Identifying the Suitable Locations for Constructing Residential-Tourist Centers in Bojnord, Iran (Using ANP Model)

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Received: 10 August 2015   Accepted: 1 December 2015

1. Introduction
The flow of tourism develops depending on the supply of tourism product. Resorts and residential centers are one of the main factors attracting tourists in order to use the tourism product of a region. Optimal locating of residential centers, especially in cities and areas which are in the way of passing tourists, has an important role in the visitors’ using of these centers. Bojnord and its surrounding areas have a high potential for supplying tourism products to different social classes at the national and international level, including their pathway connecting the east to the northeast areas, especially Mashhad, and to the northern beaches, their annual passing of millions of tourists, their eye-catching nature, and their cultural and historical tourist attractions. A major issue which has not received due attention is the very limited use of the economic potentials of tourists for the economic development of Bojnord and its suburbs. Therefore, the current study aims to identify the suitable areas for locating and constructing tourist and residential centers in Bojnord and its surroundings.

2. Theoretical Framework
Identifying the locations suitable for developing touristic activities, especially recognizing and introducing suitable locations for constructing tourist and residential centers is one of the most common applications of Geographical Information Systems (GIS). Historical records indicate that the applications of GIS in the field of programming in tourism management first started at the beginning of the 1990s; however, its development has not happened quickly (Farajzadeh Asl, 2008). Many studies have been conducted in Iran and other countries about the locating of activities by GIS and its efficiency has been approved accordingly. For instance, Jeneiti (2007) aims to identify suitable the areas for ski resort in Rocky

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mountains; Hantli (2011) aims to identify suitable pathways for biking in Queensland; and Hosseini, Kashef and Seyyed Ameri (2013) endorse the efficiency of GIS by identifying the suitable locations for building sport complexes in Saghez, Iran.

3. Methodology
The current study has been conducted using the descriptive-analytical method and with a functional approach to the suburbs of Bojnord, located at North Khorasan, Iran. The data of this study have been collected through documentary and field studies and analyzed using Analytic Network Process (ANP). The results of data analysis have been introduced as functional layers for decision making using the GIS software.

4. Results
Analytic Network Process is a comprehensive and powerful method for accurate decision-making introduced by Saaty (1996). Since ANP is a public and developed form of Analytic Hierarchy Process (AHP), it has all the positive features of AHP, including the simplicity, flexibility, and utilization of quantitative and qualitative criteria in a simultaneous fashion, and the capacity to analyze the compatibility of judgments. In addition, ANP can consider the complex relationships (interdependence and feedback) between and among decision-making factors using the network structure instead of the hierarchical structure (Melon, 2008). In general, ANP, in combination with GIS, performs the locating process in five main steps:
1- Building the model and converting the issue into a network structure
2- Forming a binary comparative matrix and determining the priority vectors
3- Forming the super-matrix and converting it into the limit super-matrix
4- Overlapping of layers and selecting the suitable areas
5- Accommodating the results of the locating pattern with the realities on the ground
One of the most important issues which should be considered after the selection and location through GIS is to investigate to what extent the determined areas comply with the reality and situation of the area (Varesi et al., 2008). The more the identified locating factors comply with the ground realities, the more satisfying the locating results would be (Farajzade Asl, 2009). After accommodating the results with the realities on the ground, given all the effective parameters and the overlapping of the final map with the recommended map of the comprehensive plan, four areas were finally determined as the best locations for constructing residential centers in Bojnord.
A part of the identified areas largely overlaps with the recommended locations in the comprehensive plan (i.e., the city center and pathways leading to Mashhad and
Golestan jungle). Some other potential areas for constructing residential centers include the suitable areas in Baba Aman and Besh Qardash tourist areas.

5. Discussion and Conclusion
The main goal of this article is to present and codify an academic and comprehensive framework in the programming and locating system of residential areas in order to attract visitors and increase their staying time in Bojnord. The results of the study indicate that this goal may be reached through optimal locating of residential centers, especially their easy accessibility to travelers, their proximity to shopping centers and natural and historical tourist attractions, and the availability of necessary services and facilities for visitors. The results of this study significantly overlap with the findings of other studies in the field. A review of the experiences of other countries in this case shows that factors such as having access to roads and metro lines, proximity to historical sites and other tourist attractions, and availability of facilities and services near the residential centers are so effective in motivating and attracting visitors to stay in hotels. The results of the studies conducted in Iran also show that accessibility, facilities and services, historical context, antiquities, and the quality of services significantly affect the visitors’ decision-making in terms of staying in hotels and other residential centers. Based on the results of the current study and other research in the same area, a number of recommendations are presented as follows:
- Given a varied range of visitors passing and visiting Bojnord during the year and as the results of this study indicated economic factors have an important role in the visitors’ stay, it is suggested that a variety of residencies suitable for different social classes be constructed so that different groups of visitors with different levels of income are attracted to the hotels and motels.
- The points of criteria, sub-criteria, and also the attitude of visitors revealed the fact that accessibility is very important in the tendency of visitors to stay in the residential centers of Bojnord. Therefore, as the data analysis in the GIS software indicated, the hotels and motels should be positioned in the passing way of the visitors.
- Given a large number of visitors have announced that if the facilities are provided, they will stay in Bojnord for one night while most of them tend to use the shopping centers and restaurants around the residential areas, it is suggested that restaurants and shopping centers be built around residential centers so that visitors have the opportunity to use such centers.
- Nowadays, media and advertisement have an important role in boosting social, economic, and even environmental activities. In fact, as the visitors believe, the lack of advertisements is one of the barriers to developing tourism in Bojnord and its surroundings; therefore, it is recommended that the responsible custodians,
especially the Cultural Heritage and Tourism Organization as well as NGOs inform the public and introduce tourist attractions via mass media.

**Keywords:** Tourism, Locating of residential centers, Network analysis, Bojnord

**References (In persian)**


**References (In English)**


**How to cite this article:**