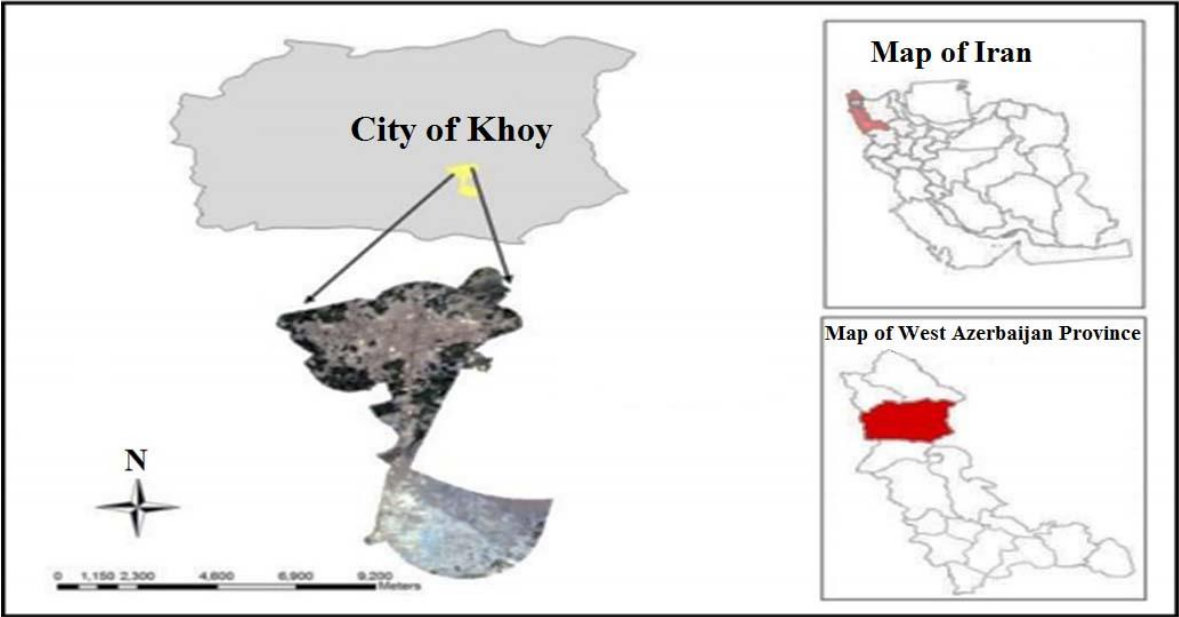


**Fig1. The location of the studied area**
Reference: **(Maboodi & Hakimi, 2015)**

### The Most Important Tourist Attractions in Khoy

**Shams Tabrizi Tower**: Shams Tabrizi tower was built on a tomb attributed to Shams Tabrizi during the Safavid dynasty. This building is located in the Imamzadeh neighborhood of Seyed-e-Bohol and in the northwest of Khoy city. The tower or minaret of Shams Tabrizi Khoi was made of bricks and was decorated with branches of wild rams and ewes (which Shah Ismail Safavi had hunted on a day). In the past, there were two minarets and domes of gold on the tomb of Shams, but now only the minaret, known as the "Kalle Ahoo," remains. At the entrance to the minaret, there are rectangular stanchions with spiral stairs that can be lifted up to the top of the tower.

**Badlan Waterfall**: Badlan Falls, also known as Ghezel Chayer Waterfall, are 35 km from Khoy and 10 km from the village of Badlan, on the Orin Mountains, more than 50 meters high. The source of water from the Badlan Falls flows through a gap into a cave pit, and from this narrow hill, there is access to the top of the cascade. The presence of small shrubs adjacent to the waterfall has given it a special beauty, and because of this, the beautiful nature of this cascade, hosts tourists and nature enthusiasts every year.

**Khoy Museum**: Khoy Museum is located on Imam Street. A 256-square-meter building of one floor of the museum consists of two halls and a small hall built in 1348. Then in 1969, in order to expand the museum, three small chambers were added. In this museum, prehistoric objects, historical periods and works related to Iranian arts and anthropology have been exhibited. One of the most valuable works of this museum is the inscription of Shah Tahmasb Safavid, manuscripts, coins of different times, beads and others.

**Shaykh Navaei Tomb**: Illuminating Tomb of Akhund Navaei, in the southwest of Khoy city, with two tiled minarets and a golden dome and a tiled facade is located at the beginning of Sheikh Navayi Boulevard. This monument has a beautiful Shrine with divine verses and flowers and plants. Around it, the graves of the martyrs of the Scholars and elders of the city of Khoy are located. With a total area of 2,000 square meters, this monument has facilities like Mosque, Hosseiniyeh, kitchen, and women and men's bathrooms and other amenities. In addition, most of the religious and cultural events in the city are held at this place and it is considered as one of the cultural and religious hubs of Khoy.

**Marakan Protected Area**: Marakan Protected Area is located south of the banks of the Aras River and in the city of Khoy. The northern border of this region is the border of Aras River and Azerbaijan Republic. This area is from the north to the Aras River, from the south to the desertification plain of the Ghor-e-Chai River, from the west to the Qare Zia al-Din agricultural area, and from the east to the main road extending from Julfa to the south. The protected area of Marakan-Khoy is one of the oldest ecosystems in the fourth quarter as the most beautiful and ecotourism area with 103, 983 hectares.

### Ranking of Khoy Tourist Centers

As previously mentioned, the priority indicators of tourism attraction centers in Khoy city were divided into four sections: infrastructure and facilities, facilities and services, access and no natural hazards, and the ranking of these centers was done using numerical taxonomic techniques. The ranking results are shown in Table 4.

**Table4. Ranking of Khoy Tourist Centers**

| Tourist Attractions | Infrastructure and facilities | Facilities and welfare services | Access | No natural hazards |
|---|---|---|---|---|
| | Fi | Fi | Fi | Fi |
| Shams Tabrizi Tower | 0.81 | 0.46 | 0.70 | 0.23 |
| Shaykh Navaei Tomb | 0.69 | 0.59 | 0.73 | 0.39 |
| Khoy Museum | 0.82 | 0.61 | 0.46 | 0.43 |
| Badlan Falls | 0.91 | 0.79 | 0.85 | 0.84 |
| Marakan Protected Area | 0.97 | 0.88 | 0.79 | 0.68 |

***Rating of Tourist Attractions in Terms of Facilities and Infrastructure***

According to Table 4, the attractions of Sheikh Navaie, Shams Tabrizi Tower, Khoy Museum, Badlan Waterfall and the protected area of Marakan, respectively, ranked first to fifth in the infrastructure and facilities sector.

***Rating of Tourist Attractions in Terms of Facilities and Services***

In terms of facilities and welfare services, Shams Tabrizi Tower, Sheikh Navaie Tomb, Khoy Museum, Badlan Waterfall, and protected area of Marakan are ranked one to five.

***Rating of Tourist Attractions in Terms of Access Index***

The ease of access to tourist sites is another important parameter for tourists. In this respect, the tourist attractions of Khoy in terms of accessibility, ranks 1 to 5 Khoy Museum, Shams Tabrizi Tower, Sheikh Navaei Tomb, Marakan Protected Area, and Badlan Waterfall, respectively.

***The Ranking of Tourist Attractions in Terms of Non-hazardous Indicators***

Naturally, the less natural hazards (flood, earthquakes, landslides, etc.) of tourist attractions, the more points and with the increase of natural hazards, the tourist attraction decreases. In terms of this indicator, the attractions of Shams Tabrizi Tower, Sheykh Navaei Tomb, Khoy City Museum, Marakan Protected Area and Badlan Waterfall are ranked one to five.

**6- Conclusion and Discussion**

Tourism is a multifunctional activity that has played a major role in regional development in the last few decades. Since tourism is a user activity that has cultural and economic consequences, it has been regarded in recent years, not only at the transnational level, but also at the national, regional and local levels. Many urban and rural planners for the development and prosperity of tourism seek to further develop their areas under the supervision and optimize tourism services in order to increase the value added of this activity. Therefore, paying attention to the potential of the regions in attracting tourists is one of the requirements for moving to the development of the regions.

One of the important problems in spatial development, especially regional tourism development, is the weakness in the hierarchy of tourism areas based on the interactive relationship between tourism areas. The leveling of the regions based on their potential in attracting tourists and services in the areas is essential for understanding the differences and determining the required services and adjusting the inequality between them. The proper exploitation of infrastructure depends on accurate knowledge and leveling of facilities,

services and capacities available in each region and area.

Accordingly, in this paper, given four indicators of infrastructure, facilities and services, welfare services, access and non-hazardous, using a numerical taxonomy model to rank tourist attractions in Khoy city, their potential to attract tourists has been addressed. The main objective of this research is to identify the factors affecting tourism attraction and the efficiency of tourism spaces. According to the results of the ranking, Shams Tabrizi tower of Khoy has the highest potential for attracting tourists in this city; in contrast, the Badlan Falls and the protected area of Marakan are among the natural attractions of Khoy City in terms of attraction of tourists and have the potential tourism, but the weakness of existing facilities, services and infrastructure, and sometimes the possibility of natural hazards in these areas, have made these regions not successful in attracting tourists. Therefore, suggestions are made as follows:

- Marketing of the tourism industry in the city of Khoy and introducing the tourist attractions of the city

- Attracting specialists in the tourism sector

- Increasing service and amenities including guesthouses and hotels

- Improving the quality of existing infrastructure to increase the satisfaction of tourists and attract more tourists

- Supporting and encouraging the private sector to invest in welfare facilities.

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